

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT**

**Final Environmental Assessment for:**

**Proposed Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents**

**SCAQMD No. 11112008BAR**

**State Clearinghouse No: 2008111052**

**February 2009**

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## PREFACE

This document constitutes the Final Environmental Assessment (EA) for Proposed Rule (PR) 1143 – Consumer Paint Thinners and Multi-Purpose Solvents. The Draft EA was released for a 30-day public review and comment period from November 13, 2008, to December 12, 2008. Three comment letters were received from the public on the Draft EA on or before the close of the comment period of the Draft EA. In addition, one comment letter was received from the public relative to both the proposed rule and the Draft EA on December 30, 2008. All four of these comment letters along with the responses to comments are included in Appendix B of this document.

Subsequent to release of the Draft EA, minor modifications were made to PR 1143. To facilitate identification, modifications to the document are included as underlined text and text removed from the document is indicated by ~~striketrough~~. Staff has reviewed the modifications to PR 1143 and concluded that none of the modifications alter any conclusions reached in the Draft EA, nor provide new information of substantial importance relative to the draft document. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5. Therefore, this document now constitutes the Final EA for PR 1143.

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## **CHAPTER 1**

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### **PROJECT DESCRIPTION**

**Introduction**

**California Environmental Quality Act**

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**Compliant Technologies**

**Project Description**

## INTRODUCTION

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977<sup>1</sup> as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin referred to herein as the district. By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the district<sup>2</sup>. Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP<sup>3</sup>. The 2007 AQMP concluded that major reductions in emissions of volatile organic compounds (VOC), oxides of sulfur (SOx) and oxides of nitrogen (NOx) are necessary to attain the air quality standards for ozone (the key ingredient of smog) and particulate matter (PM10 and PM2.5). Ozone, a criteria pollutant which has been shown to adversely affect human health, is formed when VOCs react with NOx in the atmosphere. ~~and has been shown to adversely affect human health and to~~ VOCs and NOx also contribute to the formation of PM10 and PM2.5.

The California Air Resources Board (CARB) generally has primary regulatory authority over consumer products. However, air pollution control districts may regulate consumer products that CARB has not yet regulated. Consumer paint thinners and multi-purpose solvents are considered to be consumer products that contribute substantial VOC emissions within the district, but they are not yet regulated by CARB, ~~which has authority to regulate emissions from consumer products~~. For this reason, these materials are considered by SCAQMD as one potential source where new VOC emission reductions can be achieved. As a result, the 2007 Air Quality Management Plan (AQMP) was adopted and includes control measure CM#2007CTS-04 – Emission Reductions from the Reduction of VOC Content of Consumer Products Not Regulated by the State Board, which seeks further VOC emission reductions from consumer products not otherwise regulated by CARB. Proposed Rule (PR) 1143 – Consumer Paint Thinners and Multi-Purpose Solvents, will implement CM#2007CTS-04 by reducing the VOC contents of these consumer products sold by suppliers, distributors, and retailers to consumers.

## CALIFORNIA ENVIRONMENTAL QUALITY ACT

PR 1143 would regulate the VOC content of consumer paint thinners and multi-purpose solvents. Because the proposed project requires discretionary approval by a public agency, it is a “project” as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this ~~draft~~ Final Environmental Assessment (EA) with no significant adverse impacts pursuant to its Certified Regulatory Program. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110. Pursuant to Rule 110, SCAQMD has prepared this ~~Draft-Final~~ EA.

CEQA and Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this ~~Draft-Final~~ EA to address the potential adverse environmental impacts

<sup>1</sup> The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health & Safety Code, §§40400-40540).

<sup>2</sup> Health & Safety Code, §40460 (a).

<sup>3</sup> Health & Safety Code, §40440 (a).

associated with the proposed project. The ~~Draft-Final~~ EA is a public disclosure document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) be used as a tool by decision makers to facilitate decision making on the proposed project.

SCAQMD's review of the proposed project shows that the project would not have a significant adverse effect on the environment. Three comment letters were received relative to the analysis prepared in the Draft EA during the 30-day public review period (from November 13, 2008 to December 12, 2008). In addition, one comment letter was received from the public relative to both the proposed rule and the Draft EA on December 30, 2008. These comment letters along with the responses to comments are included in Appendix B of this document. Prior to making a decision on the proposed rule, the SCAQMD Governing Board must review and certify that the Final EA complies with CEQA as providing adequate information on the potential adverse environmental impacts of the proposed rule. None of the comment letters presented evidence from which a fair argument can be made that there would be a significant adverse environmental impact from adopting the proposed rule. Therefore, pursuant to CEQA Guidelines §15252, no alternatives or mitigation measures are required to be included in this ~~Draft-Final~~ EA. The analysis in Chapter 2 supports the conclusion of no significant adverse environmental impacts.

## PROJECT LOCATION

PR 1143 would apply to manufacturers, distributors and sellers of consumer paint thinners and multi-purpose solvents located throughout the SCAQMD's jurisdiction. The SCAQMD has jurisdiction over an area of 10,473 square miles, consisting of the four-county South Coast Air Basin (Basin) and the Riverside County portions of the Salton Sea Air Basin (SSAB) and the Mojave Desert Air Basin (MDAB) as shown in Figure 1-1. The Basin, which is a subarea of the district, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The 6,745 square-mile Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB and MDAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal non-attainment area (known as the Coachella Valley Planning Area) is a subregion of both Riverside County and the SSAB and is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east.

## PROJECT OBJECTIVE

The objectives of PR 1143 include the following:

- Implement the 2007 AQMP control measure CM#2007CTS-04 to lower the VOC content of consumer paint thinners and multipurpose solvents that are not currently regulated by CARB;
- Establish interim and final VOC content limits for consumer paint thinners and multi-purpose solvents at 300 grams per liter (g/L) and 25 g/L, respectively, which are is-achievable using currently available low- and zero- VOC technologies from manufacturers; and
- Obtain further VOC emission reductions from consumer paint thinners and multi-purpose solvents.

## PROJECT BACKGROUND

A "consumer product," as defined under California Health and Safety Code section 41712(a)(1), is "a chemically formulated product used by household and institutional consumers, including, but not limited to, detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and

automotive specialty products, but does not include other non-aerosol paint products, furniture coatings, or architectural coatings.” CARB has the authority to regulate certain consumer products; however, local air districts retain the authority to adopt VOC standards for any consumer product category for which CARB has not already adopted a standard. See Cal. Health & Safety Code § 41712(f). As such, given that CARB does not currently regulate consumer paint thinners and multi-purpose solvents, the SCAQMD has the authority to regulate this category of consumer products.



**Figure 1-1**  
**Boundaries of the South Coast Air Quality Management District**

~~If there are no specific provisions in the Health and Safety Code regulating consumer paint thinners and multi-purpose solvents, the SCAQMD has the authority to regulate these categories of consumer products.~~

Based on CARB’s projected inventories from various sources, the estimated emissions from the entire consumer products category for the entire state of California, when compared to emissions inventories of other large VOC source categories, is the largest category at 245 tons of VOC per day. Approximately 45 percent of the entire consumer products inventory or 110.3 tons of VOC per day is emitted within SCAQMD’s jurisdiction. The 2007 AQMP estimated the inventory to be 107 tons of VOC per day by 2014 for all consumer products and 7.3 tons of VOC per day by 2014 for consumer paint thinners and multi-purpose solvents. However, a subset of the consumer products inventory from CARB’s Category of Emission Sources (CES) #88047 for multi-purpose solvents estimates this portion of the VOC inventory to be slightly higher at 7.45 tons per day. In addition to the CES #88047 inventory for multi-purpose solvents, the inventories for two other CES sources, clean-up solvents (CES #92106) at 0.97 ton of VOC per day and thinning solvents (CES #92114) at 1.78 tons of VOC per day, are also included in the total inventory estimates for 2014. Thus, the 2014 baseline emissions for these three CES source categories are approximately 10.2 tons of VOC emissions per day. Using sales-weighted

average VOC emissions of 736 g/L~~96.68~~, it is estimated that PR1143 will reduce VOC emissions from the regulated substances by approximately 9.75~~9.85~~ tons per day in 2014.

Consumer paint thinners and multi-purpose solvents are used for cleaning grease, oil, paint, and carbon deposits from tools, equipment, substrate pre-cleaning, thinning coatings and adhesives, and for other general cleaning purposes. The raw materials needed to formulate the paint thinners and multi-purpose solvents generally come from chemical plants and petroleum refineries. Multi-purpose solvents are available at a variety of retail outlets, including nationwide merchants like Lowe's and Home Depot, as well as smaller hardware stores. Approximately 1.2 million<sup>4</sup> gallons of high-VOC containing multi-purpose solvents are currently sold within SCAQMD's jurisdiction per year.

## COMPLIANT TECHNOLOGIES

Although health-based standards have not been established for VOCs, adverse health effects can occur from exposures to high concentrations of VOCs because of interference with oxygen uptake in red blood cells. In general, ambient VOC concentrations in the atmosphere are suspected to cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis, even at low concentrations. Some hydrocarbon components classified as VOC emissions are thought or known to be toxic air contaminants (TACs). VOCs are regulated primarily because they contribute to ozone formation. As a result, reducing VOCs emissions in the district has been an on-going priority effort by the SCAQMD. The following subsections identify potential compliant technologies that may be used to formulate compliant products.

### Clean Air Solvents Program

By definition a consumer product is a chemically formulated product used by household and institutional consumers. Unlike industrial facilities, consumers are unable to install air pollution control technologies to collect and destroy air pollutant emissions. As a result, reducing VOC emissions from solvents and thinners is expected to rely solely on reformulating these products with low VOC or exempt solvents. Solvents used to reformulate compliant products are described in the next subsection.

As part of implementing SCAQMD Rule 1171 – Solvent Cleaning Operations<sup>5</sup>, the SCAQMD developed the Clean Air Solvent (CAS) program to highlight ultra-low VOC technologies, as well as provide a marketing tool for the manufacturers of these ultra-low VOC products. Information on the SCAQMD's CAS program can be found at the following website: <http://www.aqmd.gov/rules/cas/index.html>. In order to qualify for CAS certification the following criteria must be met:

1. VOC concentration is no more than 25 grams of VOC per liter of material, as applied;
2. Composite vapor pressure is no more than 5 mm Hg of VOC at 20°C (68° F);
3. Reactivity is not higher than toluene; and,
4. The product contains no compounds classified as either: a) a hazardous air pollutant (HAP) by the federal Clean Air Act; b) an ozone-depleting compound (ODC); or, c) a global warming compound (GWC).

<sup>4</sup> This is based on a total inventory of 10.2 tons of VOC per day and a sales weighted average VOC content of 736 grams per liter.

<sup>5</sup> Rule 1171 limits the VOC content of most cleaning solvents to 25 grams per 4-liter or less.

Manufacturers, suppliers, and users can apply for certification of products that meet these CAS qualifications. The certification is valid for five years and can be renewed upon approval by the SCAQMD. The most common and effective cleaners that meet the CAS criteria are water-based or aqueous cleaners that contain little or no VOCs, although other options such as VOC-exempt compounds are also available.

Even though the CAS certification program was originally developed in association with Rule 1171, many of the solvent technologies from the CAS certification program can be used as consumer paint thinners and multi-purpose solvents under PR 1143. Specifically, there are 171 certified CAS solvents to date and 102 of these products can be used in the consumer market for compliance with PR 1143. The CAS product list is frequently reviewed and updated to reflect any new findings, especially those that may be directly applicable to the products that would be subject to PR 1143 requirements.

#### **Low VOC and Exempt Solvents Expected to ~~by be~~ Used to Formulate Compliant Products**

The following categories of low- and zero-VOC technologies may be able to achieve a VOC material final emission limit of 25 g/L or less and comply with PR 1143 requirements: 1) aqueous solvents; 2) exempt solvents and any blend of exempt solvents; and, 3) bio-based solvents for lowering the volatility of exempt solvents.

#### Aqueous Cleaners

On the open market, there are many aqueous—based (i.e. water-based or waterborne) cleaners currently available for use; several have been certified by the SCAQMD's CAS certification program. Further, many manufacturers have developed waterborne products that already meet the lower VOC limits. Many of these waterborne products, especially coatings, do not require thinning, and are typically supplied as “ready to use.” For some spray applications under certain climatic conditions, there are some waterborne coatings that can be thinned, but ~~with~~ water, not conventional solvent, would be used as the thinning agent. Further, aqueous cleaners, not solvent-based cleaners, would be used to cleaned waterborne coatings and other water-based products.

#### Exempt Solvent: Acetone

Acetone is a colorless, highly volatile liquid that has a fragrant, mint-like odor. Common uses for acetone are nail polish removers and for thinning paint. It has a high solvent strength greater than the other types of solvents, except for xylene, which has a similar solvent strength. Acetone is widely available at retail stores that sell solvents.

1. As a VOC: Acetone is currently listed as a Group I exempt solvent pursuant to SCAQMD Rule 102 – Definition of Terms. Acetone was originally “delisted” as a VOC by the EPA in 1995.
2. Flammability: Acetone is rated “three” for flammability by the National Fire Protection Association (NFPA). This means that acetone is considered to be a highly flammable solvent. Additional information on the flammability of acetone can be found in the “Hazards and Hazardous Materials” section in Chapter 2.
3. Toxicology: Acetone is rated “one” for health by the NFPA. This means that acetone is considered to have a slight health risk. Although acetone is naturally produced in the

human body in very small amounts, it can be harmful if inhaled, ingested or absorbed through the skin and can be fatal in large quantities.

#### Exempt Solvent: Methyl Acetate

Methyl Acetate, also known as acetic acid, methyl ester or methyl ethanoate, is a colorless liquid with a fragrant, fruity odor. Methyl acetate is commonly used as a solvent in adhesives and nail polish removers.

1. As a VOC: Methyl acetate is currently listed as a Group I exempt solvent pursuant to SCAQMD Rule 102.
2. Flammability: Methyl acetate is rated “three” for flammability by the NFPA. This means that like acetone and parachlorobenzotrifluoride, methyl acetate is considered to be a highly flammable solvent (see “Hazards and Hazardous Materials” section in Chapter 2).
3. Toxicology: Methyl Acetate is rated “two” for health by the NFPA. This means that methyl acetate is considered to have a moderate health risk. Like acetone and PCBTF, the vapors from methyl acetate can irritate the nose, throat, skin, and eyes.

#### Exempt Solvent: Parachlorobenzotrifluoride

Parachlorobenzotrifluoride (PCBTF) is a colorless liquid with a distinct aromatic odor and is distributed under the brand name “Oxsol.” PCBTF is often used in the printing industry to dissolve ink, but may also be used as a cleaning solvent for other industries. Oxsol 100 and Oxsol 300 are used in the automotive industry for parts washing as a compliant replacement for Stoddard solvent.

1. As a VOC: PCBTF is currently listed as a Group I exempt solvent pursuant to SCAQMD Rule 102.
2. Flammability: PCBTF is rated “three” for flammability by the NFPA. This means that like acetone, PCBTF is considered to be a highly flammable solvent (see “Hazards and Hazardous Materials” section in Chapter 2).
3. Toxicology: PCBTF is rated “one” for health by the NFPA. This means that, like acetone, PCBTF is considered to have a slight health risk. The vapors from PCBTF can irritate the nose, throat, skin, and eyes.

#### Bio-Based Solvents

Several manufacturers have already formulated cleaning solvents using bio-based solvents or methyl esters via soy-, coconut and grape--seed-based formulations. Several of these products have been certified pursuant to the SCAQMD’s CAS program and are currently available on the open market. Methyl esters can be used in solvent-based coatings because they are miscible in solvent. However, methyl esters are not miscible in waterborne products. Methyl esters also mix well with acetone and have been used to formulate blends so that the VOC material content is at or below 25 g/L and the overall volatility is reduced.

Table 1-1 contains a list of low-VOC products that already meet the proposed 25 g/L VOC final material limit for both waterborne and solvent-based coatings and are currently sold at several suppliers. These products are expected to be used to comply with PR 1143.

**Table 1-1**  
**Currently Available Low-VOC Products**

Product Name	Manufacturer Name	VOC <sub>MATERIAL</sub> (g/L)
Low-VOC Lacquer Thinner	Bortz Distributing	< 25
Green Envy Paint Thinner	Sunnyside Corporation	19
<u>Crown Paint Thinner NEXT</u>	<u>Packaging Services</u>	<u>0</u>
Soylent Gold Soy-based Degreaser	RAMCO Specialty Products	25
VOC Exempt Reducer IS-256	Deft Finishes	0
VOC Exempt Reducer IS-276	Deft Finishes	0
VOC Compliant Thinner	Rust-Oleum Corporation	0
Thinner 243 E	Carboline Company	0

## PROJECT DESCRIPTION

PR 1143 would apply to consumer paint thinners and multi-purpose solvents offered for sale and use within the district by manufacturers, suppliers, distributors and retailers and would limit the VOC content of these products available for purchase by consumers. The following summarizes these requirements. A copy of PR 1143 is included in Appendix A.

### Purpose

The purpose of PR 1143 is to reduce VOC emissions from consumer paint thinners and multi-purpose solvents from the use, storage, and disposal of solvent materials commonly used for thinning materials, cleaning coating equipment, and other solvent cleaning activities.

### Applicability

Suppliers, vendors, distributors, manufacturers, and users of consumer paint thinners and multi-purpose solvents will be subject to the requirements of PR 1143.

### Definitions

For the purpose of clarity and consistency throughout the rule, PR 1143 includes 15 definitions of the following terms: “consumer,” “distributor,” “exempt compound,” “formulation data,” “grams of VOC per liter of material,” “industrial maintenance coatings,” “lacquer thinners,” “multi-purpose solvents,” “paint thinners,” “person,” “retail outlet,” “solicit,” “solvents,” “solvent cleaning,” “solvent flushing,” and, “VOC.”

### Requirements

PR 1143 contains a proposal to establish interim and final limits of the VOC content of consumer paint thinners and multi-purpose solvents at 300 25 grams per liter (g/L) of material which is equivalent to 2.5 0.21 pounds per gallon (lb/gal) of material after any dilution effective January 1, 2010 and 25 g/L of material which is equivalent to 0.21 lb/gal of material after any dilution effective January 1, 2011, respectively.

PR 1143 also contains a “sell-through” provision that would allow applicable solvents that are manufactured prior to January 1, 2010 to be sold, offered for sale and used for up to one year six months after January 1, 2010 or January 1, 2011. Manufacturers must also maintain sales and distribution records that clearly indicate the manufacture date, the solvent name and volume sold or distributed.

PR 1143 contains a prohibition of sale that would restrict the sale or distribution of any paint thinner or multi-purpose solvent that exceeds the VOC limit of 25 g/L of material (0.21 lb/gal of material) within the district. However, if the sale or distribution occurs outside of the district or if the product qualifies for the sell-through provision, then the prohibition of sale would not apply. In addition, the prohibition of sale would not apply provided that the product meets at least one of the exemptions and the manufacturer provides written notification of the product’s compliance status to the buyer/independent distributor.

This subdivision also contains a provision that would require solvent containers such as drums, buckets, cans, pails, trays or other application containers to be closed when not in use. Lastly, this subdivision prohibits the sale or offer for sale, manufacture, blend or repackaging of consumer paint thinners or multi-purpose solvents that contain in excess of 0.1 percent by weight of any Group II exempt compounds except cyclic, branched, or linear, completely methylated siloxanes.

#### Administrative Requirements

PR 1143 contains a proposal that would require point-of-sale containers to display the VOC content as supplied, the recommended dilution, if any, and the manufacture date or code representing the manufacture date. In addition, PR 1143 would require manufacturers and distributors that sell and/or distribute paint thinners and multi-purpose solvents within the district to submit an application for an identification number and provide a list of all distributors within the United States on or before May 1, 2010. Beginning April 1, 2010, PR 1143 would also require each manufacturer and distributor to submit annual quantity and emissions reports.

#### Prohibition of Sale

~~PR 1143 contains a prohibition of sale that would restrict the sale or distribution of any paint thinner or multi-purpose solvent that exceeds the VOC limit of 25 g/L of material (0.21 lb/gal of material) within the district. However, if the sale or distribution occurs outside of the district or if the product qualifies for the sell-through provision, then the prohibition of sale would not apply.~~

#### Recordkeeping

PR 1143 would require manufacturers and distributors to maintain records for five years including but not limited to: 1) the receipt for the identification number application; 2) verification data for determining annual paint thinner and multi-purpose solvent sales and corresponding VOC emissions in the district; 3) other data needed to demonstrate compliance; 4) product formulation records; 5) production records; 6) distribution records; and, 7) sales records.

### Compliance Dates

PR 1143 would require manufacturers and distributors to submit an application for an identification number no later than 30 calendar days prior to manufacturing, distributing or selling paint thinners and multi-purpose solvents for use in the district after July 1, 2009. In the event of a change in the manufacturer, PR 1143 would require the new manufacturer to apply for an identification number within 30 calendar days of the change, provided that the application references the previous manufacturer's identification number.

### Confidentiality of Information

PR 1143 would allow submittals of information to the SCAQMD to be designated as confidential pursuant to the California Public Records Act in Government Code §§6250 – 6276.48, provided that the applicant provides a detailed and complete basis for the confidentiality claim.

### Test Methods

PR 1143 would allow the most recently approved version of the following test methods to be used to verify compliance with the proposed rule requirements: 1) EPA Reference Test Method 24; and, 2) SCAQMD Method 304. However, other equivalent test methods that have been given written approval by the SCAQMD, CARB or EPA may also be used. Further, PR 1143 specifies certain perfluorocarbon compounds as exempt for the purpose of determining compliance with the proposed VOC limit. In the event ~~of~~ that multiple test methods are used to determine compliance and the results are not consistent, PR 1143 would consider any results from a test method that demonstrated non-compliance to be a violation of the rule.

### Exemptions

PR 1143 would exempt: 1) solvents to be shipped outside of the district or to be shipped to other manufacturers for repackaging; 2) ~~and~~ solvents for sale and used for cleaning application equipment used to apply polyaspartic and polyurea coatings; 3) thinners for sale and use provided that they are not for clean-up operations and are labeled and used as thinning architectural-industrial maintenance (IM) coatings, Zinc-Rich IM primers, and high temperature IM coatings; and, ~~In addition, PR 1143 would exempt~~ 4) reagents used for analytical, educational, research, and scientific purposes.

## **CHAPTER 2 - ENVIRONMENTAL CHECKLIST**

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**Introduction**

**General Information**

**Environmental Factors Potentially Affected**

**Determination**

**Environmental Checklist and Discussion**

## INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

## GENERAL INFORMATION

Project Title:	Proposed Rule (PR) 1143 – Consumer Paint Thinners and Multi-Purpose Solvents
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
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PR 1143 Contact Person:	Don Hopps, (909) 396-2334
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	<p>The objective of PR 1143 is to implement Control Measure CTS-04 in the 2007 Air Quality Management Plan (AQMP) to reduce emissions of volatile organic compound (VOC) emissions from the use of paint thinners and multi-purpose solvents that are typically sold through retail outlets or through any entity that uses, distributes or sells these materials within SCAQMD's jurisdiction. PR 1143 would: 1) establish <u>an interim VOC content limit of 300 25-grams per liter-g/L of material (0.212.5 lb/gal of material) for consumer paint thinners and multi-purpose solvents, effective January 1, 2010 and a final VOC content limit of 25 g/L per liter of material (0.21 lb/gal of material) for consumer paint thinners and multi-purpose solvents, effective January 1, 2011</u>; 2) establish a sell-through provision that would allow consumer paint thinners and multi-purpose solvents manufactured prior to January 1, 2010 to be used up to <u>six months one year</u> after the compliance date; 3) require manufacturers and their distributors to submit an application to obtain a manufacturer's identification number <u>by July 1, 2009</u>; 4) require point-of-sale containers to display the VOC content as supplied, the recommended dilution, if any, and the manufacture date; 5) establish an exemption for products sold in the district for shipment and use out of the district; <del>and</del> 6) establish <u>an exemptions for the cleaning of application equipment when used for polyaspartic and polyurea coatings; and, 7) establish an exemption for architectural thinners used for certain Industrial Maintenance specialty coatings and primers; and 8) establish an exemption for laboratory reagents used in analytical, educational and laboratory settings.</u> PR 1143 is estimated to reduce VOC emissions by <u>9.75 9.85</u> tons per day by 2014. The environmental analysis in the <u>Draft Final</u> EA concluded that PR 1143 would not generate any significant adverse environmental impacts.</p>

Surrounding Land Uses and Setting: Primarily residential and/or institutional

Other Public Agencies Whose Approval is Required: Not applicable

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED**

The following environmental impact issues have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Aesthetics            | <input type="checkbox"/> Agriculture Resources                    | <input checked="" type="checkbox"/> Air Quality                        |
| <input type="checkbox"/> Biological Resources  | <input type="checkbox"/> Cultural Resources                       | <input type="checkbox"/> Energy  |
| <input type="checkbox"/> Geology/Soils         | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/<br>Water Quality        |
| <input type="checkbox"/> Land Use/Planning     | <input type="checkbox"/> Mineral Resources                        | <input type="checkbox"/> Noise   |
| <input type="checkbox"/> Population/Housing    | <input type="checkbox"/> Public Services                          | <input type="checkbox"/> Recreation                                    |
| <input type="checkbox"/> Solid/Hazardous Waste | <input type="checkbox"/> Transportation/<br>Traffic               | <input checked="" type="checkbox"/> Mandatory Findings of Significance |

**DETERMINATION**

On the basis of this initial evaluation:

- I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.
- I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.
- I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1)has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: November 12, 2008

Signature: Steve Smith

Steve Smith, Ph.D.  
Program Supervisor

**ENVIRONMENTAL CHECKLIST AND DISCUSSION**

As discussed in Chapter 1, PR 1143 is estimated to reduce VOC emissions by ~~9.75~~ ~~9.85~~ tons per day by 2014 by establishing an interim VOC limit of 300 grams per liter of material (2.5 pounds per gallon of material) beginning January 1, 2010 and a final VOC limit of 25 grams per liter of material (0.21 pounds per gallon of material) for consumer paint thinners and multi-purpose solvents beginning January 1, 2010 for consumer paint thinners and multi-purpose solvents. The answers to the following checklist items are based on the assumption that new formulations of paint thinners and multi-purpose solvents would be used to meet the requirements of PR 1143. Therefore, no construction activities or equipment will be necessary to comply with PR 1143.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>I. AESTHETICS.</b> Would the project:			
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

**Discussion**

**I.a), b), c) & d)** PR 1143 would reduce VOC emissions from paint thinners and multi-purpose solvents by establishing an interim VOC limit of 300 g/L (2.5 lb/gal) of material effective January 1, 2010 and a final VOC limit of 25 g/L ~~grams per liter~~ of material (0.21 ~~lb/gal pounds per gallon~~ of material) effective January 1, 2010. The primary method of compliance with PR 1143 will be reformulated paint thinners and multi-purpose solvents that are low-VOC or water-based products. Thus, implementation of PR 1143 would not result in any new construction of buildings or other structures that would obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings. Similarly, additional light or glare would not be created which would adversely affect day or nighttime views in the area since no light generating equipment would be required to comply with PR 1143. Further, the use of reformulated paint thinners and multi-purpose would not appreciably change the visual profile of the building(s) where the reformulated products are used.

Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this ~~Draft-Final~~ EA. Since no significant aesthetics impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>II. AGRICULTURE RESOURCES.</b> Would the project:			
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Project-related impacts on agricultural resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

**Discussion**

**II.a), b), & c)** Since PR 1143 primarily relies on reformulated products for compliance, the proposed project would not result in any new construction of buildings or other structures that would convert farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. Product reformulations would not require converting farmland to non-agricultural uses because the production and use of reformulated paint thinners and multi-purpose solvents would occur completely within the confines of affected residences’ or institutions’ boundaries.

Based upon these considerations, significant agricultural resource impacts are not anticipated and will not be further analyzed in this ~~Draft-Final~~ EA. Since no significant agriculture resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>III. AIR QUALITY.</b> Would the project:			
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**III.a)** PR 1143 is being implemented to reduce VOC emissions from consumer paint thinners and multi-purpose solvents. Implementing PR 1143 would implement the 2007 AQMP control measure (CM#2007CTS-04), which seeks to further reduce VOC emissions from consumer products not regulated by CARB. Attainment of the state and federal ambient air quality standards protect sensitive receptors and the public in general from the adverse effects of criteria pollutants which are known to have adverse human health effects. Based on the discussion under items III. b, c) and f), reducing the VOC content of these consumer products as proposed in PR 1143, would contribute to carrying out the goals of the AQMP to reduce VOC emissions, which in turn, contribute to attaining the state and federal ambient air quality standards for ozone and, to a lesser extent, PM10 and PM2.5. Thus, PR 1143 will ultimately contribute to attaining and maintaining these ambient air quality standards with a margin of safety, which contributes to carrying out the goals of the 2007 AQMP.

As noted in the following analysis, PR 1143 will result in a permanent reduction of VOC emissions. Further, PR 1143 will not obstruct implementation of the AQMP. Therefore, the reduction of VOC emissions from implementing PR 1143 is a beneficial effect such that it will not be further analyzed in this ~~Draft-Final~~ EA.

**III.b), c) & f)** For a discussion of these items, refer to the following analysis.

### **Air Quality Significance Criteria**

To determine whether or not air quality impacts from adopting and implementing PR 1143 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. The project will be considered to have significant adverse air quality impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

### **Construction Impacts**

Since PR 1143 will only affect future formulations of consumer paint thinners and multi-purpose solvents, implementation of PR 1143 is not expected to require physical changes or modifications that would involve construction activities. As a result, there will be no construction air quality impacts resulting from the proposed project. Therefore, potential construction air quality impacts will not be considered further in this [Draft Final EA](#).

### **Operational Impacts – Direct**

The overall objective of PR 1143 is to reduce VOC emissions from consumer paint thinners and multi-purpose solvents. PR 1143 is estimated to reduce VOC emissions from consumer paint thinners and multi-purpose solvents by ~~9.75~~ 9.85 tons per day. Quantification of VOC emission reductions anticipated from implementing PR 1143 was derived from the current emission inventory for these consumer products. The following sections describe the methodology used to derive the emission inventory for consumer paint thinners and multi-purpose solvents and the VOC emission reductions anticipated for PR 1143.

#### VOC Emissions Inventory

Based on CARB's projected inventories from various sources, the estimated emissions from the entire consumer products category for the entire state of California, when compared to emissions inventories of other large VOC source categories, is the largest category at 245 tons of VOC per day. Approximately 45 percent of the entire consumer products inventory or 110.3 tons of VOC per day is emitted within SCAQMD's jurisdiction. The 2007 AQMP estimated the inventory to be 107 tons of VOC per day by 2014 for all consumer products and 7.3 tons of VOC per day by 2014 for consumer paint thinners and multi-purpose solvents. However, a subset of the consumer products inventory from CARB's CES #88047 for multi-purpose solvents estimates this portion of the VOC inventory to be slightly higher at 7.45 tons per day. In addition to the CES #88047 inventory for multi-purpose solvents, the inventories for two other CES sources, clean-up solvents (CES #92106) at 0.97 ton of VOC per day and thinning solvents (CES #92114) at 1.78 tons of VOC per day, are also included in the total inventory estimates for 2014. Thus, the 2014 baseline emissions for these three CES source categories are approximately 10.2 tons of VOC emissions per day. The following paragraphs show how the emission inventory for this category and anticipated ~~VOC~~ reductions from PR 1143 were derived.

The volume for each CES category can be determined by using the sales-weighted average (SWA) of 736 g/L VOC material content as shown in the following calculations:

#### **Sales-Weighted Average VOC content conversion from g/L to lb/day:**

$$736 \text{ g/L} \times (1 \text{ lb/gal}/119.83 \text{ g/L}) = 6.14 \text{ lb/gal VOC, and,}$$

**Table 2-1  
SCAQMD Air Quality Significance Thresholds<sup>6</sup>**

<b>Mass Daily Thresholds</b>		
<b>Pollutant</b>	<b>Construction</b>	<b>Operation</b>
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
<b>Toxic Air Contaminants and Odor Thresholds</b>		
Toxic Air Contaminants (TACs) Accidental Release of Acutely Hazardous Materials (AHMs)	MICR $\geq$ 10 in 1 million ; HI $\geq$ 1.0 (project increment) CAA §112(r) threshold quantities	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
<b>Ambient Air Quality for Criteria Pollutants<sup>(a)</sup></b>		
NO <sub>2</sub>  1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.25 ppm (state) 0.053 ppm (federal)	
PM10 24-hour average  annual geometric average annual arithmetic mean	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>(b)</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation)  1.0 $\mu\text{g}/\text{m}^3$ 20 $\mu\text{g}/\text{m}^3$	
PM2.5 24-hour average	10.4 $\mu\text{g}/\text{m}^3$ (construction) <sup>(b)</sup> & 2.5 $\mu\text{g}/\text{m}^3$ (operation)	
Sulfate 24-hour average	1 $\mu\text{g}/\text{m}^3$	
CO  1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:  20 ppm (state) 9.0 ppm (state/federal)	

(a) Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

(b) Ambient air quality threshold based on SCAQMD Rule 403.

KEY: MICR = maximum individual cancer risk                      HI = Hazard Index  
 $\mu\text{g}/\text{m}^3$  = microgram per cubic meter                      ppm = parts per million  
 AHM = acutely hazardous material;                      TAC = toxic air contaminant

<sup>6</sup> CEQA Air Quality Handbook, SCAQMD, November 1993.

**Multi-Purpose Solvents (CES #88047):**

Inventory = 7.45 tons VOC/day or 14,900 lb VOC/day  
 (14,900 lb/day / 6.14 lb/gal) x 1 day = 2,426.7 gal/day or 885,746 gal/yr

**Cleanup Solvents (CES #92106):**

Inventory = 0.969 ton VOC/day or 1,938 lb VOC/day  
 (1,938 lb/day / 6.14 lb/gal) x 1 day = 315.6 gal/day or 115,194 gal/yr

**Thinning Solvents (CES #92114):**

Inventory: 1.783 tons VOC/day or 3,566 lb VOC/day  
 (3,566 lb/day / 6.14 lb/gal) x 1 day = 580.8 gal/day or 211,992 gal/yr

As summarized in Table 2-2, the total solvent usage for the sum of these three solvent categories is estimated to be 3,323 gallons per day or 1,212,932 gallons per year.

**Table 2-2**  
**Estimated Usage of Consumer Paint Thinners and Multi-Purpose Solvents**

Description	CES #	Daily Usage (gal)	Annual Usage* (gal)
Multi-purpose solvent	88047	2,426.7	885,746
Clean-up solvents	92106	315.6	115,194
Thinning solvents	92114	580.8	211,992
	<b>TOTAL</b>	<b>3,323</b>	<b>1,212,932</b>

\* Annual usage is based on 365 days per year.

Using an SWA at 736 g/L VOC, PR 1143 estimates a reduction in VOC emissions by approximately 96.6 percent as calculated according to the following equation:

$$\{(SWA\ VOC - Proposed\ VOC) / SWA\ VOC\} = \{(736 - 25) / 736\} = 0.966\ or\ 96.6\%$$

The anticipated total emission reduction can then be calculated from the emissions inventory according to the following equation:

$$10.2\ tons/day\ x\ 0.966 = 9.85\ tons/day\ of\ VOC\ reductions\ by\ 2014$$

However, the proposed exemptions for the thinning of IM coatings, Zinc-Rich IM Primers, and High Temperature IM Coatings are estimated to account for approximately 0.1 ton per day of VOC emissions. Therefore, implementation of PR 1143 is expected to achieve emission reductions of up to 9.75 tons per day by the year 2014.

Therefore, implementation of PR 1143 is expected to achieve VOC emission reductions up to 9.75 ~~9.85~~ tons per day by the year 2014.

### Toxicity of Cleaners and Solvents

The primary effect of PR 1143 is that it would establish a 25 g/L VOC material content limit for consumer paint thinners and multi-purpose solvents. However, PR 1143 does not dictate any particular product formulation. The proposed project may, however, result in the use of formulations that could potentially contain toxic constituents and pose flammability risks. Since there are many different product manufacturers and formulations of paint thinners and multi-purpose solvents, as well as many different applications or uses, the specific chemical composition of the reformulated products is not known. Based upon currently available information, the primary replacement solvents are expected to be methyl acetate or PCBTF. Because of its cost, it is expected that acetone will also be widely used as a component of compliant products. However, acetone is currently used in multipurpose cleaning solvents in a variety of settings including: industrial, institutional, and commercial applications. All three of these solvents are listed as Group I exempt solvents in SCAQMD Rule 102. Like conventional solvents, the three solvents identified here as compliant replacement solvents, may have flammability and toxicological issues. However, there are other potential replacement solvents such as aqueous or water-based cleaning solvents, bio-based solvents, and methyl esters that are currently available and that are expected to be developed to comply, not only with PR 1143, but other low-rules that regulate VOC emissions through solvent reformulations. These products can or are expected to be used as replacements that do not have flammability and toxicology concerns.

For the purpose of conducting a worse-case analysis, it is assumed that products compliant with PR 1143 would be formulated by using Group I exempt compounds to replace many organic solvents that contain toxic compounds currently used as paint thinners and multi-purpose solvents<sup>7</sup>. Commonly used products that would likely be replaced include, for example, denatured alcohol (ethanol), methyl ethyl ketone (MEK), mineral spirits (Stoddard solvent), toluene, xylene, and varnish maker's and painter's (VMP) naphtha.

A compilation of toxicological information of representative conventional solvents and their possible replacements is given below. This information was extracted from the following sources: Agency for Toxic Substances and Disease Registry ToxFAQs; New Jersey's Department of Health, Right to Know Program's Hazardous Substance Fact Sheets; EPA's Integrated Risk Information System; EPA's Chemicals In the Environment: OPPT Chemical Fact Sheets; [the National Institute for Occupational Safety and Health \(NIOSH\)](#) NIOSH Pocket Guide to Chemical Hazards; NIOSH Documentation for Immediately Dangerous to Life or Health Concentrations; OSHA Health Guidelines; and Department of Health and Human Services National Toxicology Program Chemical Repository.

### Conventional Solvents

Consumer paint thinners and multi-purpose solvents are used for cleaning grease, oil, paint, and carbon deposits from tools, equipment, substrate pre-cleaning, thinning coatings and adhesives, and for other general cleaning purposes. The raw materials needed to formulate the paint thinners and multi-purpose solvents generally come from chemical plants and petroleum refineries. Multi-purpose solvents are available at a variety of retail outlets, including

<sup>7</sup> [Note that PR 1143 contains a general prohibition against the sale, manufacture, blend or repackage of any consumer paint thinner or multi-purpose solvent that contains in excess of 0.1 percent by weight of most Group II exempt compounds listed in SCAQMD Rule 102.](#)

nationwide chain home improvement retail stores, as well as smaller hardware stores. Approximately 1.2 million<sup>8</sup> gallons of high-VOC containing multi-purpose solvents are currently sold within SCAQMD's jurisdiction per year.

Table 2-3 summarizes the most commonly solvents currently used for cleaning and thinners available for purchase at hardware and chain home improvement retail stores and their chemical properties. One of the currently used solvents listed in Table 2-3, acetone, is also expected to be used to formulate compliant products as it is exempt as a VOC because it does not contribute appreciably to ozone formation. These materials are typically sold in quart, gallon and five-gallon containers.

**Table 2-3**  
**Common Multi-Purpose Solvents Available For Purchase at Hardware Stores<sup>1</sup>**

Solvent Name	VOC Content (grams/liter)	Boiling Point (°F)	Flash Point <sup>2</sup> (°F)	Health Rating <sup>3</sup>	Flammability Rating <sup>3</sup>	Evaporation Rate (Butyl Acetate = 1)
Acetone	exempt	133.2	4.6	1	3	5.7
Denatured Alcohol	797	150.8	53.5	1	3	2.3
Isopropyl Alcohol	786	180.0	53.0	1	3	2.3
Lacquer Thinner	797	212.6	7.4	2	3	2.7
Methyl Ethyl Ketone (MEK)	807	175.0	21.8	1	3	4.4
Mineral Spirits	781	349.9	104.7	1	2	0.1
Paint Thinner	838	299.6	93.6	2	3	1.4
Toluene	870	230.8	41.8	2	3	2.0
Turpentine	863	323.7	94.3	1	3	0.7
Varnish Makers & Printers Naphtha	754	266.9	53.1	1	3	1.2
Xylene	870	293.2	79.3	2	3	1.4

<sup>1</sup> Values in this table are based on averaged data from multiple Material Safety Data Sheets (MSDS).

<sup>2</sup> There are different methods that can be used to determine the flashpoint of a solvent but the most frequently used method is the Tagliabue Closed Cup standard (ASTM D56), also known as the TCC. The flashpoint is determined by a TCC laboratory device which is used to determine the flash point of mobile petroleum liquids with flash point temperatures below 175 °F (79.4 °C).

<sup>3</sup> The meaning of the National Fire Protection Association's (NFPA) health and flammability ratings are as follows: "0" means least hazard potential, "1" means slight hazard potential, "2" means moderate hazard potential, "3" means high hazard potential, and "4" means extreme hazard potential.

The subsections below provide brief summaries of the physical and chemical properties of commonly used solvents currently used for cleaning and thinners available.

<sup>8</sup> This is based on a total inventory of 10.2 tons of VOC per day and a sales weighted average VOC content of 736 grams per liter.

## Acetone

1. Acetone is a colorless, highly volatile liquid that has a fragrant, mint-like odor. It is a manufactured chemical that is also found naturally in the environment. It occurs naturally in plants, trees, volcanic gases, forest fires, and as a product of the breakdown of body fat. It is present in vehicle exhaust, tobacco smoke, and landfill sites. Acetone is used to make plastic, fibers, drugs, and other chemicals. It is also used to dissolve other substances. Industrial processes contribute more acetone to the environment than natural processes. Common uses for acetone are nail polish removers and for thinning paint. It has a high solvent strength greater than the other types of solvents, except for xylene, which has a similar solvent strength. Acetone is widely available at retail stores that sell solvents.
2. As a VOC: Acetone is currently listed as a Group I exempt VOC pursuant to SCAQMD Rule 102 – Definition of Terms, because it does not contribute appreciably to ozone formation. Acetone was originally “delisted” as a VOC by the EPA in 1995.
3. Flammability: Acetone is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
4. Toxicology: Acetone is rated “one” for health by the NFPA which means that it is considered to have a slight health risk. Though acetone is naturally produced in the human body in very small amounts, acetone can be harmful if inhaled, ingested or absorbed through the skin and can be fatal in large quantities. Acetone is absorbed into the bloodstream and carried to all the organs in the body. If it is a small amount, the liver breaks it down to chemicals that are not harmful and uses these chemicals to make energy for normal body functions. Breathing moderate-to-high levels of acetone for short periods of time, however, can cause nose, throat, lung, and eye irritation; headaches; light-headedness; confusion; increased pulse rate; effects on blood; nausea; vomiting; unconsciousness and possibly coma; and shortening of the menstrual cycle in women. Swallowing very high levels of acetone can result in unconsciousness and damage to the skin in the mouth. Skin contact can result in irritation and damage to your skin.

Health effects from long-term exposures are known mostly from animal studies. Kidney, liver, and nerve damage, increased birth defects, and lowered ability to reproduce (males only) occurred in animals exposed long-term. It is not known if these same effects would occur in people. California does not list acetone as a reproductive toxicant under Proposition 65.

The Department of Health and Human Services, the International Agency for Research on Cancer, and the EPA have not classified acetone for carcinogenicity. Acetone does not cause skin cancer in animals when applied to the skin. It is unknown, however, if breathing or swallowing acetone for long periods will cause cancer. Studies of workers exposed to it found no significant risk of death from cancer. Acetone has not been identified by CARB as a TAC under AB 1807, but is listed in Category 3 (substances which are being evaluated for entry into Category 2) on the TAC Identification List. Acetone is also included in the list of “Substances for which emissions must be quantified” under AB 2588 Air Toxics “Hot

Spots” Program. The 1990 Federal Clean Air Act Amendments do not list acetone as a HAP. Acetone is listed as a Group I exempt compound in SCAQMD Rule 102.

### Denatured Alcohol

Denatured alcohol, also referred to as ethanol or ethyl alcohol, is used as a solvent and in making many commercial products. Denatured alcohol is a colorless liquid and has a strong odor of ethanol. The term “denatured” means that an additive has been mixed into the alcohol to make the taste unpleasant and toxic to human health so that it will not be consumed as a beverage. Typical additives are methanol, isopropyl alcohol, acetone, methyl ethyl ketone, methyl isobutyl ketone. Denatured alcohol is an ethanol that can be used as a solvent for cleaning and in some cases, thinning. It can also be used as an aid for sanding wood. Denatured alcohol has a high VOC content and can be found for sale at most hardware stores.

1. As a VOC: Denatured alcohol has a high VOC material content that ranges from 791 g/L to 815 g/L.
2. Flammability: Denatured alcohol is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: Denatured alcohol is rated “one” for health by the NFPA which means that it is considered to have a slight health risk. Denatured alcohol vapors are an irritant of the eyes (can cause blindness) and respiratory system at concentrations ranging from 5,300 ppm to 10,600 ppm. Vapor concentrations above 20,000 ppm are considered intolerable. The no-effect level for irritation is considered to be 1,000 ppm. Inhalation of large concentrations of denatured alcohol causes narcosis, ataxia and lack of coordination. Death occurs at high doses from central nervous system depression. Inhalation of 10,000 ppm to 30,000 ppm over eight hours or more has caused death in rats. Chronic adverse effects on the liver have been observed in both animals and humans. Denatured alcohol has not been demonstrated to be carcinogenic; however, it may be a promoter or co-carcinogen in animals concurrently exposed to other carcinogens.

### Isopropyl Alcohol

Isopropyl alcohol (IPA), also referred to as isopropanol, isopro, and rubbing alcohol, is a colorless liquid with a strong odor. IPA is a widely used solvent for medical and industrial applications because it sanitizes the treated area and dries rapidly. For industrial applications, IPA is commonly used to clean electronic circuits and electronic devices. IPA can be found for sale at hardware and drugstores stores.

1. As a VOC: IPA has a high VOC material content that ranges from 787 g/L to 815 g/L.
2. Flammability: IPA is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: IPA is rated “one” for health by the NFPA which means that it is considered to have a slight health risk. IPA is approximately twice as toxic as ethanol

and can be fatal if swallowed and not treated. When ingested, IPA is first oxidized by the liver which in turn produces acetone. It can also irritate the eyes, nose, and throat for brief periods. Isopropyl oil, used in the manufacturing of IPA, has been linked to paranasal sinus cancer.

### Lacquer Thinner

Lacquer thinner is manufactured from petroleum distillates and blended with other solvents; it offers similar properties as toluene but costs less. Lacquer thinner is mainly used as a thinning agent for nitrocellulose and acrylic lacquers, but can also be used as thinners for epoxies, automotive paint and gravure printing inks.

1. As a VOC: Lacquer thinner has a high VOC material content that ranges from 739 g/L to 850 g/L.
2. Flammability: Lacquer thinner is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: Lacquer thinner is rated “two” for health by the NFPA which means that it has a moderate health risk. The vapors from lacquer thinner can irritate the eyes, skin and upper respiratory tract and can cause headache, nausea, dizziness, and loss of coordination. If absorbed through the skin, lacquer thinner can cause redness.

### Methyl Ethyl Ketone

Methyl ethyl ketone (MEK), also known as butanone, is a manufactured organic solvent and has a butterscotch odor similar to acetone. MEK is an effective solvent because of its ability to dissolve gums, resins, cellulose acetate and nitrocellulose coatings.

The primary use of methyl ethyl ketone (MEK), accounting for approximately 63 percent of all use, is as a solvent in protective coatings. It is also used as a solvent in printing inks, paint removers, and other cleaning products; in the production of magnetic tapes; and in dewaxing lubricating oil. MEK is used as a chemical intermediate in several reactions, including condensation, halogenation, ammonolysis, and oxidation. Small amounts of MEK are also used as a sterilizer for surgical instruments, hypodermic needles, syringes, and dental instruments; as an extraction solvent for hardwood pulping and vegetable oil; and as a solvent in pharmaceutical and cosmetic production.

1. As a VOC: MEK has a high VOC material content that ranges from 803 g/L to 810 g/L.
2. Flammability: MEK is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: MEK is rated “one” for health by the NFPA which means that it is considered to have a slight health risk. Breathing MEK for short periods of time, such as when painting in a poorly vented area, can adversely affect the nervous system. Effects range from headaches, dizziness, nausea, and numbness in fingers and toes to unconsciousness. MEK vapor irritates the eyes, the nose, and the throat. Direct, prolonged contact with liquid MEK irritates the skin and damages the eyes. Human

health effects associated with breathing or otherwise consuming smaller amounts of MEK over long periods of time are not known. Workers have developed dermatitis, upset stomachs, loss of appetite, headaches, dizziness, and weakness as a result of repeated exposure to MEK. Laboratory studies show that exposure to large amounts of MEK in air causes animals to give birth to smaller offspring. Studies also show that repeated exposure to large amounts of MEK in air causes adverse liver and kidney effects in animals. The 1990 Clean Air Act Amendments list MEK as a hazardous air pollutant because it has been shown to have mutagenic effects in bacteria and possible teratogenic effects in humans.

### Mineral Spirits

Mineral spirits, also known as Stoddard solvent, is a petroleum distillate that is used to remove oils, grease, and carbon and is added to thread cutting oils as a cleaning agent. Mineral spirits can be further refined so that the aromatics are removed which results in a product called “odorless” mineral spirits. Odorless mineral spirits are favored for oil painting because they are less toxic and do not emit strong odors like unrefined mineral spirits.

1. As a VOC: Mineral spirits has a high VOC material content that ranges from 759 g/L to 790 g/L.
2. Flammability: Mineral spirits is rated “two” for flammability by the NFPA which means that is considered to be moderately flammable.
3. Toxicology: Mineral spirits is rated “one” for health by the NFPA which means that it is considered to have a slight health risk. The vapors from mineral spirits can irritate the eyes, nose, throat, skin, and in larger doses can cause chemical pneumonitis. The International Agency for Research on Cancer (IARC) has determined that Stoddard solvent is not classifiable as to its carcinogenicity to humans.

### Paint Thinner

Paint thinner is a petroleum distillate similar to odorless mineral spirits. The primary purpose of paint thinner is to thin oil-based paint. However, paint thinner is effective for degreasing tools and general household cleaning.

1. As a VOC: Paint thinner has a high VOC material content that ranges from 775 g/L to 882 g/L.
2. Flammability: Paint thinner is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. 3-Toxicology: Paint thinner is rated “two” for health by the NFPA which means that it has a moderate health risk. The vapors from paint thinner can irritate the eyes, nose, and throat and can cause headaches and dizziness.

## Toluene

Toluene is a colorless liquid that has a sweet, pungent, benzene-like odor. The largest use for toluene is for the production of benzene. Toluene has the following applications: 1) as an octane booster or enhancer for blending gasoline; 2) as a raw material for making toluene diisocyanate; 3) as a solvent; and 4) for solvent extraction processes. As a solvent, it may be used in aerosol spray paints, wall paints, lacquers, inks, adhesives, natural gums, and resins, as well as in a number of consumer products, such as spot removers, paint strippers, cosmetics, perfumes, and antifreezes.

1. As a VOC: Toluene has a high VOC material content of 863 g/L.
2. Flammability: Toluene is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: Toluene is rated “two” for health by the NFPA which means that it has a moderate health risk. Toluene vapors can be intoxicating but in large doses, they can cause extreme fatigue, mental confusion, nausea, headache and dizziness. Since toluene has low water solubility, it cannot exit the body through normal routes such as sweat, urine, or feces. Breathing large amounts of toluene for short periods of time adversely affects the human nervous system, the kidneys, the liver, and the heart. Effects range from unsteadiness and tingling in fingers and toes to unconsciousness and death. Direct, prolonged contact with toluene liquid or vapor irritates the skin and the eyes. Human health effects associated with breathing or otherwise consuming smaller amounts of toluene over long periods of time are not known. Repeatedly breathing large amounts of toluene, such as when "sniffing" glue or paint, can cause permanent brain damage. As a result, humans can develop problems with speech, hearing, and vision. Humans can also experience loss of muscle control, loss of memory, and decreased mental ability. Exposure to toluene can also adversely affect the kidneys. Laboratory animal studies and, in some cases, human exposure studies show that repeat exposure to large amounts of toluene during pregnancy can adversely affect the developing fetus. Other studies show that repeat exposure to large amounts of toluene adversely affects the nervous system, the kidneys, and the liver of animals. The Clean Air Act Amendments of 1990 list toluene as a hazardous air pollutant. Toluene is also listed in Table I of SCAQMD Rule 1401 – New Source Review of Toxic Air Contaminants.

## Turpentine

Turpentine, a bio-based solvent used as a thinning solvent for oil-based paints, is manufactured from distilling pine tree sap into a fluid.

1. As a VOC: Turpentine has a high VOC material content of 863 g/L.
2. Flammability: Turpentine is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: Turpentine is rated “one” for health by the NFPA which means that it is considered to have a slight health risk. The vapors from turpentine can burn the skin and eyes, as well as cause damage to both the respiratory and central nervous systems.

### Varnish Makers and Printers Naphtha

Varnish makers and printers (VM&P) naphtha, also known as petroleum ether, is a petroleum-based chemical that is commonly used as a cleaning solvent and is manufactured by distilling petroleum or coal tar.

1. As a VOC: VM&P naphtha has a high VOC material content that ranges from 750 g/L to 875 g/L.
2. Flammability: Naphtha is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: Naphtha is rated “two” for health by the NFPA which means that it has a moderate health risk. Short-term exposure to high levels of naphtha can cause headaches, dizziness, confusion, lack of muscle coordination, and sense of balance. Other symptoms can also include irritation of the skin, nose, eyes, throat, and stomach discomfort but at higher levels naphtha can cause unconsciousness which could result in death.

### Xylene

Xylene is a colorless, sweet-smelling liquid that is produced from petroleum. The term xylene, also known as xylol, refers to a mixture of three benzene derivatives (isomers) that can be differentiated by the following forms: meta-xylene (m-xylene), ortho-xylene (o-xylene), and para-xylene (p-xylene). Xylene can also occur naturally in petroleum and coal tar and is formed during forest fires. Chemical industries produce xylene from petroleum. It is one of the top 30 chemicals produced in the United States in terms of volume. Xylene is used as a solvent and in the printing, rubber, and leather industries. It is also used as a cleaning agent, paint thinner, and in paints and varnishes. It is found in small amounts in airplane fuel and gasoline.

1. As a VOC: Xylene has a high VOC material content that ranges from 860 g/L to 872 g/L.
2. Flammability: Xylene is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: Xylene is rated “two” for health by the NFPA which means that it has a moderate health risk. Short-term exposures to high levels of xylene can cause headaches, dizziness, confusion, and lack of muscle coordination and sense of balance. Other symptoms can also include irritation of the skin, nose, eyes, throat, and stomach discomfort, but at higher levels, xylene can cause unconsciousness. High levels of exposure for short periods (14 days or less) or long periods (more than one year) can cause headaches, lack of muscle coordination, dizziness, confusion, and changes in one's sense of balance. Exposure of persons to high levels of xylene for short periods can also cause irritation of the skin, eyes, nose, and throat; difficulty in breathing; problems with the lungs; delayed reaction time; memory difficulties; stomach discomfort; and possibly

changes in the liver and kidneys. It can cause unconsciousness and even death at very high levels.

Studies of unborn animals indicate that high concentrations of xylene may cause increased numbers of deaths, and delayed growth and development. In many instances, these same concentrations also cause damage to the mothers. It is unknown if xylene harms the unborn child if the mother is exposed to low levels of xylene during pregnancy. The International Agency for Research on Cancer (IARC) has determined that xylene is not classifiable as to its carcinogenicity in humans. Human and animal studies have not shown xylene to be carcinogenic, but these studies are not conclusive and do not provide enough information to conclude that xylene does not cause cancer. The Clean Air Act Amendments of 1990 list xylene as a hazardous air pollutant. Because xylene can cause adverse health affects other than cancer, it is listed in Table I of Rule 1401.

### Potential Replacement Solvents

#### Acetone

For information on the physical, chemical, and health characteristics of acetone, see the acetone discussion in the “Conventional Solvents” subsection above.

#### Methyl Acetate

Methyl acetate, also known as acetic acid methyl ester or methyl ethanoate, is a clear, flammable liquid with a characteristic smell like certain glues or nail polish removers. Methyl acetate is used as a solvent in glues and nail polish removers, in chemical reactions, and for extractions. Methyl acetate is a non-polar (lipophilic) to weakly polar (hydrophilic) aprotic solvent.

1. As a VOC: Exempt pursuant to EPA and listed as exempt in Rule 102, class I.
2. Flammability: Methyl acetate is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: Methyl acetate is rated “two” for health by the NFPA which means that it is a moderate health risk. Methyl acetate is not listed as a HAP in the 1990 Federal Clean Air Act Amendments, nor is it listed as a toxic chemical under Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986. [The Office of Environmental Health Hazard Assessment \(OEHHA\)](#) has determined that methyl acetate is an eye and mucous membrane irritant that can cause unconsciousness in animals at high doses. Methyl acetate is also a reproductive system toxicant at low doses because it can metabolize to methanol.

#### PCBTF (parachlorobenzotrifluoride)

PCBTF is a colorless liquid with a distinct aromatic odor. It is commonly used as an ink solvent in the printing industry and is sold under the brand name Oxsol 100. PCBTF had originally been used as an intermediate in the production of other compounds, but more recently has been marketed as a cleaning solvent. Because it is only manufactured in a limited number of countries overseas (e.g., China), it is considered to be expensive due to high shipping costs relative to other possible solvent replacements.

1. As a VOC: Exempt pursuant to EPA and listed as exempt in Rule 102, class I.
2. Flammability: PCBTF is rated “three” for flammability by the NFPA which means that it is considered to be highly flammable.
3. Toxicology: PCBTF is rated “one” for health by the NFPA which means that it is considered to have a slight health risk. PCBTF is slightly irritating to the eyes and skin. Uses of PCBTF include industrial solvent cleaning, aerosols, adhesives, coatings, and inks. Under these applications, the major routes of exposure are considered to be through the skin and by inhalation. The estimated rat oral LD50 is greater than 6.8 grams per kilogram; the acute dermal toxicity (LD50) value is greater than 2.7 grams per kilogram in rabbits. The acute inhalation toxicity LD50 is 4,479 ppm.

PCBTF is not absorbed into the body to any appreciable extent. Most of the material is either exhaled or excreted. At concentration levels greater than 250 ppm of PCBTF and for exposures greater than 90 days, slight liver damage was observed. Animal studies indicate that PCBTF is not a reproductive toxin. Potential chronic toxicity or carcinogenicity data on PCBTF was not available.

Neither the California Air Pollution Control Officers Association (CAPCOA) nor the USEPA has developed non-cancer health standards for acute or chronic exposures to PCBTF. The State of California has not listed PCBTF as a reproductive toxin under Proposition 65. Neither the International Agency for Research on Cancer nor the USEPA has classified PCBTF for carcinogenicity. PCBTF is not listed under California’s Proposition 65 as a carcinogen and has not been identified by CARB as a TAC under AB 1807. PCBTF is not listed under AB 2588 Air Toxics “Hot Spots” Program or as a HAP in the 1990 Federal Clean Air Act Amendments.

### **Comparison of Conventional Solvents and Potential Replacement Solvents**

The potential for significant adverse toxic impacts is dependent on a number of variables. These include the specific chemical composition of the solvents used to meet the requirements of PR 1143, the amounts that are used, and the chemical composition of the materials to be replaced (i.e., cleaning materials formulated with conventional solvents also may contain toxic or otherwise hazardous air pollutants). Previous CEQA analyses of the potential toxic impacts from the rules anticipated to use reformulated solvents have determined that the toxicity of conventional solvent replacements is generally offset by the toxicity of the solvents that they would replace.

In addition, staff further compared the toxicity of conventionally used solvents to those expected to be used in reformulated, replacement products. Using the exposure values set by a variety of government agencies, staff compared the Threshold Limit Values (TLVs) established by the American Conference of Governmental Industrial Hygiene (ACGIH), the Permissible Exposure Limits (PELs) set by the Occupational Safety and Health (OSHA), the Immediately Dangerous to Life and Health (IDLH) levels recommended by the National Institute for Occupational Safety and Health (NIOSH), and cancer and non-cancer health effects.

As summarized in Table 2-4, some of the replacement solvents have lower TLVs, PELs, and IDLHs than the conventional solvents. Based on these values, acetone would be considered the least toxic of all of the potential replacement solvents. Similarly, conventional solvents tend to have cancer and non-cancer health effects associated with them, unlike the replacement solvents.

Based on the comparisons of toxicity and regulatory exposure limits, any increased use of reformulated materials that may contain toxics will generally result in a concurrent decrease in the use of conventional solvents that contain toxic materials. PR 1143 is expected to result in a reduction in the use of conventional solvents region wide and at individual facilities or residences where these materials are used. Since acetone is expected to be the primary replacement solvent, exposure to air toxics will remain approximately equivalent compared to the use of conventional solvents. Therefore, toxic air contaminant impacts would not be expected to change significantly from existing conditions. With regard to cancer and noncancer health risks, none of the replacement solvents are on any cancer lists. Considering the toxicity of currently used conventional solvents, there is no substantive evidence that shows the use of those solvents identified as possible replacements would result in significant adverse toxic air contaminant impacts.

**Table 2-4**  
**Regulatory Exposure Limits of Conventional and Potential Replacement Solvents**

<b>Solvent Names</b>	<b>TLV (ppm)<sup>1</sup></b>	<b>PEL (ppm)<sup>2</sup></b>	<b>IDLH (ppm)<sup>3</sup></b>	<b>Air Toxic</b>
<b><i>Conventional Solvents</i></b>				
Denatured Alcohol (Ethanol)	1,000	1,000	3,300*	Ethanol – No <sup>4</sup>
Methyl Ethyl Ketone (MEK)	200	200	3,000	Non-cancer health effects
Toluene	50	200	500	Cancer risk in animals
Xylene	100	100	900*	Non-cancer health effects
Mineral Spirits (Stoddard)	100	500	3,400	Not classifiable for human
<b><i>Potential Replacement Solvents</i></b>				
Acetone	500	1000	2,500*	Not classifiable for human/animal
Methyl Acetate	200	200	3,100*	No
PCBTF <sup>5</sup>	Not Established	Not Established	Not Established	No

<sup>1</sup> ACGIH

<sup>2</sup> OSHA

<sup>3</sup> NIOSH

<sup>4</sup> Denaturing constituents may be carcinogenic

<sup>5</sup> The manufacturer recommends an exposure limit of 25 ppm. \* Based on 10 percent of the lower explosive limit (LEL).

## Reactivity

The SCAQMD has received both written and oral comments stating that PR 1143 should include both mass-based VOC limits and reactivity-based standards. PR 1143 would regulate thinners and solvents by establishing mass-based VOC content limits. The following paragraphs provide background information and the SCAQMD position on why a reactivity-based approach is not used.

Different types of solvents have different degrees of "reactivity," which is the ability to accelerate the formation of ground-level ozone. Coating manufacturers and coating contractors assert that the reformulated compliant low-VOC water- and solvent-borne coatings contain solvents that are more reactive than the solvents used in conventional coating formulations. Furthermore, water-borne coatings perform best only under warm, dry weather conditions, and are typically recommended for use between May and October. Since ozone formation is also dependent on the meteorological conditions, use of coatings containing VOCs during this period increases the formation of ozone.

The use of reactivity as a regulatory tool has been debated at the local, state, and national level for over 25 years. For example, CARB incorporated a reactivity-based control strategy into its California Clean Fuel/Low Emissions Vehicle regulations, where reactivity adjustment factors are employed to place regulations of exhaust emissions from vehicles using alternative fuels on an equal ozone impact basis. CARB has also approved reactivity-based regulations for aerosol coatings. CARB is evaluating a similar strategy for consumer products and industrial emissions, and contracted with Dr. William Carter, College of Engineering Center for Environmental Research and Technology (CE-CERT) at the University of California at Riverside (UCR) for several studies to assess the reactivities of VOC species found in the consumer products emissions inventory. The studies have been aimed at determining the specific VOC speciation for products, and developing more accurate data on compounds commonly found in either waterborne coatings, solvent-borne coatings, or both (e.g., glycol ethers, esters, isopropyl alcohol, methyl ethyl ketone (MEK), and an octanol).

In July 2001, the CARB conducted a survey of companies that sold architectural coating products in California in 2000. This report contains a detailed analysis of the photochemical reactivity associated with architectural coatings, based on results from that survey. This document is intended to provide different options for evaluating the reactivity of architectural coatings, but it is not a formal regulatory document. CARB's 2001 Architectural Coating Survey gathered detailed sales information and speciation of VOCs in product formulations, with ingredients reported to the 0.1 weight percent level. When coatings are applied, they release different types of organic compounds that can react in the atmosphere to produce different amounts of ozone. This ozone forming potential is called hydrocarbon reactivity and it is determined by the photochemical reactions in the atmosphere. If a coating contains a small amount of a highly reactive compound, it could have a relatively high reactivity rating even if it has a low level of volatile organic compounds (VOCs). Similarly, a coating that has a high VOC content may have a relatively low reactivity rating, if it contains compounds that aren't very reactive.

As an active member of the Reactivity Research Working Group (RRWG), a public-private partnership with a charter to conduct research on reactivity-based controls to determine whether it is feasible as an alternative compliance option, SCAQMD staff has coordinated their current

efforts with CARB and RRWG. The RRWG's efforts to date have found that different VOC species have varying reactive properties to form ozone under the same NO<sub>x</sub> environment. However, RRWG's efforts have also highlighted the need for additional work needed to reduce the uncertainty associated with the reactivity values determined using an environmental chamber, especially for the most commonly used solvents used in a variety of applications. The overall goal is to assess the feasibility of this optional strategy that could potentially allow manufacturers to use greater quantities of less reactive solvents and reduce the quantity of higher reactive solvents to achieve the same level of ozone reductions as those achieved through mass reduction. The environmental chambers previously used to develop the existing models had a number of limitations, particularly for evaluating effects on some VOC species. Because of this, in 1998, the U.S. EPA provided three million dollars in funding to CE-CERT at UCR for the design to construct and operate a state-of-the-art, next-generation environmental chamber facility capable of obtaining the data needed for assessing the use of reactivity data as an alternative ozone control strategy to the established mass reduction method (Carter et al, 1999; Carter, 2002a). This chamber was completed in 2005 and successfully employed to evaluate mechanisms for photochemical ozone formation under low-NO<sub>x</sub> conditions (Carter 2004), as well as being used for other projects.

CARB, along with the SCAQMD, contracted with CE-CERT to utilize the new chamber to improve reactivity assessments of some solvent species, with each group funding the evaluation of certain VOC species most commonly used in architectural coatings. Due to limited funding available to both agencies, CARB funded a subset of VOCs most commonly used in solvent-based coating formulations as well as Texanol<sup>9</sup> (an ester alcohol), whereas the SCAQMD funding was used exclusively for the most common VOC species used in waterborne formulations.

The CARB project involved conducting ozone reactivity experiments on seven different types of coatings VOCs, which were to be determined in consultation with the CARB staff and the CARB's Reactivity Research Advisory Committee (RRAC). As is the case with the RRWG, the RRAC consists of representatives of industry and regulatory groups, including the SCAQMD. The compounds chosen for study for that project included Texanol®, an important compound in water-based coatings, and six different types of petroleum distillates that are utilized in solvent-based and (to a lesser extent) water-based coatings. A report on the CARB study (Carter and Malkina, 2005) has yielded useful information concerning the atmospheric ozone impacts of these compounds and the ability of the current SAPRC-99 detailed chemical mechanism (Carter, 2000a) to accurately simulate these impacts (Carter and Malkina, 2005).

In addition to verifying the reactivity data for solvents found in waterborne coatings, the study funded by the SCAQMD also evaluated the issue of the ability of low volatility or highly hydrophilic solvents to react in the gas phase and promote ozone formation as another area of potential concern when assessing ozone impacts of VOCs. If these compounds tend to be absorbed to any significant extent on surfaces or PM before they have a chance to react in the gas phase, then their actual impact on ozone formation would be less than predicted using gas-phase mechanisms in current models. In 1999, the RRWG identified the need for this type of assessment, but has funded research focusing on modeling. The SCAQMD-funded study is the

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<sup>9</sup> Texanol is a registered trademark of Eastman Chemical Company. It is used throughout this report rather than the generic chemical name for simplicity.

first actual environmental chamber experiments for assessing availability of the VOC species and evaluating model predictions of availability. Furthermore, the SCAQMD-funded study included an objective to assess the PM formation potential of all the solvents studied for the CARB- and SCAQMD projects. The specific objectives and work carried out for this project are described below.

- Conduct environmental chamber experiments for reactivity assessment and chemical mechanism evaluation for several types of coatings or solvent VOCs selected by the SCAQMD in conjunction with discussions with the CE-CERT investigators and RRAC. The compounds chosen for study were propylene and ethylene glycols, diethylene glycol n-butyl ether (2-(2-Butoxyethoxy)-ethanol, or dipropylene glycol butyl ether, DGBE), and benzyl alcohol. The two glycols were considered not to have uncertain mechanisms, but were studied because of their extreme importance in the emissions inventories. DGBE was studied because it is also important in the water-based coatings inventory and has not been experimentally studied previously. Benzyl alcohol was studied because it is also emitted to some extent and had extremely high chemical mechanism uncertainty.
- Conduct measurements of PM formation in reactivity assessment and mechanism evaluation experiments, not only for this project, but also for the experiments carried out for the CARB coatings reactivity project. The data obtained can then be used to evaluate, at least in a qualitative sense, the PM formation potentials of the types of VOCs studied, and be available for potentially developing and evaluating models for their impacts on PM formation in the atmosphere.
- Carry out a limited number of experiments to characterize background effects related to PM formation that can be used when interpreting or modeling the PM formation in the chamber experiments discussed above, and that can serve as a basis for designing future PM studies in this chamber.
- Evaluate the potential utility of the environmental chamber for testing models for availability of emitted VOCs to react in the atmosphere to form O<sub>3</sub> and secondary PM. After discussion with members of the atmospheric availability subgroup of the RRWG it was decided to focus on conducting several experiments to assess the effects of humidity and seed aerosol on availability, decay rates and reactivities of ethylene and propylene glycol.

Results of reactivity studies are summarized in Table 2-5.

**Table 2-5**  
**Summary of Solvents Studied in the Environmental Chamber Experiments**  
**and the Conclusions from the Results**

Compound or Mixture	Estimated MIR <sup>(a)</sup>		PM Impact or Approximate SOA Yields <sup>(b)</sup>	Discussion of Mechanism Evaluation Results <sup>(c)</sup>
	Previous	Revised		
<b>Water Based Coatings VOCs</b>				
Ethylene Glycol	3.36	3.63	Lower PM than base case	The glycolaldehyde product now represented explicitly. This mechanism still underpredicts glycol reactivity by 25-30% in experiments with aromatics in the base ROG surrogate, but there is no chemical justification for glycol mechanism adjustments
Propylene Glycol	2.74	No change	Lower PM than base case	This mechanism underpredicts glycol reactivity by ~20% in experiments with aromatics in the base ROG surrogate, but there is no chemical justification for glycol mechanism adjustments
Texanol® (Isobutyrate monoesters of 2,2,4-tri-methyl-1,3-pentanediol) <sup>(d)</sup>	0.88	No change	No net effect on PM formed evident	Experimental results for Texanol® and DGBE generally consistent with chamber data.
2-(2-butoxyethoxy)-ethanol (DGBE)	2.86	No change	14 - 26%	The OH radical rate constants found to be in good agreement with the estimated values used in the mechanism.
Benzyl Alcohol	None	4.89	~30%	Mechanism developed for this project and adjusted to fit the chamber data. Mechanism performance comparable to that for other aromatic compounds.
<b>Hydrocarbon Solvents Studied for CARB Project<sup>(e)</sup></b>				
VMP Naphtha, Primarily C <sub>7</sub> -C <sub>9</sub> mixed alkanes	1.41	1.35	0.1 - 0.7%	The experimental results for the primarily alkane, petroleum distillate-derived hydrocarbon solvents were generally consistent with the chamber data.
Dearomatized Mixed Alkanes, Primarily C <sub>10</sub> -C <sub>12</sub> (ASTM-1C)	0.91	0.96	~0.2%	
Reduced Aromatics Mineral Spirits, Primarily C <sub>10</sub> -C <sub>12</sub> mixed alkanes with 6% aromatics (ASTM-1B)	1.21	1.26	0.6 - 0.7%	

**Table 2-5 (Concluded)**  
**Summary of Solvents Studied in the Environmental Chamber Experiments**  
**and the Conclusions from the Results**

Compound or Mixture	Estimated MIR <sup>(a)</sup>		PM Impact or Approximate SOA Yields <sup>(b)</sup>	Discussion of Mechanism Evaluation Results <sup>(c)</sup>
	Previous	Revised		
Regular mineral spirits, Primarily C <sub>10</sub> -C <sub>12</sub> mixed alkanes with 19% aromatics (ASTM-1A)	1.82	1.97	0.3 - 0.8%	The experimental results were generally consistent with the chamber data.
Synthetic isoparaffinic alkanes, primarily C <sub>10</sub> -C <sub>12</sub> branched alkanes (ASTM-3C1)	0.81	1.1 - 1.5 [f]	No net effect on PM formed evident	Data not well simulated by the model. Model probably underpredicts atmospheric ozone formation by 25-75%, depending on the cause of the discrepancy.
Aromatic 100 (Primarily C <sub>9</sub> -C <sub>10</sub> alkylbenzenes)	7.51	7.70	0.3 - 0.4%	Experimental results representing MIR conditions generally consistent with model predictions. But model underpredicted O <sub>3</sub> inhibition in low NO <sub>x</sub> conditions and has other problems.

[a] Maximum incremental reactivity in gm O<sub>3</sub> per gm VOC. Calculated as described by Carter (1994a,b). Values in "Previous" column are the MIR values incorporated in CARB regulations. The values for the compounds were from the most recent complete MIR tabulation given by Carter (2003). The values for the hydrocarbon solvents were derived using the CARB Bin assignments developed by Kwok et al (2000). No mechanism or MIR value previously existed for benzyl alcohol. Values in the "Revised" column are the best estimate MIRs based on the results of the current study. The changes in MIRs that may result when the mechanism is updated are unknown.

[b] For compounds with measurable positive PM impacts, the secondary organic aerosol (SOA) yields were derived from differences between PM volume levels in the base case and added test compound incremental reactivity experiments after 5 hours of irradiation. These approximate yields were estimated based on assuming same molecular weight for SOA as the starting material, assuming that the PM formed has the same density as water, and using approximate corrections for PM wall losses and approximate estimates of amounts of test compound or hydrocarbon solvent constituents reacted.

[c] Ozone prediction evaluation results are applicable to the SAPRC-99 mechanism (Carter, 2000a).

[d] Texanol was studied for the CARB project; see Carter and Malkina (2005) for details. Texanol is a registered trademark of Eastman Chemical Company.

[e] See Carter and Malkina (2005) for a discussion of the experimental and calculated data for the hydrocarbon solvent reactivities. The ASTM designations are based on the D 235-02 specification (ASTM, 2003).

[f] Range of MIRs for alternative mechanisms adjusted to fit the chamber data with this solvent. The available data are inadequate to distinguish between these mechanisms. See Carter and Malkina (2005).

The conclusion reached by the study indicates that there was no evidence that humidity and seed aerosol affects glycol availability at the relatively low aerosol loadings and humidities examined.

The following recommendations/concerns are summarized by the researcher pertaining to reactivity, availability, and PM assessment:

- Aromatics mechanisms need to be improved to further reduce uncertainties in reactivity assessments (e.g., glycols).
- Extrapolation of current mechanisms to higher aromatics, such as Aromatics 200 is still highly uncertain.
- Direct reactivity measurements are needed to reduce uncertainties for some VOCs, particularly mixtures of branched alkanes.
- A modified base case experiment that gives better correlations between chamber and atmospheric reactivity would be useful.
- No compelling need to change current bin assignments, except perhaps for those with light cycloalkanes and synthetic mixtures. But new procedure will be needed when the reactivity scale is updated.
- Well-characterized environmental chamber data are needed to develop predictive secondary PM models. Work is needed on background PM characterization in the reactivity chambers.

Using the Maximum Incremental Reactivity (MIR) scale as the basis for comparing reactivities of VOCs it is true that, on a per gram basis, some VOCs used in water-borne coatings are more reactive than some VOCs used in solvent-based coatings. For example, using the MIR scale as a basis, a typical VOC used in water-borne coatings, such as propylene glycol, is two to three times more reactive than typical mineral spirits. Less reactive solvents such as mineral spirits are not extensively used in some applications, such as automotive coatings. For example, automotive coatings tend to have solvents with higher reactivity such as xylenes and toluene. The reactivity of propylene glycol is approximately one-third the reactivity on a gram per gram basis of xylene and toluene. It is anticipated that manufacturers will incorporate the use of water and exempt solvents when formulating to meet the lower VOC limits (CARB, 2005).

Another factor to be considered in the reactivity based approach, and probably the most important, is an accurate speciation profile of waterborne and solvent-borne coatings. CARB, in its effort to get more detailed information about the speciation profiles, required speciation profiles of all coatings included in the 2005 CARB Survey (CARB, 2006) as was conducted in the 2001 survey. The analysis shows that existing VOC levels are already so low that the use of a reactivity-based approach at higher limits would not result in greater ozone reductions.

Furthermore, there are a number of uncertainties involved in using a reactivity-based approach. One source of uncertainty in the reactivity scales comes from the fact that ozone impacts of VOCs depend on the environment where the VOC is emitted. A second source of uncertainty is variability in the chemical composition of the VOC source being considered. Complex mixtures such as “mineral spirits” may be more difficult to characterize and may vary from manufacturer to manufacturer though in principal the composition of a given lot can be determined and reasonably assumed to be constant regardless of how the product is used. A third source of uncertainty comes from the complexity and uncertainties in the atmospheric processes by which emitted VOCs react to form ozone (Carter, 1995).

Although the science of VOC reactivity has matured, more comprehensive studies are still being conducted to resolve the uncertainties of reactivity data. The SCAQMD is participating in the industry-sponsored PACES process to address performance, availability, PM and reactivity issues. PACES released a Phase I Interim Report on August 29, 2008, but the report did not focus on reactivity. Reactivity will be examined during the Phase II process. CARB staff finalized another architectural coating survey to collect sales and ingredient data for calendar year 2004. This survey reflects the coatings being sold in California after all of the SCM VOC limits have taken effect. In spite of more recent information on reactivity, CARB did not include a reactivity-based approach, but proposed a consideration of reactivity for certain categories. However, other AQMDs and Air Pollution Control Districts have concern about cost impacts and enforceability of this approach.

Until the results of this research and studies are completed and peer reviewed, it would not be prudent to implement a reactivity-based ozone reduction strategy based on incomplete science. In the absence of actual reactivity numbers for the compounds contained in “traditional” solvent formulations and compliant, low-VOC coatings, emissions must be calculated in the standard manner of total VOC per unit of coating applied manner.

CARB has implemented a limited reactivity-based rule and the EPA has also issued guidance to have states evaluate reactivity-based approaches. CARB is finalizing their new survey, which will include revised speciation data and will continue to evaluate the feasibility of reactivity-based approach as part of its next SCM. However, based on the 2001 survey, mass-based VOC control approach was deemed effective for most categories and shows a lower SWA-MIR value for low-VOC coatings.

The Proposed Modifications to the Final 2007 AQMP considers, as a long-term strategy, reducing the VOC ozone forming potential of consumer products through reducing the overall reactivity of VOC containing materials. The 2007 AQMP, however, concludes that further study is required to evaluate the reactivity of different compounds under various meteorological conditions to develop a systematic approach for regulatory programs.

CARB and SCAQMD will continue to assess the CE-CERT report and will work with industry in resolving remaining concerns with the results. SCAQMD is receptive to assessing reactivity for certain categories but will need to evaluate potential toxicity and PM<sub>2.5</sub> formation. In addition, SCAQMD staff will continue to monitor all reactivity-related research at the RRWG, and plans to work closely with CARB staff on the survey and subsequent SCM. However, based on the latest research and analysis, as well as the recommendations of the researched to conduct additional analysis, staff supports the continuation of a mass-based ozone control strategy, with future consideration for a reactivity-based approach.

Concern has been raised that increased use of acetone could increase ozone formation since acetone evaporates more quickly than current solvents and thus more acetone would be used. First, while more acetone may be used due to its faster evaporation rate, according to the IRTA report titled “Assessment, Development, and Demonstration of Low-VOC Cleaning Systems for South Coast Air Quality Management District Rule 1171” (August 2003)<sup>10</sup>, several facilities

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<sup>10</sup> <http://www.irta.us/SCAQMD%20No.%2001172%20Final%20Executive%20Summary%20-%20Tech%20Assessment.pdf>

tested reported they used about 10 percent more acetone than their current cleaning solvent. Second, acetone is classified as an exempt compound by the SCAQMD (Group I) and USEPA. Exempt compounds are excluded from the definition of VOC because they do not contribute appreciably to ozone formation.

### **Global Warming and Greenhouse Gas Emissions**

Global warming is the observed increase in average temperature of the earth's surface and atmosphere. The primary cause of global warming is an increase of greenhouse gas (GHG) emissions in the atmosphere. The six major types of GHG emissions identified in the Kyoto Protocol are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride (SF<sub>6</sub>), haloalkanes (HFCs), and perfluorocarbons (PFCs). The GHG emissions absorb longwave radiant energy emitted by the earth, which warms the atmosphere. The GHGs also emit longwave radiation both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation emitted by the atmosphere is known as the "greenhouse effect."

The current scientific consensus is that the majority of the observed warming over the last 50 years can be attributable to increased concentration of GHG emissions in the atmosphere due to human activities. Events and activities, such as the industrial revolution and the increased consumption of fossil fuels (e.g., combustion of gasoline, diesel, coal, et cetera), have heavily contributed to the increase in atmospheric levels of GHG emissions. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHG emissions (CEC, 2004). Further, approximately 80 percent of GHG emissions in California are from fossil fuel combustion (e.g., gasoline, diesel, coal, et cetera).

PR 1143 is not expected to generate additional GHG emissions as explained in the following paragraphs. Of the elements in PR 1143 that were previously discussed in the "Construction Air Quality Impacts" section, there are no construction activities and thus no construction emissions associated with the proposed project. Therefore, there will be no change in GHG emissions associated with construction activities and combustion equipment.

Operation of the currently proposed project will also not be a source of GHG emissions because PR 1143 would establish a VOC material content of 25 g/L for consumer paint thinners and multi-purpose solvents and any reformulations that would occur to comply with this VOC limit would not require an increase in the quantity of combustion sources. For this reason, no change in GHG emissions is expected from implementing PR 1143.

### **Conclusion**

In general, potential toxic air contaminant emissions as a result of implementing the proposed project are not expected to be significant for the following reasons. As discussed previously, there is no substantial evidence that shows the use of the solvents identified as potential replacements would result in an increase in significant adverse toxic air contaminant impacts. The potential replacement solvents are for the most part common chemicals that are already being used in a wide variety of both industrial and consumer applications. Their widespread use is assumed to be indicative of the ability to use these compounds in a safe manner. Further, current formulations of consumer paint thinners and multi-purpose solvents contain materials that are as toxic as or more toxic than formulations expected to be used to comply with PR 1143.

Thus, the possible increased use of toxics in the reformulated products will generally be balanced by a concurrent decrease in the use of toxic materials in currently used conventional solvents, and toxic air contaminant impacts would not be expected to change significantly from existing conditions.

Based on the information provided in this analysis, implementation of PR 1143 would not result in significant adverse air quality impacts. In fact, the proposed project is expected to result in an overall reduction in VOC emissions in the district, so PR 1143 is not expected to contribute to a violation of any air quality standard or contribute to an existing or projected air quality violation. Further, facility operators that use solvents that would be subject to the requirements in PR 1143 or solvent manufacturers located within the district may be required to also comply with all other relevant SCAQMD rules and regulations, which may include any or all of the following: source specific rules (Regulation XI); prohibitory rules (Regulation IV); toxic rules (Regulation XIV); and New Source Review (Regulation XIII). As such, PR 1143 would not diminish an existing air quality rule or future compliance requirement, nor conflict with or obstruct implementation of the applicable air quality plan. Further, PR 1143 has no provision that would cause a violation of any air quality standard or directly contribute to an existing or projected air quality violation. Since air quality impacts from implementing PR 1143 do not exceed any air quality significance thresholds in Table 2-1, pursuant to CEQA Guidelines §15130(a)(3), air quality impacts are not considered to be cumulatively considerable. Therefore, PR 1143 is not expected to result in a cumulatively considerable net increase of any criteria pollutant.

**III.d)** Affected facilities are not expected to expose sensitive receptors to substantial pollutant concentrations from the implementation of PR 1143 for the following reasons: 1) there are no operational increases of VOC emissions associated with PR 1143; 2) implementing PR 1143 is expected to reduce VOC emissions in the district by approximately 9.75 ~~9.85~~ tons per day by 2014; 3) products are expected to be formulated with less toxic replacement solvents than what are currently used in consumer paint thinners and multi-purpose solvents; and 4) the use of future compliant materials must comply with all applicable SCAQMD Rules and Regulations. Therefore, significant adverse air quality impacts to sensitive receptors are not expected from implementing PR 1143.

**III.e)** Odor problems depend considerably on the individual circumstances. For example, individuals can differ quite markedly from the population average in their sensitivity to odor due to any variety of innate, chronic or acute physiological conditions. This includes olfactory adaptation or smell fatigue (i.e., continuing exposure to an odor usually results in a gradual diminution or even disappearance of the smell sensation).

Lower VOC-containing materials would generally be used at sites that already use odorous compounds. While some solvents (e.g., PCBTF) have a distinct aromatic odor, it is anticipated that lower VOC-containing materials would not have appreciably different odor impacts than currently used materials. In fact, some of the potential replacement solvents have fruity or mint-like scents e.g., acetone. Furthermore, local governments typically have ordinances that are intended to protect the public from adverse odors. SCAQMD Rule 402 – Nuisance, also protects the public from adverse odor impacts. For these reasons, PR 1143 is not anticipated to result in significant adverse odor impacts.

Based upon all of the aforementioned considerations, the SCAQMD has demonstrated that implementing the proposed project will not create significant adverse air quality impacts, either individually or cumulatively, and this topic will not be further analyzed in the ~~Draft~~-Final EA.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES.</b> Would the project:			
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

**Discussion**

**IV.a), b), c), & d)** The proposed project does not require the acquisition of land to comply with the provisions of PR 1143. Further, PR 1143 is not expected to require construction activities to install control equipment because the primary means of compliance is through product reformulation. For the same reason, PR 1143 would not require the construction of any new buildings or other structures. As a result, implementing PR 1143 is not expected to adversely affect in any way habitats that support riparian habitat, are federally protected wetlands, or are migratory corridors. Similarly, since implementing PR 1143 will not require construction of any structures, special status plants, animals, or natural communities are not expected to be adversely affected.

**IV.e) & f)** It is not envisioned that PR 1143 will conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because the proposed project does not require construction of any structures or new development in undeveloped areas. Additionally, PR 1143 will not conflict with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason.

The SCAQMD, as the Lead Agency for the proposed project, has found that, when considering the record as a whole, there is no evidence that PR 1143 will have potential for any new adverse effects on wildlife resources or the habitat upon which wildlife depends. Accordingly, based upon the preceding information, the SCAQMD has, on the basis of substantial evidence, rebutted the presumption of adverse effect contained in §753.5 (d), Title 14 of the California Code of Regulations.

Based upon these considerations, significant adverse biological resources impacts are not anticipated and will not be further analyzed in this [Draft-Final](#) EA. Since no significant adverse biological resources impacts were identified, no mitigation measures are necessary or required.

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	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>V. CULTURAL RESOURCES.</b> Would the project:			
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

**Discussion**

**V.a), b), c), & d)** Since no construction-related activities would be associated with the implementation of PR 1143, no impacts to historical or cultural resources are anticipated to occur as a result of implementing the proposed project. Further, PR 1143 is not expected to require physical changes to the environment, which may disturb paleontological or archaeological resources.

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PR 1143 and will not be further assessed in this ~~Draft-Final~~ EA. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>VI. ENERGY.</b> Would the project:			
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the need for new or substantially altered power or natural gas utility systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with existing energy standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Significance Criteria

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

### Discussion

**VI.a) & e)** The primary effect of implementing PR 1143 is that, consumer paint thinners and multi-purpose solvents would be reformulated with potential replacement solvents to meet the proposed VOC material content limit of 25 g/L. Most users of consumer paint thinners and multi-purpose solvents will be able to utilize water-based, bio-based or exempt solvents such as acetone. The use of reformulated solvents is expected to create little or no additional demand for energy at affected facilities because activities and practice that involve the use consumer paint thinners and multi-purpose solvents are not expected to change as a result of using reformulated products and, as such, would require little or no additional energy to use. As a result, PR 1143 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Since PR 1143 would not require the installation of control equipment or the construction of any structures, the proposed project will not conflict with adopted energy conservation plans. Additionally, facility operators who use consumer paint thinners and multi-purpose solvents are expected to comply with any relevant existing energy conservation plans and standards to minimize operating costs. Accordingly these impact issues will not be further analyzed in the [Draft-Final EA](#).

**VI.b), c), & d)** In light of the aforementioned discussion and since PR 1143 would only affect future formulations of consumer paint thinners and multi-purpose solvents, PR 1143 would not create any significant adverse effects on peak and base period demands for electricity, natural gas, or other forms of energy, or adversely affect energy producers or energy distribution infrastructure.

Based on the preceding discussion, PR 1143 would not create any significant effects on peak and base period demands for electricity and other forms of energy and it is expected to comply with existing energy standards. Therefore, PR 1143 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this ~~Draft~~ Final EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>VII. GEOLOGY AND SOILS.</b> Would the project:			
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Significance Criteria

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

### Discussion

**VII.a)** There are no provisions in PR 1143 that would require the construction of new or modified structures or the construction of air pollution control equipment that would call for the disruption or overcovering of soil, changes in topography or surface relief features, the erosion of beach sand, or a change in existing siltation rates. It is expected that consumers who use currently available paint thinners and multi-purpose solvents, would use compliant reformulated products for the same purposes. For these reasons, PR 1143 will not expose persons or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. Thus, this topic will not be analyzed further in the [Draft-Final EA](#).

**VII.b)** PR 1143 will affect future formulations of consumer paint thinners and multi-purpose solvents. For this reason, PR 1143 is not expected to require the installation of control equipment or the construction of any structures. Since PR 1143 would not involve construction activities, no soil disruption from excavation, grading, or filling activities; changes in topography or surface relief features; erosion of beach sand; or changes in existing siltation rates are anticipated from the implementation of the proposed project.

**VII.c)** PR 1143 will affect future formulations of consumer paint thinners and multi-purpose solvents. However, PR 1143 is not expected to require the installation of control equipment or the construction of any structures. Since no construction activities would be required, no excavation, grading, or filling activities will be required to comply with the proposed project. For these reasons, subsidence is not anticipated to be a problem. Further, the proposed project would not require the drilling or removal of underground products (e.g., water, crude oil, et cetera) that could produce subsidence effects. Since no groundwork or earth moving activities would be required as part of implementing PR 1143, no new landslides effects or changes to unique geologic features would occur.

**VII.d) & e)** Because PR 1143 will affect future formulations of consumer paint thinners and multi-purpose solvents, it will not require the installation of control equipment or the construction of any structures that would involve earth-moving activities. Therefore, no persons or property will be exposed to new impacts from expansive soils or soils incapable of supporting water disposal. Further, PR 1143 does not involve installation of septic tanks or other alternative

waste water disposal systems. The main effect of the proposed project will be a change in the formulations of materials already in use.

Based upon these considerations, significant geology and soils impacts are not expected from the implementation of PR 1143 and will not be further analyzed in this ~~Draft-Final~~ EA. Since no significant geology and soils impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>VIII. HAZARDS AND HAZARDOUS MATERIALS.</b> Would the project:			
a) Create a significant hazard to the public or the environment through the routine transport, use, disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Significantly increased fire hazard in areas with flammable materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Significance Criteria

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.
- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

### Discussion

**VIII.a), b), c), & i)** PR 1143 has no provisions that would dictate the use of any specific material. Persons who currently use consumer paint thinner and multi-purpose solvents would continue to have the flexibility of choosing the product formulation best suited for their needs. It is likely that persons who utilize these materials choose a paint thinner or multi-purpose solvent that does not pose a substantial safety hazard. To analyze a “worst-case” scenario, however, it is assumed that currently used conventional solvents would be reformulated with acetone because, as shown in Table 2-6, no other potential replacement solvent reformulations were identified that have a lower flash point, which is the primary basis for the flammability classification.

As a result of being delisted as a VOC by the USEPA, CARB, and many air districts including the SCAQMD, acetone usage has been steadily increasing irrespective of the currently proposed rule, including the use as a multi-purpose solvent sold not as a conventional solvent discussed in this document. In addition, conventional thinners and solvents are already being formulated with acetone although the specific usage quantity is unknown at this time. In any event, it is likely that for some solvent categories, acetone usage could increase as a result of the proposed project.

Acetone is currently used in a wide variety of applications. Chemistry classes at all levels from grade school to universities, as well as industrial laboratories, use acetone for wiping down counter tops and cleaning glassware. Additional uses for acetone include architectural and wood coating reformulations, varnish, lacquers, inks, adhesives, floor coatings, solvents for paint, and cosmetic products including nail polish and nail polish remover.

Labels and MSDSs accompanying acetone-based products caution the consumer user regarding acetone's flammability and advises the user to "keep the container away from heat, sparks, flame and all other sources of ignition. The vapors may cause flash fire or ignite explosively. Use only with ventilation." All of the large coating manufacturers currently offer pure acetone for sale in quart or gallon containers with similar warnings at chain home improvement retail stores. The Uniform Fire Code (UFC) treats solvents such as acetone, butyl acetate, and MEK as Class I Flammable Liquids. Further, the UFC considers all of these solvents to present the same relative degree of fire hazard.

An increase in acetone usage may increase the number of trucks or rail cars that transport acetone within the state, with a commensurate reduction in the transport of conventional solvents. However, the safety characteristics of individual trucks or rail cars that transport acetone will not be affected by PR 1143. The consequences (exposure effects) of an accidental release of acetone are directly proportional to the size of the individual transport trucks or rail cars and the release rate. Although the probability of an accidental release of acetone could increase, the severity of an incident involving acetone transport will not change as a result of the proposed project. This also holds true for the transport of the other potential replacement solvents identified in Table 2-6.

Any increase in accidental releases of compliant acetone-based paint thinners and multi-purpose solvents during transport would be expected to result in a concurrent reduction in the number of accidental releases of existing conventional solvents. Since conventional solvents have equivalent or worse hazardous characteristics, then the overall probability and consequence of accidental release during transport of thinners and multi-purpose solvents will remain relatively unchanged as a result of implementing PR 1143.

Similarly, the storage or use of acetone would not be expected to result in greater adverse hazard impacts than is currently the case for conventional solvents. As shown in Table 2-6, the flammability classifications by the NFPA are the same for acetone, denatured alcohol (ethanol), isopropyl alcohol, methyl acetate, MEK, toluene, and xylene. Recognizing that acetone has the lowest flash point, it still has a higher lower explosive limit (LEL) than all the conventional solvents except denatured alcohol. This means that acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 ppm. In contrast, toluene vapors can cause an explosion at 13,000 ppm, which poses a much greater risk of explosion. The concentration of mineral spirits or xylene vapors, other conventional solvents, which could cause an explosion, is even lower at 10,000 ppm. Under operating guidelines of working with flammable material under well-ventilated areas, as prescribed by the fire department codes, it would be difficult to achieve concentrated streams of such vapors for unconventional solvents and would be extremely more difficult for acetone. Further, it is anticipated that a large percentage of future reformulated products will be formulated using water-based formulations, which generally are not flammable or have a lower NFPA classification compared to conventional solvents.

**Table 2-6**  
**Chemical Characteristics of Conventional and Potential Replacement Solvents**

Conventional Solvents								
Chemical Compound	M.W. <sup>a</sup>	Boiling Point (@760 mmHg, °F)	Evaporation Rate (@25 °C)	Flash Point (°F)	LEL/UEL <sup>b</sup> (% by Vol.)	Auto-ignition Temperature (°C)	Vapor Pressure (mmHg @ 20 °C)	Flammability Classification <sup>c</sup> (NFPA) <sup>d</sup>
Denatured Alcohol (Ethanol)	46	78	2.3	56	3.3/19	435	44	3
Isopropyl Alcohol	60	180	2.3	53	2/12.7	399	33	3
Lacquer Thinner <sup>f</sup>	--	212.6	2.7	7.4	2/18.4	238	97.7	3
MEK	72	80	4.0	25	1.8/11.5	474	8.7	3
Mineral Spirits (Stoddard)	144	154-188	0.1	109-113	1.0 / 7	232	1.1	2
Paint Thinner <sup>g</sup>	--	299.6	1.4	<del>93.6</del> 81-117	1.0 / 7.3	229	2	3
Toluene	92	111	2.0	41	1.3 / 7	538	22	3
Turpentine	136	323.7	0.7	94.3	0.8/ n/a	253	5	3
VM&P Naphtha	87	266.9	1.2	53.1	1.2/6	288	20	3
Xylene	106	139	0.8	81	1.0/6.6	499	6	3
Potential Replacement Solvents								
Chemical Compound	M.W. <sup>a</sup>	Boiling Point (@760 mmHg, °F)	Evaporation Rate (@25 °C)	Flash Point (°F)	LEL/UEL <sup>b</sup> (% by Vol.)	Auto-ignition Temperature (°C)	Vapor Pressure (mmHg @ 20 °C)	Flammability Classification <sup>c</sup> (NFPA) <sup>d</sup>
Acetone	58	56	6.1	-4	2.6/12.8	538	180	3
Methyl Acetate	74	56	5.3	15	3/16	501	171	3
PCBTf <sup>h</sup>	181	282	0.9	109	0.9/10.5	97	5.3	1

Source: ~~OxyChem Specialty Business Group~~

<sup>a</sup> Molecular Weight

<sup>b</sup> Lower Explosive Limit / Upper Explosive Limit

<sup>c</sup> Flammability Rating: 0 = Not Combustible; 1 = Combustible if heated; 2 = Caution: Combustible liquid flash point of 100° to 200°F; 3 = Warning: Flammable liquid flash point below 100°F; 4 = Danger: Flammable gas or extremely flammable liquid

<sup>d</sup> NFPA = National Fire Protection Association

<sup>e</sup> NIOSH Pocket Guide to Chemical Hazards

<sup>f</sup> Lacquer thinner is manufactured from petroleum distillates and blended with other solvents, such as xylene, toluene, isopropyl alcohol, acetone, methanol, and light aliphatic solvent naphtha. Exact blending ratios vary widely.

<sup>g</sup> While paint thinner is predominantly referred to as “mineral spirits” or “stoddard solvent” (listed elsewhere in this table, pPaint thinner is broadly described as being manufactured from a-petroleum distillates and can be a blend of multiple solvents, including but not limited to, primarily composed of mineral spirits, naphtha, nonanes (mixture), 1,2,4-trimethyl benzene, ethyl benzene, diacetone alcohol, n-butyl acetate, methyl isobutyl ketone, cumene and xylene.

<sup>h</sup> Source: ~~OxyChem Specialty Business Group~~

With respect to suppliers and sellers of affected thinners and multi-purpose solvents, the UFC and Uniform Building Code set standards intended to minimize risks from flammable or otherwise hazardous materials. Local jurisdictions are required to adopt the uniform codes or comparable regulations. For some applications, local fire agencies require permits for the use or storage of hazardous materials and permit modifications for proposed increases in their use. Permit conditions depend on the type and quantity of the hazardous materials onsite. Permit conditions may include, but are not limited to, specifications for sprinkler systems, electrical systems, ventilation, and containment. The fire departments make annual business inspections to ensure compliance with permit conditions and other appropriate regulations.

Local fire departments limit residential storage of flammable liquids to five gallons and recommends storage in a cool place. If the flammable coating container will be exposed to direct sunlight or heat, storage in cool water is recommended. Finally, all metal containers involving the transfer of five gallons or more should be grounded and bonded.

In addition to fire impacts, health hazards can also be generated due to exposure to chemicals present in reformulated coatings. The health hazard impacts of the replacement solvents are comparable to, or less than conventional solvents, so additional health impacts due to exposure are not expected due to reformulated coatings/solvents.

With respect to suppliers and sellers of affected thinners and multi-purpose solvents, all hazardous materials are expected to be used in compliance with established OSHA or Cal/OSHA regulations and procedures, including providing adequate ventilation, using recommended personal protective equipment and clothing, posting appropriate signs and warnings, and providing adequate worker health and safety training. When taken together, the above regulations provide comprehensive measures to reduce hazards of explosive or otherwise hazardous materials at distributors' locations and retail stores. Compliance with these and other federal, state and local regulations should ensure the potential for explosions or accidental releases of hazardous materials is not significant.

| In past analyses of hazards due to the potential increased use to acetone in coatings for amendments to Rule 1113 – Architectural Coatings, local and county fire authorities were contacted to seek their input. Feedback received from these authorities indicated that, based on their extensive experience as a result of years of regulating the use and storage of flammable materials, the use of acetone will pose no greater risks than the use of existing solvents such as MEK, toluene, butyl acetate, etc.

It is anticipated that the current regulatory requirements regarding flammable and otherwise hazardous materials will not need to be amended as a result of the proposed project since, in part, acetone is already widely distributed, sold and used. Based on the preceding information, it is also expected that implementing PR 1143 is not expected to increase or create any new hazardous emissions which would adversely affect existing or proposed schools. In fact, to the extent that schools and other consumers replace affected products formulated with conventional solvents with affected products formulated with acetone or water-based solvents, any existing hazardous emissions near schools would remain unchanged or would be reduced with regard to hazardous characteristics.

Two potential issues regarding hazards associated with acetone were recently raised at the November 5, 2008, public workshop on PR 1143. Responses to these issues are provided in the following paragraphs.

Concern was raised that increased use of acetone could increase ozone formation since acetone evaporates more quickly than current solvents and thus more acetone would be used. First, while more acetone may be used due to its faster evaporation rate, according to the IRTA report titled “Assessment, Development, and Demonstration of Low-VOC Cleaning Systems for South Coast Air Quality Management District Rule 1171” (August 2003)<sup>11</sup>, several facilities tested reported they used about 10 percent more acetone than their current cleaning solvent. Second, acetone is classified as an exempt compound by the SCAQMD (Group I) and USEPA. Exempt compounds are excluded from the definition of VOC because they do not contribute appreciably to ozone formation.

A commentator also noted that consumers could partake in unconventional activities involving acetone, such as mixing acetone with hydrogen peroxide. Acetone peroxide can also be created accidentally by mixing it with other solvents such as MEK. Once created, acetone peroxide is highly explosive and believed to have been used in the past for illegal purposes such as bomb devices. However, others argue that, while easy to make, acetone peroxide is too unstable to be considered an effective primary explosive. Regardless, both acetone and peroxide are currently widely available to consumers and their availability would not change with or without the proposed project. Therefore, implementing the proposed project does not result in a new potential hazard to the public or the environment or increase potential hazards from illegal activities because it is currently widely available to consumers at chain home improvement retail stores.

**VIII.d)** Government Code §65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. Although some sites that have PR 1143-compliant materials in use may be on such a list; however, most affected sites are not expected to be on this list, and would not typically generate large quantities of hazardous waste. For any facilities affected by PR 1143 that are on the Government Code §65962.5 list, it is anticipated that they would continue to manage any and all hazardous materials and hazardous waste, in accordance with federal, state and local regulations. Complying with the requirements of PR 1143 is not expected to interfere with existing hazardous waste management programs. Accordingly, this impact issue is not further evaluated in this [Draft-Final EA](#)

**VIII.e), & f)** In general, the purpose of PR 1143 is to achieve VOC emission reductions through reformulation of consumer paint thinners and multi-purpose solvents, which will ultimately improve air quality and reduce adverse human health impact related to poor air quality. Since the use of PR 1143-compliant materials would be occurring at existing residential, industrial, or commercial facilities, implementation of PR 1143 is not expected to increase or create any new hazardous emissions which could adversely affect public/private airports located in close proximity to the affected sites. Accordingly, these impact issues are not further evaluated in this [Draft-Final EA](#).

<sup>11</sup> <http://www.irta.us/SCAQMD%20No.%2001172%20Final%20Executive%20Summary%20-%20Tech%20Assessment.pdf>

**VIII.g)** PR 1143 has no provisions that dictate the use of any specific solvent for reformulation. For some applications, persons who utilize consumer paint thinners and multi-purpose solvents may have the flexibility of choosing the compliant solvent best suited for their operational needs. If available, it is likely that consumers would choose a compliant formulation that does not pose a substantial safety hazard. As shown in the discussion under item VIII.a), b) & c) above, it is expected that replacement solvents will generally be less toxic than currently used solvents.

With respect to suppliers and sellers of affected thinners and multi-purpose solvents, Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

1. Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
2. Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
3. Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
4. Procedures to notify the necessary persons who can respond to an emergency within the facility;
5. Details of evacuation plans and procedures;
6. Descriptions of the emergency equipment available in the facility;
7. Identification of local emergency medical assistance; and
8. Training (initial and refresher) programs for employees in:
  - a. The safe handling of hazardous materials used by the business;
  - b. Methods of working with the local public emergency response agencies;
  - c. The use of emergency response resources under control of the handler; and
  - d. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area. Based on the preceding information, it is not anticipated that PR 1143 would impair implementation of or physically interfere with an adopted or modified emergency response plan or emergency evacuation plan.

**VIII.h)** Since consumer paint thinners and multi-purpose solvents are already in use at existing residential, industrial, or commercial sites in urban areas where wildlands are typically not

prevalent, risk of loss or injury associated with wildland fires is not expected as a result of implementing PR 1143.

Based upon these considerations, significant hazards and hazardous materials impacts are not expected from the implementation of PR 1143 and will not be further analyzed in this ~~Draft~~-Final EA. Since no significant hazards and hazardous materials impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>IX. HYDROLOGY AND WATER QUALITY.</b>			
Would the project:			
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
k) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
l) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
m) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
n) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o) Require in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Potential impacts on water resources will be considered significant if any of the following criteria apply:

**Water Quality:**

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.

- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

#### **Water Demand:**

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.
- The project increases demand for water by more than five million gallons per day.

#### **Discussion**

**IX.a), f), k), l), & o)** In general, the purpose of PR 1143 is to achieve VOC emission reductions through reformulation of consumer paint thinners and multi-purpose solvents. However, PR 1143 has no provisions that dictate the use of any specific solvent for reformulation. Persons who utilize consumer paint thinners and multi-purpose solvents may have the flexibility of choosing the compliant solvent best suited for their operational needs. For example, there are many aqueous (water-based) cleaning solvents available and being used; several have been certified by the SCAQMD's CAS certification program. Further, many manufacturers have developed bio-based products that already meet the 25 g/L VOC material content limit in PR 1143. As a result of rules and regulations on coatings and adhesives, many of these products, especially architectural coatings, do not require thinning, and are typically supplied as "ready to use." For some spray applications under certain climatic conditions, there are some waterborne coatings that can be thinned with water.

The reformulations that may occur to comply with PR 1143 will not affect those persons who currently use water- or acetone-based consumer paint thinners and multi-purpose solvents since water-based formulations of these materials are currently available. Further, in situations or operations where these water-based products are used, increased demand for water and increased generation of wastewater are not anticipated because these materials are already formulated with water in the manufacturing process.

Consumers who utilize consumer paint thinners and multi-purpose solvents that are formulated with conventional solvents may need to switch to other products formulated with a Group I exempt compounds such as acetone, acetone blends, aqueous and bio-based blends, methyl acetate or PCBTF because these solvents appear to be the most likely replacements for reformulations of consumer paint thinners and multi-purpose solvents. As previously mentioned in the "Hazards and Hazardous Materials" section, conventional consumer paint thinners and multi-purpose solvents will be reformulated with equivalent or less toxic materials than the currently available solvents.

In connection with potential water quality impacts associated with past SCAQMD rules or rule amendments that result in solvent-based products being reformulated with water- or exempt solvent based products, the LACSD performed a study in response to the 1996 amendments to SCAQMD Rules 1171 - Solvent Cleaning Operations, and the 1997 amendments to SCAQMD Rule 1122 - Solvent Degreasers. The CEQA analysis for these previous rule amendments concluded that they would result in a widespread conversion to the use of reformulated aqueous

materials for cleaning operations. Four categories of pollutants – metals, conventional pollutants, toxic volatile organics, and surfactants – were monitored in four sampling episodes from August 1998 to June 1999 and compared with baseline concentrations dating back to at least 1995 (LACSD, 1999).

Six metals – cadmium, chromium, copper, lead, nickel, and zinc – were also studied. These six metals' average concentrations in the wastewater stream showed no appreciable change from the baseline concentrations. Three conventional pollutants – TDS, chemical oxygen demand (COD), and TSS – were studied. Conventional pollutant concentrations also showed no appreciable change from the baseline concentrations. A number of toxic VOCs were studied including perchloroethylene and toluene. Perchloroethylene and toluene were monitored because they are commonly found in automotive repair cleaners and could contaminate the aqueous-based cleaners that are discharged to the sewer. The study found that perchloroethylene concentrations are increasing. The increase in the influent to the treatment plant is believed to be from consumer products used by home auto maintenance as well as a potential contribution from aqueous-based cleaners used by automotive repair facilities. Surfactants are used in personal care and cleaning products and are measured in wastewater as methylene blue active substances (MBAS). MBAS concentrations are increasing from the baseline concentrations (LACSD, 1999).

Although concentrations increased for perchloroethylene and MBAS, it is not believed that aqueous-based cleaners are the major source since the SCAQMD has continuing public outreach programs that educate the public to minimize contamination of aqueous based cleaners. Subsequent to the conversion to, and use of aqueous-based cleaners, the LACSD has not experienced water quality issues related to aqueous-based cleaners and has not seen increasing trends in any measured pollutants due to the use of aqueous-based cleaners (SCAQMD, 2003).

As a result, substantial changes in wastewater volume and composition are not expected from complying with the requirements in PR 1143. Further, PR 1143 is not expected to cause facility operators that utilize these products to violate any water quality standard or wastewater discharge requirements since wastewater volumes associated with PR 1143 will remain unchanged. PR 1143 is not expected to have significant adverse water demand and water quality impacts for the following reasons:

- The proposed project does not increase demand for water by more than 5,000,000 gallons per day.
- The proposed project does not require construction of new water conveyance infrastructure.
- The proposed project does not create a substantial increase in mass inflow of effluents to public wastewater treatment facilities.
- The proposed project does not result in a substantial degradation of surface water or groundwater quality.
- The proposed project does not result in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The proposed project does not result in alterations to the course or flow of floodwaters.

**IX.b) & n)** Additional demand for water to manufacture consumer paint thinners and multi-purpose solvents is anticipated to increase to a certain degree, but based on current total daily

usage of affected products, 3,323 gallons per day (Table 2-2), even if all currently used products are reformulated using water-based formulations, increased water demand would not exceed the SCAQMD's water demand significant threshold of five million gallons per day. Therefore, PR 1143 is not expected to adversely affect existing water demand, affect groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. In addition, implementation of PR 1143 will not increase demand for water from existing entitlements and resources, and will not require new or expanded entitlements. Therefore, no water demand impacts are expected as the result of implementing PR 1143.

**IX.c), d), & e)** Since the proposed project does not involve construction activities, no new increases to storm water runoff, drainage patterns, groundwater characteristics, or flow are expected. Therefore, these impact areas are not expected to be affected by PR 1143.

**IX.g), h), i), & j)** PR 1143 is not expected to generate the construction of new housing or contribute to the construction of new building structures because no facility modifications or changes are expected to occur at existing facilities or sites where consumer paint thinners and multi-purpose solvents are distributed, sold or used. Further, PR 1143 is not expected to require additional workers at affected facilities or sites where these products are used because PR 1143 primarily affects consumers. To the extent that affected products are used at industrial or commercial facilities, no additional workers would be required because PR 1143 would only change the formulation of thinners or multi-purpose solvents, not existing operations. Therefore, PR 1143 is not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. Further, PR 1143 is not expected to expose persons or structures to significant new flooding risks, or make worse any existing flooding risks than currently exists because no new structure would be necessary to implement PR 1143. Finally, PR 1143 will not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities or other sites where consumer paint thinners and multi-purpose solvents are used.

**IX.m)** PR 1143 will not cause an increase in storm water discharge, since no construction activities are required or expected in order to comply with the 25 g/L VOC material content requirements for consumer paint thinners and multi-purpose solvents. Further, no new areas at existing affected facilities are expected to be paved, so the proposed project will not increase storm water runoff during operation. Therefore, no new storm water discharge treatment facilities or modifications to existing facilities will be required as a result of implementing PR 1143. Accordingly, PR 1143 is not expected to generate significant adverse impacts relative to construction of new storm water drainage facilities.

Based upon these considerations, significant hydrology and water quality impacts are not expected from the implementation of PR 1143 and will not be further analyzed in this [Draft-Final EA](#). Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

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	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>X. LAND USE AND PLANNING.</b> Would the project:			
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

**Discussion**

**X.a)** Since PR 1143 would affect reformulations of consumer paint thinners and multi-purpose solvents and would not involve the construction of any air pollution control equipment or structures, it will not result in physically dividing an established community.

**X.b)** There are no provisions in PR 1143 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements will be altered by regulating VOC emissions from consumer paint thinners and multi-purpose solvents.

**X.c)** Since PR 1143 would affect reformulations of consumer paint thinners and multi-purpose solvents and would not involve construction of any air pollution control equipment or structures, it would not affect in any way habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Therefore, present or planned land uses in the region will not be significantly adversely affected as a result of implementing PR 1143.

Based upon these considerations, significant land use and planning impacts are not expected from the implementation of PR 1143 and will not be further analyzed in this Draft-Final EA. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XI. MINERAL RESOURCES.</b> Would the project:			
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

**Discussion**

**XI.a) & b)** There are no provisions in PR 1143 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Some examples of mineral resources are gravel, asphalt, bauxite, and gypsum, which are commonly used for construction activities or industrial processes. Since the proposed project would affect reformulations of currently available consumer paint thinners and multi-purpose solvents by requiring these products to meet at 25 g/L VOC material content, PR 1143 would have no effects on the use of important minerals, such as those described above. Therefore, no new demand on mineral resources is expected to occur and significant adverse mineral resources impacts from implementing PR 1143 are not anticipated.

Based upon these aforementioned considerations, significant mineral resources impacts are not expected from the implementation of PR 1143 and will not be further analyzed in this Draft-Final EA. Since no significant mineral resources impacts were identified, no mitigation measures are necessary or required

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XII. NOISE.</b> Would the project result in:			
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airship, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on noise will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

**Discussion**

**XII.a) & c)** Modifications or changes associated with reformulating consumer paint thinners and multi-purpose solvents as part of implementing PR 1143 will occur at the manufacturer level. However, changes in reformulation are not expected to cause physical modifications that

would require construction activities at the point of manufacture, distribution or use. For these reasons, PR 1143 is not expected to expose persons to the generation of excessive noise levels above current facility levels because it primarily involves using different formulations for consumer paint thinners and multi-purpose solvents. Further, the use of these materials at the consumer level is typically not a noise intensive activity. Therefore, the existing noise levels are unlikely to change and raise ambient noise levels in the vicinities of the existing facilities or other sites where these products are distributed, sold or used to above a level of significance in response to implementing PR 1143. Further, Occupational Safety and Health Administration (OSHA) and California-OSHA have established noise standards to protect worker health at distribution and retail locations.

**XII.b)** PR 1143 is not anticipated to expose persons to or generate excessive groundborne vibration or groundborne noise levels since no construction activities are expected to occur and switching to reformulated products does not involve, in any way, the installation of control equipment that would generate vibrations and noise.

**XII.d)** No increase in periodic or temporary ambient noise levels in the vicinity of affected facilities above levels existing prior to PR 1143 is anticipated because the proposed project would not require construction-related activities nor would it change the existing activities currently performed by persons who utilize consumer paint thinners and multi-purpose solvents. See also the response to item XII.a).

**XII.e) & f)** Implementation of PR 1143 would not affect existing practices by persons who utilize consumer paint thinners and multi-purpose solvents except that the end users would use low-VOC reformulated products. Even if affected sites where these products are used are located near public/private airports, no new noise impacts would be expected since the use of consumer paint thinners and multi-purpose solvents is not typically a noise intensive activity. Thus, PR 1143 is not expected to expose persons residing or working in the vicinity of public or private airports to excessive noise levels.

Based upon these considerations, significant noise impacts are not expected from the implementation of PR 1143 and are not further evaluated in this ~~Draft-Final~~ EA. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XIII. POPULATION AND HOUSING.</b> Would the project:			
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

**Discussion**

**XIII.a)** The proposed project is not anticipated to generate any significant effects, either direct or indirect, on the district's population or population distribution as no additional workers are anticipated to be required to comply with PR 1143. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PR 1143. As such, PR 1143 will not result in changes in population densities or induce significant growth in population.

**XIII.b) & c)** The proposed project is expected to require changes in the formulations of consumer paint thinners and multi-purpose solvents in order to comply with a VOC material content limit of 25 g/L. As such, PR 1143 is not expected to substantially alter existing operations where these reformulated products may be used. Consequently, PR 1143 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of persons or housing elsewhere in the district.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of PR 1143 and are not further evaluated in this Draft-Final EA. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XIV. PUBLIC SERVICES.</b> Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:			
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

**Discussion**

**XIV.a)** Potential adverse impacts to fire departments could occur in two ways: 1) if there is an increase in accidental release of hazardous materials used in compliant consumer paint thinners and multi-purpose solvents, fire departments would have to respond more frequently to accidental release incidences; and, 2) if there is an increase in the amount of hazardous materials stored at affected facilities, fire departments may have to conduct additional inspections. In the “worst-case”, this analysis assumes that most consumer paint thinners and multi-purpose solvents would be reformulated with acetone to meet the 25 g/L VOC material content limit in PR 1143 since acetone has the lowest flash point and highest flammability rating of the possible replacement materials. It should be again acknowledged, however, that PR 1143 does not require the use of acetone or for that matter, any particular product. In addition, other exempt solvents, aqueous, and bio-based technology is commercially available. Consumers who utilize consumer paint thinners and multi-purpose solvents would determine which compliant material to use based on a number of factors including, but not limited to, safety considerations.

As previously discussed in the “Air Quality” section, Table 2-5 summarizes the various chemical characteristics of currently used solvents that are found in conventional consumer paint thinners

and multi-purpose solvents and the potential replacement solvents that may be used to meet the 25 g/L VOC material content limit. In addition, Table 2-5 identifies the flammability classifications by the NFPA for all of the substances listed and shows that these classifications are the same for acetone, denatured alcohol (ethanol), MEK, toluene, and xylene. Recognizing that, as a “worst-case,” acetone has the lowest flash point, it still has the highest lower explosive limit, which means that acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 ppm. In contrast, toluene vapors can cause an explosion at 13,000 ppm. Further, the concentration of mineral spirits (Stoddard) or xylene vapors that could cause an explosion is even lower at 10,000 ppm.

While acknowledging the inherent safety issues associated with acetone, the capacity for its safe use is apparent based upon its widespread use. Chemistry classes at all levels from grade school to universities, as well as industrial laboratories, use acetone for wiping down counter tops and cleaning glassware. Additional uses for acetone include use as a solvent for paint, varnish, lacquers, inks, adhesives, floor coatings, and cosmetic products including nail polish and nail polish remover.

Communications with fire department personnel revealed that there would be equal concerns with the use of any conventional or replacement solvent which has a flash point below 65 degrees Fahrenheit. Even though there are several conventional solvents that have flash points below 65 degrees Fahrenheit, the use of consumer paint thinners and multi-purpose solvents formulated with these solvents are currently being safely used. Thus, there is no reason to believe that reformulating consumer paint thinners and multi-purpose solvents with acetone would substantially change the safety and handling practices currently in place.

Based on inquiries from the SCAQMD, Captain Michael R. Lee, Petroleum-Chemical Unit, County of Los Angeles Fire Department, submitted a letter to the SCAQMD stating that the UFC treats solvents such as acetone, MEK, and xylene as Class I Flammable Liquids. Further, the UFC considers all of these solvents to present the same relative degree of fire hazard. The UFC also sets the same requirements for the storage, use and handling of all three solvents. Captain Lee goes on to state, “In my opinion, acetone presents the highest degree of fire hazard of the three solvents considered, but not significantly more hazardous than the others.” He notes, however, that all three should be used with extreme caution, with proper safeguards in place. (Final EAs for PAR 1113, SCAQMD, 1996, 1998).

Based upon these considerations, the overall risk associated with the use of future reformulations of consumer paint thinners and multi-purpose solvents is not expected to appreciably change when PR 1143 is adopted. Further, implementation of PR 1143 will not generate significant adverse impacts to local fire departments requiring new or additional fire fighting resources. Any increase in the storage or accidental releases of compliant solvent formulations would be expected to result in a concurrent reduction in the storage and number of accidental releases of existing conventional solvent formulations. As a result, the need for inspections and the net number of accidental releases would be expected to remain relatively constant.

**XIV.b)** Local police departments are often the first responders to emergency situations such as fires to cordon off the area and provide crowd control. Since reformulating consumer paint thinners and multi-purpose solvents is not expected to increase the flammability relative to the flammability of conventionally used consumer paint thinners and multi-purpose solvents,

implementing PR 1143 is not expected to increase the number of fires associated with the reformulated products compared to the existing setting. As a result, no significant adverse impacts to local police departments are expected because no increases in fire emergencies are anticipated.

**XIV.c) & d)** The local labor pool (e.g., workforce) of people and consumers that use consumer paint thinners and multi-purpose solvents in their day-to-day activities is expected to remain the same since PR 1143 would not trigger substantial changes to current usage practices. Therefore, with no increase in local population anticipated (see discussion “XIII. Population and Housing”), construction of new or additional demands on existing schools and parks are not anticipated. Therefore, no significant adverse impacts are expected to local schools or parks.

**XIV.e)** PR 1143 will result in the use of reformulated consumer paint thinners and multi-purpose solvents. Besides the enforcement activities associated with implementing PR 1143, there is no other need for government services. Further, PR 1143 would not result in the need for new or physically altered government facilities, such as police or fire departments, in order to maintain acceptable service ratios, response times, or other performance objectives. There will be no increase in population and, therefore, no need for physically altered government facilities.

Based upon these considerations, significant public services impacts are not expected from the implementation of PR 1143 and are not further evaluated in this ~~Draft-Final~~ EA. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XV. RECREATION.</b>			
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

## Discussion

**XV.a) & b)** As discussed under “Land Use and Planning” above, there are no provisions in PR 1143 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments. No land use or planning requirements will be altered by the adoption of PR 1143 and the reformulation of consumer paint thinners and multi-purpose solvents. Further, PR 1143 would not increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment because it will not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from the implementation of PR 1143 and are not further evaluated in this Draft-Final EA. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XVI. SOLID/HAZARDOUS WASTE.</b> Would the project:			
a) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Significance Criteria

The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

## Discussion

**XVI.a) & b)** Any liquid wastes generated by PR 1143 are discussed in the “Hydrology and Water Quality” discussion as it is prohibited to dispose of liquid wastes in landfills. The type of waste associated with reformulated consumer paint thinners and multi-purpose solvents depends on the manner in which these products are used. In handwipe operations, solvent-laden rags are the predominant waste product (liquid cleanup solvent wastes are addressed in the “Hydrology and Water Quality” section). These wastes are a byproduct of hand wipe cleaning and not because of air quality regulations (i.e., PR 1143). Additionally, PR 1143 will not be cause of waste generation, but simply requires the materials used for consumer paint thinning and multi-purpose solvent use to meet a specified VOC content. Thus, PR 1143 may result in the alteration of the composition of a waste stream because of the reformulated products, but would not be expected to result in an increased generation of waste.

It is important to note that PR 1143 does not change the current requirements specific to cleanup solvent storage and disposal. Since future reformulations of consumer paint thinners and multi-purpose solvents are expected to be formulated with solvents that are equally or less toxic than currently used solvents (see “Hazards and Hazardous Materials” section), implementing PR 1143 is not expected to generate significant new adverse hazardous waste impacts.

Therefore, there are no significant adverse solid and hazardous waste impacts associated with PR 1143. As a result, no net increase in the amount or character of solid or hazardous waste streams is expected to occur. Further, PR 1143 is not expected to increase the volume of solid or hazardous wastes from persons who utilize the reformulated consumer paint thinners and multi-purpose solvents, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations.

Based upon these considerations, PR 1143 is not expected to increase the volume of solid or hazardous wastes that cannot be handled by existing municipal or hazardous waste disposal facilities, or require additional waste disposal capacity. Further, implementing PR 1143 is not expected to interfere with any affected distributors’ or retailers’ ability to comply with applicable local, state, or federal waste disposal regulations. Since no solid/hazardous waste impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XVII. TRANSPORTATION/TRAFFIC.</b> Would the project:			
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant Impact	No Impact
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection’s volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

**Discussion**

**XVII.a) & b)** The main effect of PR 1143 is that it establishes a VOC material content requirement for consumer paint thinners and multi-purpose solvents at 25 g/L. As a result of implementing PR 1143, new formulations of these products may be used in lieu of the conventional consumer paint thinners and multi-purpose solvents, which has no potential to adversely affect transportation. The volumes of new formulations are not expected to deviate substantially from the volumes of materials currently used. Thus, the current level of transportation demands related to transporting new formulations of materials is expected to remain equivalent. PR 1143 is not expected to affect existing uses and applications of consumer paint thinners and multi-purpose solvents that would change or cause additional worker trips to distribution or retail facilities or increase transportation demands or services. Therefore, since no substantial increase in operational-related trips are anticipated, implementing PR 1143 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities or other sites that use these products.

**XVII.c)** Because PR 1143 will affect future formulations for consumer paint thinners and multi-purpose solvents used at residential, industrial, and commercial facilities, the height and appearance of the existing structures where these products will be used are not expected to be affected by complying with PR 1143. Therefore, implementation of PR 1143 is not expected to adversely affect air traffic patterns. Further, PR 1143 will not affect in any way air traffic in the

region because, consumer paint thinners and multi-purpose solvents are typically shipped via ground transportation and not by air.

**XVII.d)** Compliance with the future VOC material content requirement for consumer paint thinners and multi-purpose solvents in PR 1143 does not require construction of structures or roadways. Further, implementing PR 1143 will not involve modifications to existing roadways. Consequently, implementing the proposed project will not create roadway hazards or incompatible roadway uses.

**XVII.e)** Compliance with future VOC content requirements for consumer paint thinners and multi-purpose solvents is not expected affect or require changes to emergency access at or in the vicinity of the affected facilities or other sites where these products are used since PR 1143 will not require construction or physical modifications of any kind. Therefore, PR 1143 is not expected to adversely affect emergency access.

**XVII.f)** Since PR 1143 will not involve construction of any structures or substantially alter operational practices, no new employees at distribution or retail facilities would be required to comply with the proposed project. As a result, no changes to the parking capacity at or in the vicinity of the affected distribution or retail facilities or other sites where consumer paint thinner and multi-purpose solvent use is expected. Therefore, the proposed project is not expected to adversely impact on- or off-site parking capacity.

**XVII.g)** Other than the reformulation of consumer paint thinners and multi-purpose solvents, no modifications at facilities or other sites where these products are used are expected that would conflict with alternative transportation, such as bus turnouts, bicycle racks, et cetera. Consequently, implementing PR 1143 will not create any conflicts with these modes of transportation.

Based upon these considerations, PR 1143 is not expected to generate significant adverse transportation/traffic impacts and, therefore, this topic will not be considered further. Since no significant transportation/traffic impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant Impact	No Impact
<b>XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.</b>			
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<b>Potentially Significant Impact</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**XVIII.a)** As discussed in the “Biological Resources” section, PR 1143 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because the proposed project will only affect future formulations of consumer paint thinners and multi-purpose solvents, many of which are currently available. These products can be used at new or existing residential, industrial, or commercial sites, however, these sites have already been greatly disturbed and as such, would not typically support habitats or include important examples of the major periods of California history or prehistory. Additionally, special status plants, animals, or natural communities are not expected to be found within close proximity to the commercial or industrial locations where PR 1143-compliant products would be used.

**XVIII.b)** Based on the foregoing analyses, since PR 1143 will not result in project-specific significant adverse environmental impacts because PR 1143 is not expected to cause cumulative impacts in conjunction with other projects that may occur concurrently with or subsequent to the proposed project. Related projects to PR 1143 include existing and other proposed rules and regulations, as well as 2007 AQMP control measures. Furthermore, the effects of PR 1143 will not be "cumulatively considerable" because there are no, or minor, incremental impacts and there will be no contribution to a significant cumulative impact caused by other projects that would exist in absence of the proposed project. For example, the environmental topics checked ‘No Impact’ (e.g., aesthetics, agriculture resources, biological resources, cultural resources, energy, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts whatsoever. For the environmental topic checked ‘Less than Significant Impact’ (e.g., air quality, hazards and hazardous materials), the analysis indicated that project impacts would not exceed any project-specific significance thresholds. This conclusion is based on the fact that the analyses for each of these environmental areas concluded that ~~there would be no~~ incremental effects of the proposed project would be minor and, therefore, not considered to be cumulatively considerable. Also, in the case of air quality impacts, the net effect of implementing the proposed project with other proposed rules and regulations, and control measures in the 2007 AQMP is an overall reduction in district-wide emissions contributing to the attainment of state

and national ambient air quality standards. Therefore, the proposed project has no potential for generating significant adverse cumulative or cumulatively considerable impacts.

**XVIII.c)** Based on the foregoing analyses, PR 1143 is not expected to cause adverse effects on human beings. Significant air quality impacts are not expected from implementing PR 1143. In fact, the direct beneficial effect from the proposed project, however, is a reduction in VOC emissions of approximately 9.75 ~~9.85~~ tons per day by 2014. No impacts to aesthetics, agriculture resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic are expected as a result of implementing PR 1143. Therefore, these environmental issues will not require further analysis.

As discussed in items I through XVIII above, the proposed project has no potential to cause significant adverse environmental effects.

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## APPENDIX A

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### PROPOSED RULE 1143

In order to save space and avoid repetition, please refer to the latest version of Proposed Rule 1143 located elsewhere in the rule adoption package.

The version “November 5, 2008” of the proposed rule was circulated with the Draft Environmental Assessment that was released on November 13, 2008 for a 30-day public review and comment period ending December 12, 2008.

Original hard copies of the Draft Environmental Assessment, which include the version “November 5, 2008” of the proposed rule, can be obtained through the SCAQMD Public Information Center at the Diamond Bar headquarters or by calling (909) 396-2039.

**APPENDIX B**

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**COMMENT LETTER ON THE DRAFT EA  
AND RESPONSES TO COMMENTS**

**Comment Letter #1**  
(Lyondell Chemical Company, December 12, 2008)



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December 12, 2008

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Re: Proposed Rule 1143 and Draft Environmental Assessment – Consumer Paint  
Thinners & Multi-Purpose Solvents.

Dear Ms. Radlein and Mr. Hopps,

As the developer and producer of tertiary-butyl acetate (TBAC) and a leading supplier of solvents to the coatings and cleaning industries, LyondellBasell Industries appreciates the opportunity to comment on Proposed Rule 1143 and the Draft Environmental Assessment (DEA).

In my October 27, 2008 letter to Mr. Hopps, I requested that the VOC exemption of TBAC be included in the CEQA analysis and proposed in rule 1143. This is necessary because the SCAQMD has still not updated rule 102 to include TBAC as an exempt solvent. As you know, TBAC was exempted by the US EPA in 2004 based on its negligible photochemical reactivity. It is indisputable that TBAC has negligible photochemical reactivity and qualifies for a VOC exemption. Its MIR (0.20 grams O<sub>3</sub>/gram) is about half that of ethane and acetone which are exempt in rule 102.

1-1

Despite our request, the DEA and Proposed Rule 1143 make no mention of TBAC, now an exempt solvent in 49 states, several California counties, and two SCAQMD rules (1151 and 1113). We also note that the definition of a VOC in rule 1143 makes reference to rule 102, which includes numerous exempt solvents, including PERC and methylene chloride which are both TACs and listed as carcinogens on Proposition 65.

1-2

LyondellBasell comments on PR 1143 and DEA - Multipurpose Solvents and Lacquer Thinner Workshop– December 12, 2008

Since TBAC is not discussed in any document pertaining to rule 1143, I can only surmise that this omission is due to the District's continued reliance on OEHHA's speculative concerns about the potential chronic toxicity of TBA, the primary metabolite of TBAC. However, OEHHA's speculative concerns about TBA and TBAC have still not been validated by California's Scientific Review Panel, nor are they shared by the majority of expert toxicologists who have reviewed the toxicological information including Dr. Calvin Willhite of California's Department of Toxic Substances.<sup>1</sup>

1-3

Furthermore, no regulatory agency, including OEHHA, has listed TBA or TBAC as toxics, carcinogens or reproductive toxins. Given that the use of exempt carcinogens is not prohibited in this proposed rule, it would be both unfair and counterproductive to continue to delay the exemption of TBAC based on this speculation, especially when consumers will likely be exposed to higher health and flammability risks if TBAC is not exempted.

1-4

Let's examine the likely consequences of proposed rule 1143 in its current form:

1. Acetone use and flammability risks will increase dramatically
2. Consumer use of carcinogens like PERC and methylene chloride will increase
3. Consumers and contractors will continue to use high VOC products that work

1-5

The reasons for this have been discussed in detail in my previous letter to you and my comments to CARB on their multipurpose solvents and thinners rule. However, they bear repeating one more time as our previous comments have apparently not been considered.

**The 25g/L VOC limit for Thinners is Not Technically Feasible, Necessary to Achieve Substantial VOC and Ozone Reductions, and Could be Dangerous.**

Thinners are used to reduce the viscosity of coatings to improve their sprayability, adhesion to rough or porous surfaces, appearance and durability. They are usually blends of solvents to improve their solubility properties for a broad range of resins and match their evaporation rate to that of the solvents in the coating. Thinners are sold as fast, medium, and slow-evaporating for that reason and to match environmental conditions.<sup>2</sup> In hot weather conditions, a slow thinner may provide improve flow and leveling properties and a smoother and more durable coating than a fast reducer. In cold conditions, a fast reducer may be required to achieve acceptable dry times.

Thinners are also specified and sold by the coating manufacturers because they are designed for a specific resin system. For example, a thinner for a two-component urethane system will not contain alcohols or other protic solvents because they react with the isocyanate crosslinkers. The thinner for alkyd-based trim paints is usually mineral spirits because of its low odor, low flammability, and good solvency for non-polar alkyd resins. Thinners for two-component epoxy coating for floors or steel structures may not contain ester or ketone solvents because they react with amino curatives. Thinners for lacquers need polar solvents because nitrocellulose and shellac are polar resins but asphalt coatings do not. Acetone is a very polar solvent and a poor substitute for toluene or mineral spirits

1-6

<sup>1</sup> Cf.: NSF International Peer Reviewed Risk Assessment on TBA, 2003. Available at: [http://www.techstreet.com/cgi-bin/detail?product\\_id=1094024](http://www.techstreet.com/cgi-bin/detail?product_id=1094024)

<sup>2</sup> cf.: [http://www.finish-pro.com/MSDS\\_Sheets.html](http://www.finish-pro.com/MSDS_Sheets.html)

LyondellBasell comments on PR 1143 and DEA - Multipurpose Solvents and Lacquer Thinner Workshop– December 12, 2008

especially for non-polar resins. TBAC on the other hand is much less polar and has been shown to be a good substitute for these two solvents.

1-6  
Cont'd

Therefore, imposing a 25 g/L VOC limit on thinners without a TBAC exemption would force formulators, contractors and consumers to use a handful of exempt solvents to formulate a wide range of coatings for a multitude of applications and environmental conditions. Unfortunately, there are not enough exempt solvents to cover the range of properties required to thin the range of coatings systems currently available.

This is illustrated by the examples of low-VOC “thinners” provided in 1-1 of the DEA (Table 4 in the DSR). Of the 8 “thinners” listed in the table, two do not appear to exist (Bortz Thinner and Deft IS-276), two are water-based emulsions unsuitable for thinning solvent-based coatings, and the RAMCO product is a methyl soyate based degreaser that is unsuitable for thinning because it does not evaporate. Only three products could potentially be used as thinners for solvent-based coatings. However, one (Rust-Oleum) is acetone, one (Deft IS-256) is PCBTF, and one (Carboline) is a 50/50 blend of acetone and PCBTF. These are not suitable for a majority of thinning needs.

1-7

**Acetone poses an extreme flammability risk and a high inhalation hazard compared to most conventional solvents**

Acetone is a polar, fast evaporating, extremely flammable, and odorous solvents that is not well suited for indoor use, especially for coating large areas and/or with inadequate ventilation. It is a poor solvent for non-polar resins like alkyds, hydrocarbon resins, halogenated resins, and greases which comprise a large portion of the resins and soils used by consumers.

Besides the technical problems associated with acetone use for thinning and cleanup, imposing a 25 g/L VOC content limit would lead to a 26-fold increase in acetone use and emissions in the District, both by contractors and consumers. Acetone presents an extreme flammability risk which is not reflected by its NFPA rating, especially compared to combustible solvents like mineral spirits.<sup>3</sup> The DEA relies on NFPA flammability ratings and LEL values to suggest that acetone presents a lower risk of than toluene or mineral spirits.<sup>4</sup>

1-8

*“Recognizing that acetone has the lower flash point, it still has a higher explosive limit than most than all the conventional solvents except denatured alcohol. This means that acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 ppm. In contrast, toluene vapors can cause an explosion at 13,000 ppm, which poses a much greater risk of explosion. The concentration of mineral spirits or xylene vapors, other conventional solvents, which could cause an explosion, is even lower at 10,000 ppm. Under operating guidelines of working with flammable material under well-ventilated areas, as prescribed by the fire department codes, it would be difficult to achieve concentrated*

<sup>3</sup> <http://www.dow.com/productsafety/finder/acetone.htm>

<sup>3</sup> [http://www.ccohs.ca/oshanswers/chemicals/chem\\_profiles/acetone/working\\_ace.html#\\_1\\_2](http://www.ccohs.ca/oshanswers/chemicals/chem_profiles/acetone/working_ace.html#_1_2)

<sup>3</sup> <http://www.hse.gov.uk/press/2008/hseem667.htm>

<sup>3</sup> <http://www.ehs.utoronto.ca/Resources/whmis/whmis11/whmis11d.htm>

<sup>4</sup> PR 1443 DEA, pp. 2-38, 39

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*streams of such vapors for unconventional solvents and would be extremely more difficult for acetone."*

This statement reflects a fundamental misunderstanding of flammability principles leading the authors to a dangerously erroneous conclusion. Acetone has the lowest flash point (-4°F) of any conventional or replacement **because it reaches its lower explosive concentration (LEL) at that temperature.** In contrast, the flash point of mineral spirits is over 100°F so it is unlikely to reach its LEL except if heated or on hot summer days. The flammability of a solvent is a function of its LEL, UEL, and its vapor pressure, not just its LEL as the DEA implies. This is illustrated by the vapor concentration vs. temperature curve for acetone, toluene, TBAC, and n-decane, the main component of mineral spirits, figure 1.

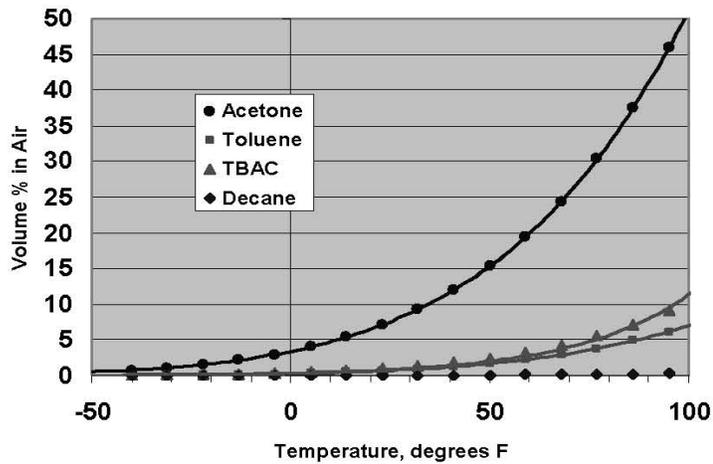


Figure 1: Vapor concentration of four solvents as a function of temperature.

Because of acetone's high vapor pressure, it reaches its lower explosive limit of 2.6 volume % at a much lower temperature (-4°F) than most conventional solvents. The higher flash points of other solvents reflect the fact that, although their lower explosive limit is lower than acetone, it is not reached until much higher temperatures.

In addition, acetone has a flammability range (LEL-UEL) of 10.2% about twice that of mineral spirits (5.8%), TBAC (5.6%), and toluene (5.7%). Air saturated with acetone above the UEL (which is reached @45°F) can become explosive if it is diluted with air. So ventilating a room saturated with acetone (which occurs at any temperature above 45°F) could result in an explosive atmosphere. Furthermore, adding of acetone or methyl acetate to higher flash solvent blends amounts to adding a low-temperature "detonator" to the solvent mixture.

Although the NFPA does not keep detailed statistics of the solvents responsible for household and commercial fires, acetone has been implicated in a number of fires both in

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1-11

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the home and in commercial operations.<sup>5</sup> By relying on NFPA ratings and ignoring the extreme volatility and broad explosive range of acetone compared to conventional solvents, the DEA comes to the wrong conclusion about its flammability risks.

1-11  
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The high vapor pressure of acetone also contributes to a higher health risk than is acknowledged in the DEA because acetone reaches its OSHA PEL much more readily than solvents with lower volatility. In fact, at ambient temperature (68°F) the Inhalation Hazard (air concentration/OSHA PEL) of acetone (71) is about twice that of TBAC (47) and toluene (32) and >200 times higher than mineral spirits (0.3). Therefore, there is little doubt that promoting the use of acetone instead of mineral spirits or even toluene or TBAC would result in a huge increase in the risk of fire, solvent emissions and exposures, which would likely result in an increase in property damage, illness, injuries, and deaths to consumers and contractors in the SoCal basin.

1-12

**Other exempt solvents are technically unsuitable or pose unacceptable health risks**

Methyl acetate has properties very similar to acetone including high polarity, evaporation rate, and flammability. Therefore it does not provide contractors or consumers with improved performance or safety and will likely not be used extensively.

PCBTF is an expensive, dense (11.2 lbs/gallon), and relatively poor solvent. It does offer lower flammability and reactivity compared to acetone and TBAC. However, because it is a less effective viscosity reducer than TBAC, more would be required resulting in and estimated 60% greater solvent emissions and 20% higher ozone formed than if TBAC were used. PCBTF is also more environmentally persistent, more toxic to aquatic life, and less is known about its toxicity, especially its chronic toxicity. Its use is also expected to be minimal, mainly because of its high cost and unpleasant odor.

1-13

Methyl soyate and other LVP-VOCs may be effective cleaning solvents for some applications, but they cannot be used as thinning solvents for one simple reason: their evaporation rates are much too slow and coatings need to dry in a reasonable amount of time.

**TBAC should be exempted in rule 1143**

1. **Tertiary-Butyl Acetate:** TBAC is a colorless solvent with a blueberry- or camphor-like odor. It is manufactured from acetic acid and isobutylene, both derived from natural gas, although acetic acid is also produced from bio-ethanol. TBAC also occurs in nature a component of banana fragrance. TBAC is a versatile solvent with a medium evaporation rate and good solvency properties for a wide range of resins and greases. It is used as a VOC-exempt solvent in industrial coatings, inks,

1-14

<sup>5</sup> See for example:

<http://www.kake.com/home/headlines/26192039.html>;  
[http://www.staffordshirefire.gov.uk/ccm/content/press-releases/2007/february-2007/blaze-at-fireplace-manufacturers.en.jsessionid=aDJ\\_gWufRi3b](http://www.staffordshirefire.gov.uk/ccm/content/press-releases/2007/february-2007/blaze-at-fireplace-manufacturers.en.jsessionid=aDJ_gWufRi3b);  
[http://www.nj.com/recordpress/index.ssf/2008/09/sp\\_blaze\\_injures\\_three\\_destroy.html](http://www.nj.com/recordpress/index.ssf/2008/09/sp_blaze_injures_three_destroy.html);  
[http://www.nypost.com/seven/03292008/news/regionalnews/mt\\_vernon\\_chem\\_blaze\\_104005.htm](http://www.nypost.com/seven/03292008/news/regionalnews/mt_vernon_chem_blaze_104005.htm);  
<http://www.cbc.ca/canada/newfoundland-labrador/story/2007/10/25/hollywood-fire.html>;  
<http://www.marine-marketing.gr/newsclip.php?file=200347.txt>;  
<http://community.seattletimes.nwsources.com/archive/?date=19930511&slug=1700689>

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adhesives, and cleaners. It is also used as a pharmaceutical intermediate and in some consumer and commercial products such as lacquers, stains, and sealants. It is a good substitute for reactive solvents like toluene, xylene, ketones and esters and for exempt TACs like PERC and methylene chloride.

2. As a VOC: TBAC was exempted by the US EPA in 2004 and is exempt in 49 states, several CA counties and two District rules. Its ozone-forming potential is half that of acetone. TBAC also does not contribute to PM formation, ozone depletion, or global warming. It does not bioaccumulate or bioconcentrate in fish and it is not toxic to aquatic life. It is not yet listed as a VOC-exempt compound in rule 102. We are requesting that it be exempted in rule 1143 and have previously requested an exemption in 102.
3. Flammability: TBAC flammability is rated “three” by the NFPA which means that it is considered highly flammable. However, its flash point is 40°F which is similar to toluene and higher than conventional solvents like MEK and exempt solvents like acetone (-4°F) and methyl acetate (9°F).
4. Toxicology: TBAC is a slight skin irritant and moderate eye irritant. TBAC is only slightly toxic following acute inhalation, oral, or dermal exposure. Ingestion or inhalation of high doses may cause CNS depression. It is a very slight skin and moderate eye irritant. It is not a sensitizer, nor a genotoxic agent. Studies in animals indicate that t-butyl acetate is not a developmental or reproductive toxicant. Repeated inhalation exposure studies in animals indicate that t-butyl acetate may cause transient behavioral changes, increased liver, adrenal, and kidney weights, and possible kidney changes. However, the type of kidney changes observed is unique to the male rat kidney. Animal studies have shown that TBAC has low acute and subchronic toxicity and metabolizes rapidly in the body to tertiary butyl alcohol (TBA) and acetic acid. Acetic acid is a component of vinegar and an intermediate in the Krebs cycle. The FDA has classified acetic acid as GRAS (generally regarded as safe) for human consumption. TBA also has low acute and subchronic toxicity. TBA is not genotoxic, mutagenic, nor is it a reproductive or developmental toxicant.

The chronic toxicity of TBAC has not been evaluated. However, its primary metabolite TBA has been tested for chronic toxicity and is believed that the chronic toxicity of TBAC will be similar to TBA. The chronic toxicity of TBA was recently reviewed by an independent panel of toxicologists who concluded that the chronic studies for TBA are “*inadequate for the assessment of human carcinogenic potential.*” California does not list TBA or TBAC as carcinogens or reproductive toxicants under Proposition 65. The Department of Human Health Services, the International Agency for Research on Cancer (IARC), and EPA have not classified TBA or TBAC for carcinogenicity. California has not classified TBAC or TBA as TACs under AB 1807. TBAC is included on the list of “Substances whose emissions must be quantified” under AB 2588 Air Toxics “Hot Spots” program to insure that the federal reporting requirement for TBAC is met. The Federal 1990 Clean Air Act does not list TBAC as a HAP.

If TBAC is not exempted in rule 1143, consumers and contractors may turn to exempt carcinogens like PERC and Methylene chloride for both cleanup and thinning or continue to use high VOC thinners and solvents illegally. The District has not considered the

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potential health effects of increased PERC and Methylene chloride use on consumers or the continued use of high VOC solvents and thinners on ozone levels in the SoCal. The District should not expect consumers and contractors to comply with a technically infeasible VOC content limit while at the same time withholding a safe and effective compliance tool like TBAC.

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Therefore, we recommend that the SCAQMD propose a TBAC exemption and a 250 g/L VOC limit for thinners in rule 1143. With TBAC exempt for both thinners and multipurpose cleaners, this option could provide VOC and ozone reduction benefits comparable to the 25 g/L VOC content limit under consideration. This is because acetone is only half as reactive as mineral spirits which accounts for 56% of all solvents used in these two product categories. Exempting TBAC would reduce ozone formed compared to acetone and yield the same ozone reduction benefits without the extreme flammability risk of widespread acetone usage or the increased cancer risk if consumers and contractors must choose PERC or methylene chloride.

1-16

**With TBAC exempt, the exemption for Industrial Maintenance coatings would be unnecessary and greater VOC and TAC reductions could be achieved**

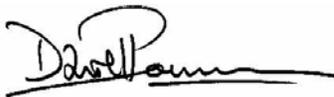
TBAC is a suitable thinner for Industrial Maintenance coatings whether based on urethanes, epoxies, alkyds, or other resin technologies. With a 250g/L limit on thinners and exempt TBAC, coating formulators could produce thinners with much lower VOC contents an ozone-forming potential than with the current proposed exemption for Industrial Maintenance (IM) coatings. With the current proposal, users of Industrial Maintenance coatings may use any VOC for thinning including highly reactive TACs like toluene and xylene. These solvents are not only inexpensive but effective viscosity reducers. Therefore, the likelihood they will be used to thin this major category of coatings is high, resulting in much higher TAC and VOC emissions resulting in higher ozone and PM levels than would be achieved with a TBAC exemption and a 250g/L VOC limit on thinners for IM coatings.

1-17

We urge the District to delay this rulemaking until CARB issues the results of its new survey, the District seriously considers these comments and those we submitted previously, and fully assesses the risks associated with widespread use of acetone and exempt carcinogens by consumers and contractors. We request that TBAC be exempted for rule 1143 and the proposed VOC content limit for thinners be increased to 250 grams/L. We also request that the exemption for Industrial Maintenance coatings be removed. Please feel free to call me with any questions or if you need additional information on TBAC.

1-18

Sincerely,



Daniel B. Pourreau, Ph.D.

cc via email: Laki Tisopulos (SCAQMD), Naveen Berry (SCAQMD), Steve Smith (SCAQMD), Dave Mallory (CARB), and Dave Darling (NPCA).

**Responses to Comment Letter #1**  
(Lyondell Chemical Company, December 12, 2008)

- 1-1 Although TBAC possesses a low photochemical reactivity as well as some other physical and chemical properties that are considered desirable by its manufacturer's representatives, SCAQMD staff considers TBAC to be unsuitable for consideration as a potential replacement for conventional solvents in PR 1143 because of TBAC's potential toxicity. Specifically, TBAC has the potential to form a metabolite called tert-butyl alcohol (TBA) which has cancer potency and acute noncarcinogenic values established by OEHHA. According to Acute Toxicity and Cancer Risk Assessment Values for TBA, (Budroe, et al., 2004), "TBAC should be considered to pose a potential cancer risk to humans because of the metabolic conversion to TBA." In the past few years, the SCAQMD adopted some very carefully crafted, limited exemptions that would allow primers used in auto body coating operations and industrial maintenance (IM) coatings used in architectural coating operations to be formulated with TBAC. These specific applications, for the most part, are used in industrial settings where workers applying products formulated with TBAC are required to wear personal protective equipment such as respirators. SCAQMD staff's intent of allowing this narrow scope of TBAC in other rules was to limit the potential health risk to both workers and receptors. Subsequent to the adoption of the limited exemption for TBAC, SCAQMD staff had hoped that the manufacturer of TBAC would provide OEHHA with data from a two-year chronic exposure study to settle pending concerns about TBAC's toxicity. A review of the available literature about studies conducted on TBAC show that TBAC has the potential to form TBA, which has been shown to cause tumors in male rats (kidney) and female mice (thyroid). For these reasons, OEHHA's concerns about TBAC's toxicity persist. Further, since alternative, less toxic products are currently available and have been in use for more than ten years, to protect consumers, the SCAQMD does not plan to include TBAC as a potential exempt solvent replacement as part of implementing PR 1143.
- 1-2 The focus of the analysis contained in the Draft EA is to evaluate the potential impacts of the proposed project. Since TBAC is not considered to be an exempt VOC, it is not expected to be used to formulate compliant products and, therefore, was not included in the analysis of potential impacts from likely replacement solvents. However, based on the concerns expressed regarding other Rule 102 Group II exempt solvents that may have toxicity or carcinogenicity concerns, SCAQMD staff has revised PR 1143 to include a prohibition for Group II exempt compounds listed in Rule 102, which includes both perchloroethane and methylene chloride. For these reasons, the Draft EA does not need to include an analysis relative to the potential use of TBAC, perchloroethane or methylene chloride, because these solvents are not expected to be used to formulate compliant products. Also, see the response to Comment 1-1.
- 1-3 The implication in this comment is that because TBA has not been validated by the Scientific Review Panel, it is speculative to assume that TBA is a carcinogen. A review of the literature shows that studies have been conducted showing tumors in male rats (kidney) and female mice (thyroid). (The Carcinogenic Potency Project; <http://potency.berkeley.edu/>.) Similar results are presented by McGregor and Hard.

(Douglas McGregor and Gordon C. Hard. 2001. *Toxicological Sciences* 61, 1-3.) See also response to Comment 1-1.

- 1-4 With regard to the comment that the use of exempt carcinogens is not prohibited in PR 1143, the proposed rule has been revised to prohibit the use of consumer paint thinners and multi-purpose solvents that contain an excess of 0.1 percent of Group II Exempt compounds as listed in Rule 102, except for cyclic, branched, or linear, completely methylated siloxanes. Although the commentator alleges that consumers will be exposed to higher health and flammability risks if TBAC is not exempted, no evidence to support this claim has been provided. With regard to the comment that no regulatory agency has listed TBA or TBAC as toxics, carcinogens, or reproductive toxins, see the responses to Comments 1-1 and 1-3.
- 1-5 Despite the commentator's allegation, SCAQMD staff has seriously considered the previous comments submitted concerning acetone. However, as noted in the Staff Report and DEA, acetone is one of several options available for compliant products as it is an exempt VOC. Further, the Draft EA analysis assumed that the use of acetone could increase as a result of implementing PR 1143 because it is expected to be the primary replacement solvent. To say that the flammability risks will increase dramatically due to the increased use of acetone in reformulations is an exaggeration. Acetone is currently in use as a conventional solvent for a multitude of products including consumer paint thinners and multi-purpose solvents because it is an effective cleaning solvent and is classified as an exempt VOC.

Similar claims have been made with regard to the flammability of acetone when used in paint reformulations pursuant to the development of SCAQMD Rule 1113 – Architectural Coatings. Relative to the flammability of acetone, the commentator is referred to two comment letters received from local fire agencies regarding the Draft Subsequent Environmental Assessment prepared for the 1996 amendments to Rule 1113 (referred to and enclosed herein as Exhibits A and B). In Exhibit A, the Los Angeles County Fire Department stated that the Uniform Fire Code treats all solvents rated as Class I Flammable Liquids (which includes acetone) subject to specific storage, use and handling requirements, as presenting the same relative degree of fire hazard. Further, when compared to other conventional solvents such as MEK, xylene, and butyl acetate, “acetone presents the highest degree of fire hazard of the four solvents considered, but it is not significantly more hazardous than the others.”

Similarly in Exhibit B, the review of acetone by the Orange County Fire Authority considers acetone to have “identical physical and health hazard classifications when compared to Toluene, MEK and Butyl Acetate.” The letter goes on to state, “Based upon the identified hazard classifications, Acetone would not pose any greater relative physical or health hazard when compared to Toluene, MEK and Butyl Acetate.”

In oral comments provided by CARB staff at the SCAQMD's public consultation meeting on December 9, 2008, it was inferred that the California Office of the State Fire Marshal (OSFM) is opposed to the potential increased use of acetone pursuant to PR

1143. Although SCAQMD staff did not participate in the discussions between CARB staff and OSFM staff, it is SCAQMD staff's understanding that during these discussions, CARB did not provide or discuss the specifics relating to the purpose or implementation of PR 1143 and how acetone may be involved. Instead, the OSFM had made verbal comments reacting to a hypothetical scenario about the increased use of acetone as put forth by CARB staff, who did not provide specific details as they relate to PR 1143. After SCAQMD staff was alerted to OSFM's alleged concerns about PR 1143, SCAQMD staff arranged for a conference call on December 12, 2008<sup>12</sup>, to obtain specific information from OSFM staff regarding their concerns and to provide background about the scope of the proposed rule. OSFM staff indicated that they had not reviewed PR 1143, but their office has specific requirements regarding the transport and storage of containers with a capacity greater than five gallons of acetone in industrial settings. However, OSFM staff emphasized that they also have the same concerns about the use, storage and transport of all flammable solvents, including those used in current technologies. At the end of the conference call, OSFM staff agreed to contact SCAQMD staff after reviewing PR 1143, the Staff Report and Draft EA only if they have concerns.

On February 5, 2009, SCAQMD staff held a Public Consultation Meeting for PR 1143 and Mr. Ernie Paez, Chief of the Fire and Safety Division of the Southern Region in the OSFM, attended the meeting but did not offer any verbal or written comments regarding PR 1143. Later that day, SCAQMD staff emailed Chief Paez to inquire about whether he had any questions about PR 1143 or concerns with the flammability of acetone. Chief Paez's response was as follows: *"I have forwarded the information that I gathered to Vickie Sakamoto in Sacramento. She will be your contact. I have not been part of any discussions regarding this rule. I will assist her in any way I can if requested. Vickie's phone number is (916) 445-8337."* To date, SCAQMD staff has not received any further communications from OSFM staff regarding PR 1143.

The implication in this comment is that TBAC is not flammable. According to the U.S. Department of Labor – Occupational Safety and Health Administration, "There is no National Fire Protection Association fire hazard rating for tert-butyl acetate; however, other sources rate this substance's fire hazard potential as severe<sup>13</sup>."

Further, although information regarding the flammability is limited, according to the MSDS for TBAC (sciencelab.com), TBAC is flammable, NFPA rated "3;" has a flashpoint of 62.1 °F, which is higher than the flashpoint of acetone, but is well within the temperature ranges common to southern California; has an LEL of 1.5 percent, lower than acetone; and is slightly flammable and explosive in the presence of oxidizing materials, acids and alkalis. Data regarding the auto-ignition and UEL are not available. Based on these data, it appears that, although some flammability information is unknown, the use of TBAC also presents a flammability risk in the same range as acetone.

<sup>12</sup> Conference call between SCAQMD staff and OSFM staff (Vickie Sakamoto and Steve Guarino) on December 12, 2008.

<sup>13</sup> Occupational Safety and Health Guideline for Tert-Butyl Acetate,  
<http://www.osha.gov/SLTC/healthguidelines/tertbutylacetate/recognition.html>

Though the commentator alleges that the use of perchloroethylene and methylene chloride will increase as a result of PR 1143, there is no evidence to support this claim. Perchloroethylene and methylene chloride are toxic solvents that are heavily regulated for use in various industrial and commercial applications, but are not readily available to the average consumer for purchase from “big box” stores. Nevertheless, to assure that this scenario will not occur, as previously mentioned in the response to comment 1-4, PR 1143 has been clarified to prohibit the use of all Group II exempt compounds listed in Rule 102 for replacement solvents formulated in response to the requirements in PR 1143.

Finally, SCAQMD staff disagrees with the opinion expressed in this comment that the consumers will continue to use high-VOC products after the effective date once PR 1143 is implemented because the use of non-compliant, high-VOC products would be a violation of PR 1143. SCAQMD staff does not conduct household-to-household inspections, but can enforce the requirements in PR 1143, if adopted, at the store and manufacturer level, similar to the enforcement of SCAQMD Rule 1113 – Architectural Coatings. While PR 1143 is for products used by consumers, contractors would continue be subject to the requirements in SCAQMD Rule 1171 – Solvent Cleaning Operations as they have been required to comply with the Rule 1171 requirements for several years.

- 1-6 The manufacturers of alternative, compliant, multi-purpose solvents, paint thinners, and lacquer thinners have testified at the public workshop for PR 1143, CARB meetings, and working group meetings that they can reformulate their products to match the existing properties of conventional multi-purpose solvents and paint thinners. SCAQMD staff has identified a compliant lacquer thinner that is currently available and is used both for thinning and clean-up. Furthermore, as indicated in the Staff Report for PR 1143, the volume of solvent-based (non-polar) coatings currently being used has been substantially reduced as a result of the increasingly stringent amendments to SCAQMD Rule 1113; the majority of the sales data shows the use of waterborne coatings, including lacquers. Based on current VOC limits in Rule 1113, most if not all, alkyd-based paints are currently waterborne and would not use mineral spirits for thinning. SCAQMD staff has reviewed and identified the availability of various compliant technologies for multi-purpose solvents and paint thinners, and analyzed safety issues associated with flammability of acetone. Shellacs use ammonia as both a thinner and clean-up solvent and compliant lacquer thinners are currently available and in use. However, for specific thinners designated to be used only for industrial maintenance coatings (urethanes, epoxy and zinc), an exemption has been added to PR 1143.
- 1-7 On the contrary to the commentator’s suggestion that two products listed in Table 1-1 of the Draft EA and Table 4 of the Draft Staff Report do not exist, in fact both the Bortz Thinner and the Deft IS-276 are available to the consumer. Specifically, the Bortz Lacquer Thinner is currently sold under the Crown line of products under the name “Low VOC Lacquer Thinner LVLT01” and the MSDS sheet for this product shows the exact same data as when Bortz Distributing originally formulated it. The full name for Deft IS-276 is “Deft Zero VOC Acrylic Thinner IS-276” and is available by calling Deft’s technical support department.

Further, the manufacturers of alternative compliant, multi-purpose solvents, paint thinners, and lacquer thinners have testified in the public workshop, CARB meetings, and working group meetings for PR 1143 that they can reformulate their products to match the existing properties of multi-purpose solvents and paint thinners. See also the response to Comment 1-6.

- 1-8 The commentator is referring to the NFPA rating system (i.e. NFPA 704) which is a “standard (that) provides a readily recognized, easily understood system for identifying specific hazards and their severity using spatial, visual, and numerical methods to describe in simple terms the relative hazards of a material. It addresses the health, flammability, instability, and related hazards that may be presented as short-term, acute exposures that are most likely to occur as a result of fire, spill, or similar emergency<sup>14</sup>.” NFPA 704 for flammability hazards is a flammability classification rating that is based on multiple factors, including flash point, boiling point, evaporation rate, LEL/UEL ratio, auto-ignition temperature, and vapor pressure. Therefore, it is an appropriate indicator of a material’s flammability risk. See also the OSFM discussion regarding flammability in the response to Comment 1-5.

As stated in the DEA, the flammability NFPA rating for mineral spirits is “2” while the rating for acetone is “3” which means that acetone is more flammable than mineral spirits. However, all other conventional solvents used for consumer paint thinners and multi-purpose solvents such as denatured alcohol, isopropyl alcohol, lacquer thinner, paint thinner, toluene, turpentine, VM&P naphtha, and xylene all have a flammability NFPA rating of “3.” As previously explained in the response to Comment 1-5, the fire departments treat the storage, use and handling of these materials with the same NFPA classification rating in the same way.

Further, SCAQMD staff has consulted with representatives from both local and state fire departments regarding the flammability, safety and health concerns about acetone. SCAQMD staff was informed that under the Uniform Fire Code, solvents such as acetone, butyl acetate, MEK, and toluene and xylene are all Class I flammable liquids but that xylene presents the highest health hazard of all the solvents listed. While the fire department representatives acknowledged that acetone has a slight increase in the flammability hazard, they also emphasized that all of the solvents listed should be used with extreme caution. SCAQMD staff has reviewed and identified the availability of various compliant technologies for consumer paint thinners and multi-purpose solvents and has analyzed safety issues associated with flammability of acetone.

The commentator also states that acetone “is not well suited for indoor use...” implying that his company’s product, TBAC, is. According to the MSDS for TBAC, (sciencelab.com), personal protection should consist of splash goggles, lab coat, an approved/certified vapor respirator or equivalent, and gloves. Further, “suggested protective clothing might not be sufficient; consult a specialist before handling this product.”

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<sup>14</sup> <http://www.nfpa.org/faq.asp?categoryID=928&cookie%5Ftest=1>

- 1-9 As stated in the DEA, acetone has the lowest flash point of all the conventional and replacement solvents listed at -4°F, while the flash points for methyl acetate, lacquer thinner, MEK, toluene, isopropyl alcohol, denatured alcohol and VM&P naphtha all have flash points below 56°F. Further, TBAC has a flashpoint of 62.1 °F. Since the average temperature in southern California frequently exceeds both 56°F and 62.1°F, there is a risk of explosion for all of these conventional and replacement solvents, as well as TBAC, not just with acetone.
- 1-10 As stated in the DEA, acetone has a flammability range (the UEL minus the LEL) of 10.2 percent by volume, and there are other conventional solvents currently in use that are at about the same range or higher than that of acetone such as lacquer thinner at 16.4 percent, denatured alcohol at 15.7 percent, isopropyl alcohol at 10.7 percent and MEK at 9.7 percent. The flammability range for two other replacement solvents, methyl acetate and PCBTF, are 13 percent and 9.6 percent, respectively. Thus, singling out acetone for its flammability range without considering the other conventional solvents that have similar or higher flammability ranges is misleading.
- 1-11 The commentator's suggestion that acetone has been the cause of a number of residential and commercial fires is misleading and does not support the claim that acetone is any more volatile and explosive than other conventional solvents, as no similar information for other solvent products is provided. Further, to say that the Draft EA mischaracterized the flammability risk of acetone by relying on NFPA ratings, considering that the industry standard for characterizing flammability risks of all chemicals is based on the NFPA rating system, is false.

Of the seven news articles referenced by the commentator, only two fires (one residential and one at a fireplace manufacturing facility) were reported to be caused by acetone. However, the residential fire was reported to have occurred due to the improper use of acetone near a heat source (hot water heater). One report of a residential fire was inconclusive about how the fire started. The fires at the commercial fiberglass plant, chemical warehouse, and yacht manufacturing warehouse all had multiple, flammable chemicals present in addition to acetone. Similarly, the passenger ferry fire was attributed to a truck containing multiple flammable chemicals, not just acetone.

Although the commentator points out that NFPA may not keep detailed statistics of solvents responsible for fires, the California Governor's Office of Emergency Services (OES) tracks these events via their Hazardous Materials Spill Report system. Reports received by OES from January 2002 through December 9, 2008 show that there were 31 events that involved acetone and of these, only one resulted in fire due to a mixture of acetone with other chemicals on-site<sup>15</sup>. The majority of the acetone release events reported during this timeframe was caused by operator error, container mishandling, railcar leaks, truck transport leaks, broken pipeline, container punctures and other container leaks, and cleaning up illicit drug laboratories.

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<sup>15</sup> Governor's Office of Emergency Services, RIMS Archived Databases:  
<http://www.oes.ca.gov/WebPage/oeswebsite.nsf/Content/2307FB39E91EC32C8825749E0062EF47?OpenDocument>

Similarly, the California State Fire Marshal in cooperation with the National Fire Incident Report System tracks fire statistics, but the cause of a chemical fire is described in general terms (i.e., not one specific chemical is assigned as the main cause of the fire)<sup>16</sup>. For example, between 2003 and 2007, there were 179 fires in California that were attributed to maintenance shops and paint shops. Similarly, in 2008, there were 95 fires in California that were caused by a chemical reaction<sup>17</sup>. However, none of these statistics share the specific origin or cause of the fires and they certainly do not identify acetone as the source. Further, these statistics do not identify the type of business or the specific activity or event that caused the fires, so to say that acetone is the single source of these reported chemical fires, especially when there are multiple flammable and potentially explosive chemicals in use in all spectrums of commercial and industrial businesses is not supported by the references provided by the commentator or other, more reliable sources.

Lastly, the Smithsonian Institute uses a mixture of water and acetone in its conservation efforts of the Star-Spangled Banner, the original flag that inspired the national anthem which shows that acetone, when properly handled, can be safely used even for the most delicate of projects<sup>18</sup>.

- 1-12 OSHA sets enforceable permissible exposure limits (PELs) to protect workers against adverse health effects of exposure to hazardous substances. PELs are regulatory limits on the amount or concentration of a substance in the air, but PELs may also contain a skin designation. OSHA PELs are based on an eight-hour time weighted average (TWA) exposure. The following are the PELs for all of the conventional solvents and potential replacement solvents that have been considered during the development of PR 1143:

Conventional Solvents	
Chemical Compound	OSHA PEL* (ppm)
Denatured Alcohol (Ethanol)	1,000
Isopropyl Alcohol	400
Lacquer Thinner <sup>f</sup>	125
MEK	200
Mineral Spirits (Stoddard)	500
Paint Thinner <sup>g</sup>	150
Toluene	200
Turpentine	100
VM&P Naphtha	300
Xylene	100

<sup>16</sup> From December 11, 2008 communication with William Gordon on, Office of the State Fire Marshal.

<sup>17</sup> California State Fire Marshal, National Fire Incident Reporting System, Fires by Are of Origin, 2003 – 2007.  
[http://osfm.fire.ca.gov/cairs/pdf/nfirs008\\_firesbyareoforigin\\_2003\\_07.pdf](http://osfm.fire.ca.gov/cairs/pdf/nfirs008_firesbyareoforigin_2003_07.pdf)

<sup>18</sup> American Chemistry Magazine, Protecting National Treasures,

[http://www.americanchemistry.com/s\\_acc/sec\\_article.asp?SID=1&DID=7395&CID=124&VID=109&RTID=0&CIDQS=&Taxonomy=&specialSearch=](http://www.americanchemistry.com/s_acc/sec_article.asp?SID=1&DID=7395&CID=124&VID=109&RTID=0&CIDQS=&Taxonomy=&specialSearch=)

Potential Replacement Solvents	
Chemical Compound	OSHA PEL* (ppm)
Acetone	1,000
Methyl Acetate	200
PCBTf	Not Established

\* At standard temperature and pressure 25 °C (or 77 °F) and 1 atmosphere of pressure.

Denatured alcohol and acetone have the same OSHA PEL at 1,000 ppm, which is the highest threshold of all the solvents listed. The higher the value, the higher the allowed air concentration is over an eight-hour period.

The commentator has incorrectly suggested that acetone is an inhalation hazard. The U.S. Department of Transportation (DOT) maintains a list of inhalation hazards for regulatory purposes in Title 49, Chapter I, Part 172, Subpart B, §172.101<sup>19</sup> and none of the conventional or replacement solvents, including acetone, associated with PR 1143 are included on this list.

- 1-13 SCAQMD staff has reviewed and identified the availability of various compliant technologies for multi-purpose solvents and paint thinners, and analyzed safety issues associated with flammability of acetone. Manufacturers of compliant thinners have testified at CARB meetings, working group meetings, and the public workshop for PR 1143 that they are able to match the evaporation rate of conventional high-VOC paint thinners and lacquer thinners. However, SCAQMD staff recognizes the need for specific thinners and reducers recommended for use with some industrial maintenance (IM) coatings, and therefore, based on comments received, has added an exemption to PR 1143 that will allow the sale and use of specific thinners to be used for thinning IM coatings. The list of compliant products included in the staff report for PR 1143 represent the broad range of technology already in use that would comply with the proposed limits in PR 1143. SCAQMD staff recognizes the limitations and strengths of each of the categories of the alternative technologies. See also the response to Comment 1-6.
- 1-14 With regard to exempting TBAC, see the response to Comment 1-1.
- 1-15 PR 1143 has been modified to contain a provision that would prohibit the use of Group II compounds as listed in Rule 102, including both perchloroethylene and methylene chloride. As a consequence of implementing PR 1143, the “big box” stores will be required to phase in new, compliant products that manufacturers have designated technically feasible and compliant with the limits in PR 1143. Therefore, the commentator’s claim that the use of high-VOC solvents after the effective date and sell-through date will continue to occur is speculative since there is no supporting information to substantiate the claim.

<sup>19</sup> <http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=49&PART=172&SECTION=101&YEAR=2000&TYPE=PDF>

- 1-16 In response to the commentator, SCAQMD staff has considered establishing a 250 gram per liter VOC limit as well as the concerns from industry and has revised the VOC limit in PR 1143 to 300 g/L of VOC effective January 1, 2010 and 25 g/L of VOC effective January 1, 2011. Further, SCAQMD staff recognizes the MIR values for acetone and mineral spirits and believes that additional ozone reductions will result from implementing PR 1143.
- 1-17 With regard to TBAC as an exempt solvent, see the response to Comment 1-1. With regard to the flammability of TBAC, see the response to Comment 1-5. With regard to toxicology, refer to the response to Comment 1-3.
- 1-18 SCAQMD staff will continue to work closely with CARB once the survey data are available. However, the adoption and implementation of PR 1143 has been delayed to March 6, 2009, to address all comments received and because SCAQMD staff believes that an expedited rulemaking is necessary to implement Control Measure CTS-04 in a timely manner, which will result in reducing VOCs by 9.75 tons per day (a 96.6 percent reduction from the current inventory of 10.2 tons per day). Further, SCAQMD staff has consulted with local fire departments and the Office of State Fire Marshal and determined that the increased use of acetone has the same level of concern as the other higher VOC solvents such as MEK, toluene and xylene. Finally, TBAC is believed to form a metabolite TBA which has a potential health risk and as such will not be considered as a viable VOC-exempt compound alternative for PR 1143, especially considering that alternative technologies that do not have similar health concerns and that are currently widely available and used.

**Exhibit A**  
(County of Los Angeles Fire Department, June 12, 1996)



**COUNTY OF LOS ANGELES**

**FIRE DEPARTMENT**

1320 NORTH EASTERN AVENUE  
LOS ANGELES, CALIFORNIA 90063-3294  
(213) 890-4132

P. MICHAEL FREEMAN  
FIRE CHIEF  
FORESTER & FIRE WARDEN

June 12, 1996

Mr. David DeBoer  
Air Quality Management District  
21685 E. Copley Dr.  
Diamond Bar, CA 91765-4182

**Re: RELATIVE HAZARDS OF SOLVENTS USED IN PAINTS**

Dear Mr. DeBoer:

After our phone conversation concerning the substitution of acetone for other solvents commonly used in paints, I reviewed the properties of the materials you named:

SOLVENT	NFPA HEALTH	NO4 FIRE	FP	BP	FLAMMABLE RANGE	IGNITION TEMP
ACETONE	1	3	4	133	2.5 -- 13	869
BUTYL ACETATE	1	3	72	260	1.7 -- 7.6	797
MEX	1	3	16	176	1.4 -- 11.4	759
XYLENE	2	3	81	262	1.1 -- 7.0	962

Xylene is the least flammable and is listed as a Class I-C Flammable Liquid, but has a higher health hazard. The other three are Class I-B Flammable Liquids.

The Uniform Fire Code treats all four of the above solvents as Class I Flammable Liquids, considering them all to present the same relative degree of fire hazard. The Fire Code sets the same requirements for the storage, use and handling of all three.

There are many factors that would contribute to the fire hazard when any of these solvents are used in paint. When spread thinly over a surface at normal ambient temperature (70 degrees Fahrenheit), the first three would emit a sufficient quantity of vapors to be ignited. Spraying paint with these solvents in it, greatly increases the fire hazard.

SERVING THE UNINCORPORATED AREAS OF LOS ANGELES COUNTY AND THE CITIES OF:

AGOURA HILLS	CLAREMONT	GLENDORA	LANEWOOD	MAYWOOD	RANCHO PALOS VERDES	SOUTH EL MONTE
ARTISTIA	CARSON	HAWAIIAN GARDENS	LA BREA	NORWALK	ROLLING HILLS	SOUTH GATE
AZUSA	CERRITOS	HIDDEN HILLS	LANCASTER	PAI MDALE	ROLLING HILLS ESTATES	TEMPLE CITY
BA. DAWN PARK	CLAREMONT	HUNTINGTON PARK	LA PUENTE	PALOS VERDES ESTATES	ROSEMead	WALNUT
BEVERLY HILLS	COMMERCE	INDUSTRY	LANDALE	PARAMOUNT	SAN DIMAS	WEST HOLLYWOOD
BELLFLOWER	CORONA	IRVINDALE	LOMITA	RIO RIVERA	SANTA CLAIRA	WESTLAKE VILLAGE
BELL GARDENS	DIAMOND BAR	LA CANADA FLINTRIDGE	MAJUBA	POMONA	SIGNAL HILL	WHITTIER
SHAUBURTY	CLAREMONT					

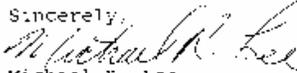
**Exhibit A**  
(County of Los Angeles Fire Department, June 12, 1996)

Mr. David DeBoer  
page 2

In my opinion, acetone presents the highest degree of fire hazard of the four solvents considered, but is not significantly more hazardous than the others. All four should be used with extreme caution, with proper safeguards in place.

Should you need further information or assistance on this matter, please contact me at (213) 890 4132.

Sincerely,



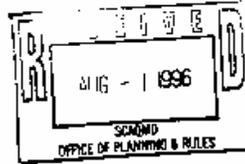
Michael R. Lee  
Captain, Petroleum-Chemical Unit  
Fire Prevention Division

cc:  
Burriaga  
Lyle  
Lee  
x

**Exhibit B**  
(Orange County Fire Authority, July 24, 1996)



**ORANGE COUNTY FIRE AUTHORITY**  
HAZARDOUS MATERIALS DISCLOSURE OFFICE  
180 South Water St. • Orange, CA 92666-2175 • (714) 744-0463  
Larry J. Holms, Director of Fire Services



July 24, 1996

Mr. Darren W. Stroud  
Office of Planning & Development  
South Coast AQMD  
21865 E. Copley Drive  
Diamond Bar, CA 91765-4182

**SUBJECT: Rule 1113 Amendments -Acetone As A Reducing Agent  
Draft Subsequent Environmental Assessment (SEA)**

Dear Mr. Stroud:

This letter is in response to the draft SEA pertaining to the relative hazards of utilizing Acetone as a substitute reducing agent for Toluene, MEK, Butyl Acetate or Xylene in the formulation of architectural coatings. These comments are based upon the relative hazards of these materials as defined by the 1994 Uniform Fire Code (UFC).

I have reviewed the UFC hazard classifications of these materials and have found that Acetone has identical physical and health hazard classifications when compared to Toluene, MEK and Butyl Acetate. Acetone is classified as a class 1B flammable liquid and as an irritant material. Xylene is classified as a class 1C flammable liquid, irritant and other health hazard material. I have also reviewed the flammable limits range for these four materials and found them to be very similar, with MEK presenting the widest flammable range (1.4 -11.4 %/volume).

Based upon the identified hazard classifications, Acetone would not pose any greater relative physical or health hazard when compared to Toluene, MEK or Butyl Acetate. Acetone does pose a somewhat increased flammability hazard when compared to Xylene. This comparison assumes that the revised formulation of the architectural coatings will allow for an equivalent percentage of Acetone when compared to the other reducing agents.

I would also note that the storage and use of all of these materials are specifically regulated under Articles 79 & 80 of the 1994 Uniform Fire Code (1995 California Fire Code) which has been adopted by the State of California at Title 24, Part 9, CCR. The fire code limits the allowable quantities of these materials for both interior/ exterior storage and use. The fire code also requires various safety control systems and specifies handling methods.

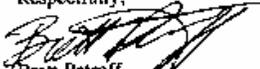
Serving the Cities of Buena Park • Cypress • Dana Point • Irvine • Laguna Hills • Laguna Niguel • Lake Forest • La Habra • Los Alamitos • Mission Viejo • Placentia • San Clemente • San Juan Capistrano • Seal Beach • Stanton • Tustin • Villa Park • Westminster • Yorba Linda and Unincorporated Areas of Orange County

**RESIDENTIAL SPRINKLERS AND SMOKE DETECTORS SAVE LIVES**

**Exhibit B**  
(Orange County Fire Authority, July 24, 1996)

I hope the information provided is useful to the AQMD in developing amendments to rule 1113. If you have any additional questions, I may be contacted at (714) 744-0465.

Respectfully,

  
Brett Petroff  
Senior Fire Safety Specialist

pc: Christine Boyd/ OCFA/ Manager/ Hazardous Materials Disclosure Office  
Laura Blaul/ OCFA/ Deputy Fire Marshal/ Planning & Development

**Comment Letter #2**  
(National Paint and Coatings Association, December 12, 2008)

-----Original Message-----

**From:** Dave Darling [mailto:ddarling@paint.org]  
**Sent:** Friday, December 12, 2008 11:22 AM  
**To:** Barbara Radlein  
**Cc:** Alison Keane  
**Subject:** Rule 1143 CEQAccomments.doc

December 12, 2008

Ms. Barbara Radlein  
c/o Office of Planning, Rule Development, and Area Sources  
South Coast Air Quality Management District (SCAQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765

**RE: SCAQMD Proposed Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents; Notice of Completion of a Draft Environmental Assessment; NPCA Comments**

Dear Ms. Radlein:

The National Paint and Coatings Association (NPCA)<sup>[1]</sup> submits the following comments on the Notice of Completion of a Draft Environmental Assessment for proposed Rule 1143.

**NPCA Recommendations:**

As stated in previous correspondence, NPCA opposes the proposed Rule 1143. Despite these objections, SCAQMD should:

- Abandon the Rule 1143 rulemaking and work with ARB to ensure that one sound and fair final rule is adopted especially since CARB is to release more accurate solvent survey data in 6 weeks, the Office of the State Fire Marshal (OSFM) has expressed concerns with the possible health and safety aspects of this rulemaking and SCAQMD does not have the jurisdictional authority to regulate Paint Thinners and Multi-Purpose solvents.

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<sup>[1]</sup> NPCA is a voluntary, nonprofit trade association representing some 350 manufacturers of paints, coatings, adhesives, sealants, and caulks, raw materials suppliers to the industry, and product distributors. As the preeminent organization representing the coatings industry in the United States, NPCA's primary role is to serve as ally and advocate on legislative, regulatory and judicial issues at the federal, state, and local levels. In addition, NPCA provides members with such services as research and technical information, statistical management information, legal guidance, and community service project support.

- Include a 3 year sell through provision to minimize the environmental and economic impact of disposing of useable products on the shelves as hazardous wastes at great expense to stores, retailers, and manufacturers – especially given the current state of the economy. } 2-2
- Align Rule 1143 with CARB’s Consumer Product rule including definitions, test methods, and calculations and adopt the limits that CARB includes in its Paint Thinner & Multi-purpose Solvent rule that is to be adopted in June 2009 in order to minimize compliance and enforcement confusion, } 2-3
- Set the a 30% VOC content limit for thinning and an alternative reactivity limit of 1.0 MIR (including an allowance for denatured alcohol), } 2-4
- Exempt TBAC, } 2-5
- Provide an exemption for cleaning solvents sold and used exclusively for industrial maintenance coatings provided they are designated and labeled as such, and } 2-6
- Exempt Paint Thinners and Multi-purpose solvents in containers less than or equal to one liter. } 2-7

**Specific Comments**

**Rule 1143 Will Generate Significant Adverse Environmental Impacts**

NPCA believes that the proposed Rule 1143 will generate significant adverse environmental impacts, therefore we do not support the conclusion from the Draft Environmental Assessment. NPCA believes that proposed Rule 1143 will for the reasons outlined in these comments:

- Unnecessarily increase Solid/Hazardous Waste Generation – there is simply no justification for the disposal of useable products as a result of the 1 year sell through period. } 2-8
- Create a significant hazard to the public or environment through the routine transport, use, and disposal of hazardous materials, and/or (Section VIII Hazards and Hazardous Materials) – especially given the health and safety concerns of the Office of the State Fire Marshal (OSFM) with regards to this rulemaking.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Section VIII Hazards and Hazardous Materials) - especially given the health and safety concerns of the Office of the State Fire Marshal (OSFM) with regards to this rulemaking.
- Result in potential increases in ozone formation (Section III Air Quality) } 2-9

## Acetone Health and Safety Concerns

SCAQMD must postpone the adoption of Rule 1143 (until the letter from the OSFM is received) and redo its Draft Environmental Assessment to address the industry and the Office of the State Fire Marshal (OSFM) concerns with regards to acetone health and safety concerns.

2-10

As NPCA has previously commented, the increased risk of flammability with substitution of acetone for other currently available paint thinners (especially mineral spirits). According to the 2004 survey, contractors use about 15 times more mineral spirits than acetone for both cleaning and thinning. Besides the flammability issues, acetone has a very strong odor and very rapid evaporation rate compared to mineral spirits. Thus, NPCA estimates that the proposed 3% rule, would result in a significant increase in acetone use and increased fugitive emissions. It would lower the flashpoint of all thinners and multipurpose solvents to -4°F and require the relabeling of all products as flammable rather than combustible. In addition, it would increase solvent emissions because of acetone's high evaporation rate. South Coast must address these concerns.

2-11

### Concerns from the Office of the State Fire Marshal (OSFM)

It is important to note that the California Air Resources Board (CARB) consulted with the Office of the State Fire Marshal (OSFM) regarding the flammability of Acetone and as CARB testified on the 9<sup>th</sup>, it appears that OSFM has concerns with flammability risks that may be associated with an increased use of Acetone that would likely result from implementation of the proposed 1143 regulation.

2-12

Given the industry and OSFM concerns, SCAQMD needs to wait for the letter from the OSFM and redo its Draft Environmental Assessment should facilitate to wide scale substitution of acetone and should wait for CARB to complete its consultation with OSFM.

2-13

### Draft Environmental Assessment Assumptions are not accurate

NPCA supports LyondellBasell comments on the inaccurate acetone assumptions used in the DEA report, specifically the A relies on NFPA flammability ratings and LEL values to suggest that acetone presents a lower risk than toluene or mineral spirits<sup>[2]</sup>

*“Recognizing that acetone has the lower flash point, it still has a higher explosive limit than most than all the conventional solvents except denatured alcohol. This means that acetone vapors will not cause an explosion unless the vapor concentration exceeds 26,000 ppm. In contrast, toluene vapors can cause an explosion at 13,000 ppm, which poses a much greater risk of explosion. The concentration of mineral spirits or xylene vapors, other conventional solvents, which could cause an explosion, is even lower at 10,000 ppm. Under operating guidelines of working with flammable material under well-ventilated areas, as prescribed by the fire department codes, it would be difficult to achieve concentrated streams of such vapors for unconventional solvents and would be extremely more difficult for acetone.”*

2-14

<sup>[2]</sup> PR 1143 DEA, pp. 2-38 and 2-39

This statement reflects a fundamental misunderstanding of flammability principles and therefore an erroneous conclusion. Acetone has the lowest flash point (-4°F) of any conventional or replacement because it reaches its lower explosive concentration (LEL) at that temperature. In contrast, the flash point of mineral spirits is over 100°F so it is unlikely to reach its LEL except if heated or on hot summer days.

2-14  
Cont'd

The flammability of a solvent is a function of its LEL, UEL, and its vapor pressure, not just its LEL as the DEA implies.

Because of acetone's high vapor pressure, it reaches its lower explosive limit of 2.6 volume % at a much lower temperature (-4°F) than most conventional solvents. The higher flash points of other solvents reflect the fact that, although their lower explosive limit is lower than acetone, it is not reached until much higher temperatures.

2-15

In addition, acetone has a flammability range (LEL-UEL) of 10.2% about twice that of mineral spirits (5.8%), TBAC (5.6%), and toluene (5.7%). Air saturated with acetone above the UEL (which is reached @45°F) can become explosive if it is diluted with air. So ventilating a room saturated with acetone (which occurs at any temperature above 45°F) could result in an explosive atmosphere.

2-16

The high vapor pressure of acetone also contributes to a higher health risk than is acknowledged in the DEA because acetone reaches its OSHA PEL much more readily than solvents with lower volatility. In fact, at ambient temperature (68°F) the Inhalation Hazard (air concentration/OSHA PEL) of acetone (71) is about twice that of TBAC (47) and toluene (32) and >200 times higher than mineral spirits (0.3).

2-17

Again, given the industry and OSFM concerns, SCAQMD needs to redo its Draft Environmental Assessment should facilitate to wide scale substitution of acetone and should wait for CARB to complete its consultation with OSFM.

2-18

### **Substitution of Acetone May Lead to Increased Ozone Formation**

Given the safety and technical feasibility concerns of thinning with acetone, SCAQMD should incorporate reactivity criteria as an option to allow formulators the flexibility of utilizing effective thinning solvents while still providing potentially significant emission reductions. Based on assessment of their relative reactivities, substitution of acetone for mineral spirits not have any beneficial effect on ozone formation, and may even cause more ozone to form given the fact that acetone has a higher evaporation rate than mineral spirits. NPCA therefore supports the comments and advocacy efforts of the American Chemistry Council to include reactivity in Rule 1143.

2-19

### One Year Sell Through Provision

The proposed arbitrary 1 year sell through period is counterproductive and is not consistent with sell through periods in other related rules (e.g., Rule 1113 has a 3 year sell through period). The proposed 1 year sell through period will cause many flammable and combustible paint thinners and multi-purpose solvents to be disposed of as hazardous wastes at significant and unnecessary expense to stores, retailers, and manufacturers and this cost has not been accounted for in the Staff Report, CEQA analysis, nor draft Socioeconomic Report. Assuming that 20% of the paint thinners are not sold in the one year sell through period and using the SCAQMD annual usage estimates of 1.2 million gallons per year – approximately 240,000 gallons of flammable and combustible solvents would need to be removed from shelves and disposed of. Disposal costs alone could be as much as \$10 per gallon or a total of \$2.4 million – not to mention the lost sales revenue, transportation costs, and associated greenhouse gas emissions from collecting and transporting the product. Further, this does not account for any possible environmental impacts associated with products being disposed of improperly.

2-20

In order to limit the arbitrary financial and environmental impacts associated with disposing of product that can no longer be sold – NPCA requests that SCAQMD include a needed 3 year sell through period that is consistent with other related rulemakings.

2-21

### SCAQMD Emission Reductions and Cost Estimates are Not Accurate

SCAQMD claims that Rule 1143 will result in emission reductions of 9.85 tons per day with a cost effectiveness of \$3,643/ton VOC. However, as NPCA has commented before, SCAQMD has already accounted for emission reductions from cleaning solvents regulated under Rule 1171 and for thinning solvents under Rule 1113, particularly since the current limits already account for thinning. Thus, it is unnecessary to obtain further credit under a new rulemaking regulating the same products. In addition, since Rule 1113 has significantly reduced sales of solvent borne coatings since 2006, reliance on 2003 sales data in this rulemaking is misplaced and a new survey is warranted. SCAQMD staff admits their emission reduction estimates are based on outdated 2003 data. As a result of old data SCAQMD is using, the cost estimate could be much, much higher than the current \$3,643 estimate. In fairness to stakeholders, it is not acceptable for SCAQMD to rely on a low cost effectiveness estimate knowing full well that a survey data being collected by CARB will likely increase the cost estimate considerably – possibly to a point where the rule is no longer cost effective. At the December 9<sup>th</sup> Public Consultation meeting CARB commented that results from their recent Solvent Survey will be available in mid January 2009! SCAQMD should at least wait for the new survey data in order to develop representative emission reduction and cost estimates.

2-22

In their November 14, 2008 comments, CARB also expressed their concerns with regard to SCAQMD's emission reduction and cost estimates:

"We are also concerned about the VOC emissions values that appear in the SCAQMD staff report for Rule 1143. SCAQMD staff have acknowledged that emissions were calculated from ARB's consumer products emissions inventory. In the Preliminary Draft Staff Report for Rule 1143, dated October 15, 2008 and October 24, 2008, SCAQMD discusses on page 11, "...the actual emission inventory may be significantly lower than the one estimated above, which was based on the latest CARB survey, already several years old." We have informed SCAQMD staff that the data in ARB's emissions inventory for Thinners and Solvents is out-of-date and will be corrected after we receive data from manufacturers subject to the Survey Update. Without accurate data, SCAQMD may be claiming reductions from emissions that do not exist. We also believe that a portion of the emission reductions SCAQMD claimed previously in the adoption of Rule 1171 did not occur. Recently, David Mallory and Trish Johnson of my staff conducted in-store shelf surveys for Thinners and Solvents sold in hardware and paint stores in 15 major California cities. Through our discussions with store employees and investigation of products available, it was clear that many of the Thinners and Solvents were purchased and used by paint contractors for the primary purpose of paint operations clean up. The sale and purchase of Solvents and Thinners for non-business use in the SCAQMD is not prohibited by rule 1171. However, the use of Thinners and Solvent in excess of 25 grams VOC per liter for cleaning of coatings application equipment conducted as part of a business, is a violation of Rule 1171. In addition, the VOC emissions from the use of these non-compliant products are reflected in ARB's consumer products emissions inventory and therefore included in the 9.85 tons per day emissions reductions claimed in Proposed Rule 1143. Therefore, we believe that SCAQMD may be claiming emission reductions in Proposed Rule 1143 that were already claimed in Rule 1171. If this is the case, then either a portion of the reductions claimed in either Rule 1143 or Rule 1171 would not be State Implementation Plan creditable.

2-23

ARB staff suggests that, at a minimum, SCAQMD reflect the uncertainty of the inventory in the cost-effectiveness and emission benefits calculations, evaluate the suitability of complying alternative thinners for a wide range of specific coatings, acknowledge that in the absence of a LVP-VOC exemption, some identified complying products may not meet the SCAQMD proposed limit, and consider the OSFM's assessment of the potential impacts associated with the increased use of acetone as a paint thinner, when it becomes available."

At the December 9<sup>th</sup> Public Consultation meeting CARB commented that they will have new solvent survey data in 6 weeks (mid-January). It does not make any sense for SCAQMD to make a "rush to judgment" via faulty data in the DEA, SCAQMD should wait until the new survey data is available and redo the DEA with accurate data.

2-24

## Clean-up is not Thinning

The proposed 25 g/l limit is not feasible, especially for paint thinners. Based on the staff report and comments made by District staff at stakeholder meetings there is a misconception that low VOC clean-up solvents available on the market today and the other “low VOC cleaning products” can by default be used for thinning coatings as well. Clean-up solvents are not interchangeable with thinning solvents, as thinning materials need to be chosen such that they are compatible and do not degrade the coating or desired performance characteristics of the coating product. In addition, these coatings carry warranties that may be invalidated if improperly thinned.

2-25

CARB provided similar comments to SCAQMD in their November 14, 2008 comments:

“ ... a VOC limit of 3 percent by weight (or roughly 25 grams per liter (g/L)) for multi-purpose solvents (including products used for paint clean-up) is technically feasible, it has not been demonstrated that the limit is feasible for thinning of all coatings.”

## Problems with Currently Available Low-VOC “thinning” Products

SCAQMD identifies 8 low-VOC products in the DEA<sup>[3]</sup>. It is arbitrary that SCAQMD based the feasibility of Rule 1143 on only 8 products. Further as outlined below, many of these products may not be suitable for thinning. Finally, since SCAQMD did not wait for the new CARB survey data, the District did not provide any information on the ultimate indication of feasibility – have these products been sold in sufficient quantities to indicate that the product is being used successfully as a thinning product.

1. Low VOC Lacquer Thinner - we were unable to comment on the product since we could not obtain an MSDS (even from SCAQMD).
2. Green Envy – water based emulsion – suitability for solvent-based coating thinning is unknown
3. Crown Paint Thinner Next – 30-40% petroleum distillates – may not be compliant with proposed 25 g/l limit
4. SoyLent Gold Degreaser – may not be suitable for thinning since evaporation is too slow and CARB concern that this product may not be compliant since SCAQMD has not exempted LVP materials
5. Deft VOC Exempt IS-256 – since it is 100% PCBTF it may be very expensive and odorous
6. Deft VOC Exempt IS-276 – since it is a 70/30 blend of PCBTF and Acetone – it may be expensive, odorous and flammable
7. Rust-Oleum Exempt Thinner – 100 % acetone – may not be suitable since the evaporation rate is too fast and extremely flammable
8. Carboline Thinner 243E - 50/50 acetone and PCBTF - it may be expensive, odorous and flammable

2-26

<sup>[3]</sup> PR 1143 DEA, page 1-7

**Conclusion**

The Draft Environmental Assessment incorrectly and arbitrarily concludes that proposed Rule 1143 will not generate any significant adverse environmental impacts, given the health & safety concerns and possible increase in ozone formation as a result of substitution with Acetone; the additional hazardous waster generation, possible environmental impacts and costs associated with the proposed arbitrary one year sell through provision; the admitted inaccuracies in the emission reduction and cost effectiveness estimates, and the reluctance of the District to recognize that solvents used for cleanup are not necessarily effective for paint thinning.

2-27

If over the objection of NPCA, SCAQMD continues development of Rule 1143, NPCA recommends SCAQMD:

- Abandon the Rule 1143 rulemaking and work with ARB to ensure that one sound and fair final rule is adopted especially since CARB is to release more accurate solvent survey data in 6 weeks, the Office of the State Fire Marshal (OSFM) has expressed concerns with the possible health and safety aspects of this rulemaking and SCAQMD does not have the jurisdictional authority to regulate Paint Thinners and Multi-Purpose solvents. In addition, spending the time, money and resources of both industry and government to work on Rule 1143, despite the numerous and substantive problems with the rule, while CARB is developing a similar rule is duplicative, wasteful and clearly not commensurate with any environmental benefit, especially in these difficult economic times. Finally, manufacturers and consumers of these products need consistency and uniformity will be faced with differing requirements in California depending on where they manufacture, sell, shop and /or use the products, which will likely lead to widespread compliance and enforcement confusion.

2-28

- Include a 3 year sell through provision to minimize the impact of disposing of products on the shelves as hazardous wastes at great expense to stores, retailers, and manufacturers – especially given the current severe economic conditions,

2-29

- Align Rule 1143 with CARB’s Consumer Product rule including definitions, test methods, and calculations and adopt the limits that CARB includes in its Paint Thinner & Multi-purpose Solvent rule that is to be adopted in June 2009 in order to minimize compliance and enforcement confusion,

2-30

- Set the a 30% VOC content limit for thinning and an alternative reactivity limit of 1.0 MIR (including an allowance for denatured alcohol),

2-31

- Exempt TBAC,

2-32

- Provide an exemption for cleaning solvents sold and used exclusively for industrial maintenance coatings provided they are designated and labeled as such, and

2-33

- Exempt Paint Thinners and Multi-purpose solvents in containers less than or equal to one liter.

2-34

Sincerely,

/s/  
David Darling, P.E.  
Director, Environmental Affairs

/s/  
Alison A. Keane, Esq.  
Counsel, Government Affairs

*\*\* Sent via email \*\**

## Responses to Comment Letter #2

(National Paint and Coatings Association, December 12, 2008)

- 2-1 Control Measure CTS-04 of the 2007 AQMP specifically calls for emission reductions from consumer paint thinners and multi-purpose solvents that are not regulated by CARB. Although California Health and Safety Code §41712 authorizes CARB to regulate certain consumer products, local air districts retain the authority to adopt VOC standards for any consumer product category for which CARB has not already adopted a standard. See California Health and Safety Code § 41712(f). Because CARB has not adopted any rules or regulations that currently address consumer paint thinners and multi-purpose solvents, the SCAQMD has the authority to regulate this category of consumer products. With regard to the opinion that OSFM staff has expressed concerns with PR 1143, this interpretation is inconsistent with OSFM's verbal comments to SCAQMD staff during a conference call on December 12, 2008. See the response to Comment 1-5.
- 2-2 SCAQMD staff disagrees with the commentator's unsubstantiated opinion that a one-year sell-through provision will cause useable products to be disposed of as hazardous waste and that a three-year sell-through provision would minimize the alleged effect. The sell-through provision in PR 1143 will provide the necessary time for retailers to eliminate the inventory of higher-VOC products and allow manufacturers to phase in the lower-VOC compliant products, effective January 1, 2010. Rule 1113 is the only SCAQMD rule with a three-year sell-through provision. However, SCAQMD staff has determined that one year, instead of three years, is a sufficient amount of time for this purpose because past experience with other SCAQMD rules with sell-through provisions, such as Rule 1168 or Rule 1171, have been effective at phasing-out high-VOC product inventories in time frames of one year or less. For this reason, SCAQMD staff revised PR 1143 by increasing the originally proposed six month sell-through provision to a one-year sell-through provision. SCAQMD proposed Rule 1144 has an even shorter, 6-month sell-through provision. Lastly, verbal comments provided by the American Chemistry Council representatives in a meeting with CARB staff and SCAQMD staff on November 12, 2008 requested a one-year sell through period, in place of the six-month period originally proposed in PR 1143.
- 2-3 SCAQMD staff recognizes that CARB staff is currently preparing a proposal for a statewide regulation for thinners and solvents, with a scheduled public hearing date of June 2009<sup>20</sup>. However, CARB staff has not provided any draft rule language or discussed potential rule implementation dates with SCAQMD staff. Additionally, because CARB has not yet released any specific information about a potential rule regulating this category, it is unclear whether or not a public hearing date of June 2009 is realistic. As a result, SCAQMD staff believes that an expedited rulemaking is necessary to implement CTS-04 in a timely manner. PR 1143 seeks to reduce VOC emissions by 9.75 tons per day, a 95.7 percent

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<sup>20</sup> Letter from Janette M. Brooks, CARB to Don Hopps, SCAQMD; November 14, 2008.

reduction from the current inventory of 10.2 tons per day. SCAQMD staff is working closely with CARB and plans to make available all supporting documents to CARB, as SCAQMD staff has done for the last two iterations of the Suggested Control Measure for Architectural Coatings.

- 2-4 In concept, SCAQMD staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds that have a relatively low MIR value. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. SCAQMD staff plans to work closely with CARB, USEPA, the American Chemistry Council (ACC), other industry members and the public to address these issues. Further the Governing Board package for PR 1143 will include a resolution that will commit SCAQMD staff to evaluate the feasibility of a reactivity-based approach for thinners. Further, based on comments received, SCAQMD staff has included an interim VOC limit for consumer paint thinners and multi-purpose solvents of 300 g/L, effective January 1, 2010 and a final limit of 25 g/L, effective January 1, 2011.
- 2-5 While TBAC has a low photochemical reactivity and industry considers it to have other desirable physical and chemical properties; SCAQMD staff is concerned about its potential toxicity, especially the toxicity of its metabolites. Specifically, TBAC has the potential to form a metabolite called tert-butyl alcohol (TBA) which has been shown to cause tumors in male rats (kidneys) and female mice (thyroid). In the past few years, the SCAQMD has adopted very carefully crafted, limited exemptions for TBAC for primers in auto body coating operations and for industrial maintenance coatings used in architectural coating operations. These specific operations, for the most part, are industrial operations where workers applying TBAC-containing coatings wear personal protective equipment including respirators. SCAQMD staff's intent was to limit the use of TBAC, as demonstrated in the supporting staff reports, the potential risk to users, as well as receptors. Since OEHHA's concerns regarding the potential toxicity of TBA persist, and alternative, less toxic products are currently available and in use for more than ten years, the SCAQMD does not have any plans to include TBAC as an exempt alternative solvent for PR 1143. See also the response to Comment 1-1.
- 2-6 PR 1143 has been revised to include an exemption in subparagraph (j)(1)(C) for the sale and use of thinners specifically designated to thin industrial maintenance (IM) coatings. In addition, PR 1143 contains an exemption for the sale and use of solvents used exclusively for the cleaning of application equipment when used to apply polyaspartic and polyurea coatings. Previous studies have shown that available, compliant technology works well for the cleaning of most IM coatings, including but not limited to zinc-, epoxy-, and urethane-based technologies, but additional research is necessary.

2-7 Although a small container exemption exists in the architectural coating rule (Rule 1113), this exemption was included specifically for the repair and maintenance of existing coated substrates. However, a small container exemption is not appropriated for PR 1143 because the use of ultra-low VOC solvents for coating clean-up operations and other cleaning operations has been well established in the district. Thus, SCAQMD staff believes that since ample technologies with multiple compliant products are available to the consumer, a small container exemption is not necessary for inclusion in PR 1143. See also the response to Comment 1-6.

2-8 The commentator's suggestion that the one-year sell through period will generate significant adverse solid/hazardous waste impacts due to the disposal of any unsold products is not supported by any evidence. The one-year sell-through provision will allow the necessary time for retailers and distributors to plan ahead and eliminate their inventory of higher-VOC products and phase-in the lower-VOC compliant products, effective January 1, 2010. If PR 1143 is adopted in March 2009, there will be 10 months before the effective date of January 1, 2010 for the manufacturers, distributors and retailers to stop manufacturing the higher-VOC products and begin manufacturing the lower-VOC compliant products. Further, the retailers and distributors would have an additional 12 months, until January 1, 2011 to sell the remaining inventory provided that it was manufactured prior to January 1, 2010.

For any manufacturer who continues to manufacture and supply high-VOC products until the last possible day allowed by the rule, they may risk having some unsold non-compliant products in their inventory. However, because they still have economic value, the unsold inventory of the high-VOC products could be re-distributed outside the district to San Diego and Ventura counties, for example, instead of being disposed of as hazardous waste. Actions that could potentially result in non-compliance with the proposed project resulting in disposal of non-compliant inventory are considered to be speculative, and, therefore, not reasonably foreseeable. CEQA Guidelines §15145 states that if a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact. Therefore, the possibility that non-compliant products would be disposed of at a landfill rather than re-distributed to areas outside the district is considered to be speculative and is not considered further. See also the response to Comment 2-2.

2-9 The commentator's suggestion that PR 1143 will result in potential increases in ozone formation is speculative and unsubstantiated. On the contrary, the air quality analysis in the Draft EA demonstrates that PR 1143 will provide substantial reductions in VOC emissions and, therefore, a reduction in ozone formation.

- 2-10 SCAQMD staff has consulted with representatives from both local and state fire departments regarding the flammability, safety and health concerns about acetone. (See Exhibits A and B as part of the responses to Comment Letter #1.) While the fire department representatives acknowledged that acetone has a slight increase in the flammability hazard, they also emphasized that all of the commercially available solvents associated with PR 1143 should be used with extreme caution. SCAQMD staff has reviewed and identified the availability of various compliant technologies for consumer paint thinners and multi-purpose solvents and has adequately analyzed the safety issues associated with flammability of acetone. Further, SCAQMD staff has provided a copy of the proposed rule, the draft staff report and Draft EA to the California Office of the State Fire Marshal (OSFM). A conference call with OSFM staff indicated that OSFM will only submit comments if they have concerns with PR 1143. To date, no comments have been submitted by OSFM relative to the analysis of acetone. Therefore, there is no need to postpone the adoption of PR 1143 or re-circulate the DEA. See also the response to Comment 1-5.
- 2-11 SCAQMD staff has consulted with local fire departments concerning the flammability, safety and health concerns of acetone. Staff was informed that under the Uniform Fire Code solvents such as acetone, butyl acetate, MEK, and toluene and xylene are all Class I flammability liquids. Furthermore, xylene, not acetone, presents the highest health hazard of the solvents listed. The local fire departments acknowledge that acetone did have a slight increase with the flammability hazard but stressed that all solvents associated with PR 1143 should be used with extreme caution. SCAQMD staff has reviewed and identified the availability of various compliant technologies other than acetone for consumer paint thinners and multi-purpose solvents and has analyzed safety issues associated with flammability of acetone. See also the responses to Comments 1-8, 1-9, and 1-10.
- 2-12 SCAQMD staff held a conference call on December 12, 2008 and discussed potential concerns with an increase in the use of acetone with OSFM staff. OSFM staff informed SCAQMD staff that given the narrow scope of PR 1143, and the possible increase in acetone usage, it was not a major concern for them. Furthermore, based on similar SCAQMD rules, one in particular, Rule 1171 – Solvent Cleaning Operations, the increase use of acetone and acetone-based products has not caused any safety or fire issues. See also the responses to Comments 1-5 and 2-10.
- 2-13 With regard to conferring with OSFM, see the responses to Comments 1-5, 2-10, and 2-12.
- 2-14 With regard to the flammability of acetone, see the responses to Comments 1-9 and 1-10.

- 2-15 With regard to how flammability is determined, see the responses to Comments 1-9 and 1-10.
- 2-16 For a comparison of flammability ranges, see the responses to Comments 1-9 and 1-10. With regard to accidents involving acetone, see the response to Comment 1-11.
- 2-17 With regard to the health risks of acetone, see the response to Comment 1-12.
- 2-18 With regard to industry concerns, see the responses to Comments 1-9 and 1-12. With regard to the OSFM, see the response to Comment 1-5. Finally, SCAQMD staff strongly disagrees with the opinion expressed in this comment that the Draft EA needs to be re-written and re-circulated. The Draft EA comprehensively identifies potential risks associated with acetone use as well as other replacement and conventional solvents.
- 2-19 With regard to the opinion expressed in this comment that PR 1143 will increase ozone formation, see the response to Comment 2-4.
- 2-20 The 20 percent is an assumption made by the commentator which is not supported by any evidence or data. SCAQMD staff believes that the revisions to the PR 1143 will allow manufacturers well over two years to comply with PR 1143. With regard to the sell-through provision and potential impacts from the sell-through provision, see the responses to Comments 2-2 and 2-8.
- 2-21 SCAQMD staff disagrees with the opinion expressed in this comment that a three-year sell-through period is necessary for PR 1143. See the responses to Comments 2-2 and 2-8.
- 2-22 The emissions inventory included in the Staff Report for PR 1143 accounts for the reduction in VOC emissions, as claimed in Rule 1171 – Solvent Cleaning. While the arguments presented may have an impact on the inventory, until a new survey is conducted, SCAQMD staff is obligated to use the inventory estimate based on the latest CARB data used in the 2007 AQMP. SCAQMD staff is committed to adjusting the inventory once more updated survey information becomes available. To date, however, CARB staff has not updated the survey. It should be noted that regardless of the size of the inventory, the estimated relative percent reduction expected should remain the same when migrating from conventional solvents to alternative compliant products. Lastly, as of the deadline for submitting survey data, less than half of the manufacturers had submitted information to CARB. Based on past efforts made by CARB relative to consumer products and architectural coatings, it has taken up to two years for CARB to complete the quality assurance/quality control process and publish final survey data. Therefore, because SCAQMD staff is uncertain about whether CARB will receive the sufficient survey data and when the survey results will be published, the proposed adoption of PR 1143 will remain on the Governing Board calendar.

With regard to the cost estimate for PR 1143, SCAQMD staff believes that the incremental cost estimate is appropriate regardless of CARB's final inventory because the ratio between the cost of the conventional solvents and the cost of the potential replacement solvent will be constant and proportionate to the amount of potential VOC reductions, whatever they may be. In other words, with less or more VOC emissions and potential reductions, the cost ratio is expected to remain about the same.

- 2-23 With regard to the CARB's concerns, see the response to Comment 2-22.
- 2-24 With regard to the availability of CARB's survey data, see the response to Comment 2-22.
- 2-25 The three percent limit is feasible for most, if not all, substitutes for consumer paint thinners and multi-purpose solvents. SCAQMD staff has revised the VOC limits in PR 1143 to 300 g/L effective January 1, 2010, and 25 g/L effective January 1, 2011. For thinners that already comply with the 25 g/L limit, manufacturers have been able to create formulations that have the same evaporation rate as conventional high-VOC paint thinners and lacquer thinners. However, because SCAQMD staff recognizes the need for specific thinners and reducers recommended for use with certain IM coatings, PR 1143 now includes an exemption that will allow the sale and use of specific thinners to be used for thinning IM coatings. Furthermore, SCAQMD staff is committed to continue evaluating a reactivity-based ozone control approach for thinners. See also the response to Comment 1-6.
- 2-26 SCAQMD staff has reviewed and identified the availability of various compliant technologies for paint thinners and multi-purpose solvents. Table 4 of the draft Staff Report for PR 1143 contains a list that identifies specific products that would comply with PR 1143. Since the publication of this list, the manufacturer of the product "Crown Paint Thinner NEXT" informed SCAQMD staff that their thinner contained 30 to 40 percent petroleum distillates, which was inconsistent with the MSDS that indicated it had a VOC content less than 25 g/L. While it does not comply with the 25 g/L VOC limit, the Crown Paint Thinner NEXT would comply with the interim VOC limit of 300 g/L, effective January 1, 2010. Similarly, WM Barr's KS Pro would also comply with the interim VOC limit, but not the final VOC limit. However, both of these products are included in Table 4 of the draft Staff Report with a footnote identifying these two products as compliant products with the interim VOC limit. The low-VOC lacquer thinner is currently sold under the Crown name and is called Low VOC Lacquer Thinner LVLT01 and can be easily found online. This product was formulated by Bortz Distributing.

In addition, SCAQMD staff has identified several soy-based products that would comply with the 25 g/L VOC limit without a need for the low vapor pressure

solvent exemption provided by CARB. Several of these compliant products have been certified by the SCAQMD's CAS certification program. Based on discussions with developers of soy-based technology, there are products available that contain a blend of soy with exempt solvents and that are suitable for a full spectrum of cleaning and thinning uses.

2-27 With regard to the issues raised in this comment, see the responses to Comments 1-5, 1-8, 1-18, 2-2, 2-3, 2-4, 2-8, 2-9, 2-10, 2-11, 2-12, 2-21, 2-22, and 2-26.

2-28 Control Measure CTS-04 of the 2007 AQMP specifically calls for emission reductions from consumer paint thinners and multi-purpose solvents that are not regulated by CARB. Although California Health and Safety Code §41712 authorizes CARB to regulate certain consumer products, local air districts retain the authority to adopt VOC standards for any consumer product category for which CARB has not already adopted a standard. *See* Cal. Health & Safety Code §41712(f). Because CARB has not adopted any rules or regulations that currently address consumer paint thinners and multi-purpose solvents, the SCAQMD has the authority to regulate this category of consumer products.

SCAQMD staff will be moving forward to adopt PR 1143. The South Coast Air Basin continues to experience the nation's worst air quality and looks forward to achieving the maximum feasible emissions reductions. PR 1143 is estimated to reduce VOC emissions by 9.75 tons per day which represents a significant reduction of VOC emissions for the sixteen million Southern Californians that reside in the South Coast Air Basin. With regard to the OSFM, see also the responses to Comments 1-5 and 1-18. With regard to working with CARB, see the responses to Comments 2-1, 2-3 and 2-22.

2-29 With regard to the sell-through provision, see the responses to Comments 2-2, 2-8, 2-20 and 2-21.

2-30 With regard to working with CARB or their regulation, see the responses to Comments 2-3 and 2-8.

2-31 With regard to using a reactivity-based approach for PR 1143, see the response to Comment 2-4.

2-32 With regard to exempting TBAC, see the responses to Comments 1-1 and 2-5.

2-33 With regard to exempting cleaning solvents used for industrial maintenance coatings, see the response to Comment 2-6.

2-34 With regard to a small container exemption, see the response to Comment 2-7.

**Comment Letter #3**  
(American Chemistry Council, December 12, 2008)



December 12, 2008

**Via E-mail**

Barbara Radlein  
c/o Office of Planning, Rule Development and Area Sources  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
Email: bradlein@aqmd.gov

**Re: Comments on the Draft Environmental Assessment for the South Coast Air Quality Management District Consumer Paint Thinners and Multi-Purpose Solvents Proposed Rule**

Dear Ms. Radlein:

The Solvents Industry Group ("SIG")<sup>1</sup> of the American Chemistry Council is pleased to submit the following comments on the Draft Environmental Assessment ("EA") for the South Coast Air Quality Management District's ("South Coast" or the "District") proposed Rule 1143 ("PR 1143"), *Consumer Paint Thinners and Multi-Purpose Solvents*. SIG's member companies would be affected by PR 1143 and thus have a strong interest in the rule's development and implementation. The following comments briefly address SIG's concerns with the Draft EA and underlying rule for which it was developed. Additional comments regarding PR 1143 and the Draft EA will be submitted to Mr. Don Hopps prior to next week's December 16, 2008 deadline.

SIG supports the goal of improved air quality through effective and efficient regulation of tropospheric ozone-forming compounds in consumer products. It cannot, however, support PR 1143 because South Coast lacks the information necessary to craft an informed regulation. Indeed, South Coast readily admits that PR 1143 is based on outdated market survey data.<sup>2</sup> Among other things, it does not know with reasonable certainty the total current VOC emissions in the District from consumer paint thinners and multi-purpose solvents ("Thinners and Solvents"), making predictions for air quality

<sup>1</sup> SIG represents major U.S. manufacturers of hydrocarbon and oxygenated solvents and was formed to address health, safety, and environmental issues affecting both the producers and users of those materials. Current members of SIG include: The Dow Chemical Company, ExxonMobil Chemical Company, Shell Chemical LP, Eastman Chemical Company, and Sasol Chemicals North America, LLC.

<sup>2</sup> See South Coast Air Quality Management District ("SCAQMD"), *Preliminary Draft Staff Report For Proposed Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents*, at 11 (Oct. 15, 2008), available at <http://www.aqmd.gov/rules/proposed/1143/DSR-PR1143.pdf>.

3-1

SCAQMD Comments EA PR 1143  
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improvements in the District from PR 1143 suspect. Nor does it know the current formulation data for those products and how those products might be reformulated to meet South Coast's proposed ultra-low mass-based VOC standard. Without this information, South Coast cannot know whether its proposed standard is technologically and commercially feasible.

3-1  
Cont'd

Because the flaws inherent in the development of the proposed rule necessarily carry over to and taint the Draft EA, the Draft EA by definition is not supported by substantial evidence as required by the California Environmental Quality Act ("CEQA"), Cal. Pub. Res. Code §§ 21000 *et seq.* CEQA requires agencies to determine whether their proposed actions, including proposed rules and regulations, will "have a significant effect on the environment based on substantial evidence in light of the whole record."<sup>3</sup> CEQA further clarifies that "[a]rgument, speculation, unsubstantiated opinion or narrative, [or] evidence which is clearly inaccurate or erroneous . . . is *not* substantial evidence."<sup>4</sup> Any determination that a proposed action will not have a significant effect on the environment must be supported by substantial evidence.<sup>5</sup> South Coast's reliance on admittedly outdated Thinners and Solvents market survey data to develop PR 1143 and in conducting the EA undermine the credibility of both.

3-2

As CARB recently informed South Coast, CARB is only weeks away from releasing new data pursuant to an updated market survey it circulated to industry on November 4, 2008. South Coast should at least delay issuance of PR 1143 until it can incorporate the results of that CARB survey, as regulation based on inaccurate data is one of the hallmarks of arbitrary agency action.<sup>6</sup> This few week delay would more than be offset by the improvements to the rule that would result from reliance on more accurate survey data. Without it, the emission reduction calculations and benefits associated with those reductions identified in the Draft EA are suspect.

3-3

SIG is also concerned that South Coast's analysis inappropriately dismisses potentially significant safety concerns associated with PR 1143. South Coast assumes that Thinner and Solvent product formulators will be able to meet its proposed ultra-low

3-4

<sup>3</sup> Cal. Pub. Res. Code § 21082.2(a).

<sup>4</sup> *Id.* § 21082.2(c) (emphasis added).

<sup>5</sup> *Id.* § 21080(c).

<sup>6</sup> See, e.g., *Berkeley Keep Jets Over the Bay v. Board of Port Comm'rs of the City of Oakland*, 111 Cal.Rptr.2d 598, 615 (Cal. Ct. App. 2001) (rejecting environmental impact report because it relied on outdated aircraft emissions data from CARB despite CARB's warning that new information was available, stating: "Where comments from responsible experts or sister agencies disclose new or conflicting data or opinions that cause concern that the agency may not have fully evaluated the project and its alternatives, these comments may not simply be ignored."); see also *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 864 P.2d 502, 513 (Cal. 1993) ("In reviewing an agency's determination, finding or decision under CEQA, a court must determine whether the agency prejudicially abused its discretion. Abuse of discretion is established . . . if the determination or decision is not supported by substantial evidence.").

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mass-based standards by substituting commonly used VOCs with alternative compounds. The Draft EA concludes that there are no greater flammability-based risks associated with the presumed substitutions than the existing product formulations. At best, this conclusion is premature. For example, SIG questions South Coast's statement that "reformulating consumer paint thinners and multi-purpose solvents is not expected to increase the flammability relative to the flammability of conventionally used consumer paint thinners and multi-purpose solvents . . . ." <sup>7</sup> As a result, "implementing PR 1143 is not expected to increase the number of fires associated with reformulated products compared to the existing setting." <sup>8</sup> This conclusion is inconsistent with the information presented in Table 2-6 on page 2-37 of the Draft EA, which shows the relative flash points of South Coast's presumed replacement solvents. South Coast readily admits that flash point "is the primary basis for the flammability classification." <sup>9</sup> SIG submits that South Coast has too quickly dismissed the importance of flash point in its no increased hazard determination, and should seek the expert opinion of the State Fire Marshall as appropriate substantial evidence in support of its findings. In fact, CARB believes this issue to be important enough that it is currently consulting with the Office of the State Fire Marshal. <sup>10</sup> According to CARB, the State Fire Marshall's preliminary response is that it is indeed concerned with South Coast's proposal.

3-4  
Cont'd

In addition, South Coast's reliance on lower explosive limits misses the point. <sup>11</sup> Adverse risk in this setting is a combination of two factors: (1) lower explosive limits and (2) vapor pressure. While South Coast's presumed replacement solvents may have a relatively lower explosive limits than most conventional solvents in this product category, they may also have higher vapor pressures and can reach the relative lower explosive limits quicker than can solvents with lower vapor pressures. Thus, South Coast should analyze these factors together prior to making its no increased hazard determination.

3-5

Finally, SIG agrees with the Draft EA's conclusions that VOC emissions from solvents and thinners likely do not significantly increase Secondary Organic Aerosol ("SOA") yields or contribute to PM<sub>2.5</sub> concentrations. <sup>12</sup> We think this data shows that arguments that reactivity-based standards could increase SOA yields are without merit.

3-6

<sup>7</sup> See, e.g., SCAQMD, *Notice of Completion of Draft Environmental Assessment for Proposed Rule 1143 – Consumer Paint Thinners and Multi-Purpose Solvents*, at 2-53 (Nov. 12, 2008), available at <http://www.aqmd.gov/ceqa/documents/2008/aqmd/draftEA/1143DEA.pdf> ("Draft EA").

<sup>8</sup> *Id.* at 2-54.

<sup>9</sup> *Id.* at 2-37.

<sup>10</sup> See, e.g., Letter from Janette M. Brooks, Chief Air Quality Measures Branch at CARB, to Mr. Don Hopps, Air Quality Specialist at SCAQMD, at 1 (Nov. 14, 2008).

<sup>11</sup> See *Draft EA*, at 2-38 to 2-39.

<sup>12</sup> *Id.* at Tbl. 2-5.



SCAQMD Comments EA PR 1143  
December 12, 2008

SIG appreciates the time and efforts of the South Coast PR 1143 team, including its willingness to meet with members of SIG over the past several weeks. SIG remains committed to working with South Coast on these issues and looks forward to continued dialogue in this area. If you have any questions, please contact me at (703) 741-5612 or [Leslie\\_Berry@americanchemistry.com](mailto:Leslie_Berry@americanchemistry.com).

Sincerely,



Leslie Berry  
Solvent Industry Group Panel Manager,  
Chemical Products and Technology

cc: Don Hopps, SCAQMD  
([dhopps@aqmd.gov](mailto:dhopps@aqmd.gov))

**Responses to Comment Letter #3**  
(American Chemistry Council, December 12, 2008)

- 3-1 With regard to lacking the necessary data to develop PR 1143, see the response to Comment 2-22. With regard to information on reformulated products, see the responses to Comments 1-6 and 1-7.
- 3-2 SCAQMD staff strongly disagrees with the opinion expressed in this comment that the Draft EA is not based on substantial evidence. The analysis of environmental impacts is comprehensive and based on the most accurate data currently available from a wide variety of sources. With regard to the data used to develop PR 1143, see the responses to Comments 2-3, 2-10, 2-22 and 2-26.
- 3-3 With regard to CARB's survey, see the responses to Comment 2-3 and 2-22.
- 3-4 With regard to flammability issues and contacting the OSFM, see the response to Comment 1-5. See also the responses to Comments 1-8 and 2-11.
- 3-5 The SCAQMD Governing Board has previously adopted other SCAQMD rules (Rules 1113, 1122, 1136, 1171) that increased the use of acetone. Further, SCAQMD staff has extensively analyzed the potential flammability impacts in the environmental assessments prepared for each of these rules, including consultations with local fire agencies that concluded that acetone does not pose a greater risk than other conventional multi-purpose solvents in use today, including lacquer thinners, MEK, xylene, et cetera. Nonetheless, SCAQMD staff is continuing to work with CARB and consult the OSFM concerning the flammability issues with acetone as well as all conventional and replacement solvents. See also the responses to Comments 1-5, 2-10, 2-11, and 2-12.
- 3-6 The results in Table 2-5 of the Draft EA do not fully support the argument that Secondary Organic Aerosols (SOA) or PM<sub>2.5</sub> levels would increase if a reactivity-based approach was implemented. However, the preliminary qualitative assessments for SOA formation show that mineral spirits used in solvent-based paints and paint thinners have greater potential for SOA formation than solvents (e.g., ethylene- and propylene-glycol, and texanol) found in water-based paints. Therefore, a quantitative analysis prior to a reactivity-based ozone control strategy may be helpful in fully analyzing this issue. Furthermore, for an environmental assessment, the SOA formation potential of exempt, aqueous and bio-based technologies would also need to be analyzed to determine potential impacts. However, SCAQMD staff is committed to continue evaluating a reactivity-based ozone control approach for thinners. See also the response to Comment 2-4.

**Comment Letter #4**  
(WM Barr, December 30, 2008)



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SOUTH COAST AQMD  
CLERK OF THE BOARDS

Draft Staff Report And Environmental Assessment for Proposed Rule 1143 – Consumer  
Paint Thinners and Multi-Purpose Solvents

WM Barr & Company, Inc. ("Barr") is 100% employee owned and operated. We are located in Memphis, Tennessee, and have been in business since 1946. Barr is the largest retail supplier of solvents in the nation. Our products are distributed nationally including into the South Coast Air Quality Management District (SCAQMD). Barr has been cooperatively working with SCAQMD and the California Air Resources Board (CARB) to provide information on our products in an attempt to develop a feasible rule. The solvents we supply include Mineral Spirits, Paint Thinner and Acetone as well as many others. For this reason our data and comments are not biased toward one solvent over the other.

Our activities with SCAQMD and CARB have been to actively participate in Public workshops and consultation meetings. Barr has presented company data to both the SCAQMD and CARB on the issue of Reactivity. In addition Barr developed and funded a retailer survey to gather information on the use of our products that both agencies were lacking so they could better understand how solvents and thinners are used, and by whom.

4-1

Barr cannot support Proposed Rule 1143 because the rule has many inherent flaws. The two significant issues are the substantial fire hazards consumers will be subjected to and increased ozone production the rule will cause. Other issues include technical feasibility, discrepancies in the inventory, inconsistencies with current state regulations, timing issues and a lack of a science based reactivity approach.

As a national supplier of solvent and thinner products, we are very concerned with any regulation that will increase the fire hazards faced by consumers. We are also concerned with duplicate regulation, or worse yet, differing and inconsistent regulations. Therefore, we urge the district to delay their regulation and work with CARB to develop a feasible statewide regulation.

The following are comments on the current Draft Staff Report and Environmental Assessment on Proposed Rule 143 (PR1143).

**I. Executive Summary**

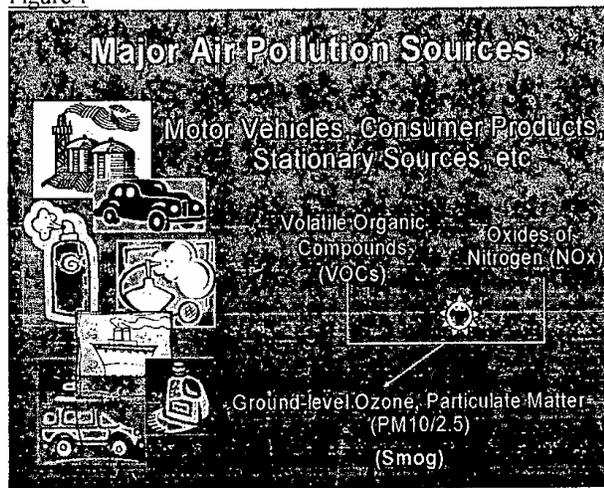
The California Air Resources Board (CARB) has been working on Multipurpose Solvents for over a decade. CARB has delayed its rulemaking on these product categories due to a concern over the increased fire hazards Rule 1143 would cause and an inventory adjustment. (CARB Comments December 19, 2008.). For these reasons South Coast Air Quality Management District (SCAQMD) should delay Rule 1143.

4-2

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The purpose of the Air Quality Management Plan (AQMP) is to reduce ozone levels to attain compliance with Federal and State Ozone standards. (SCAQMD Resolution No.07-9.) VOC are regulated because they are the precursor to ground-level ozone. Ground-level ozone, which is a major component of "smog," is formed in the atmosphere by reactions of VOC and oxides of nitrogen in the presence of sunlight. The formation of ground-level ozone is a complex process that is affected by many variables. Figure 1 depicts this reaction.

Figure 1



4-3

VOC's are defined as follows: "Volatile Organic Compound (VOC)" means any compound containing at least one atom of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, and excluding the following:

- (A) methane,
- methylene chloride (dichloromethane)
- 1,1,1-trichloroethane (methyl chloroform),
- trichlorofluoromethane (CFC-11),
- dichlorodifluoromethane (CFC-12),
- 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113),
- 1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114),
- chloropentafluoroethane (CFC-115),
- chlorodifluoromethane (HCFC-22),
- 1,1,1-trifluoro-2,2-dichloroethane (HCFC-123),
- 1,1-dichloro-1-fluoroethane (HCFC-141b),
- 1-chloro-1,1-difluoroethane (HCFC-142b),
- 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),
- trifluoromethane (HFC-23),
- 1,1,2,2-tetrafluoroethane (HFC-134),
- 1,1,1,2-tetrafluoroethane (HFC-134a),
- pentafluoroethane (HFC-125)

1,1,1-trifluoroethane (HFC-143a),  
1,1-difluoroethane (HFC-152a),  
cyclic, branched, or linear completely methylated siloxanes, the following  
classes of perfluorocarbons:

1. cyclic, branched, or linear, completely fluorinated alkanes,
2. cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
3. cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
4. sulfur-containing perfluorocarbons with no unsaturations and with the sulfur bonds to carbon and fluorine, and

- (B) the following low-reactive organic compounds which have been exempted by the U.S. EPA:
- acetone,
  - ethane,
  - methyl acetate,
  - parachlorobenzotrifluoride (1-chloro-1-trifluoromethyl benzene),
  - perchloroethylene (tetrachloroethylene).

Even though compounds under section (B) above are exempted, these compounds contribute to the production of ozone. If not evaluated properly the release of these compounds in large amounts can contribute greatly to ozone production as will be discussed later in this document.

It has been known for several decades that individual VOCs vary in the amount of ozone potentially formed once emitted into the air. This concept is referred to as "reactivity." The science of reactivity allows regulators to more effectively control VOC emissions by targeting reductions from VOCs that have a higher potential to form ozone.

The science of photochemical reactivity, or reactivity, has been evolving and expanding for several decades. Beginning in 1952, it was discovered that different organic compounds have different potentials to form ozone. The formation of ozone involves complex chemical interactions. It was discovered that ozone is formed when VOCs react with oxides of nitrogen, or NO<sub>x</sub> in the air. Within these interactions, it was discovered that VOCs differ in their abilities to form ozone. The variability in ozone-formation potentials was later verified by smog chamber experiments. In smog chamber studies a known amount of a VOC is injected into an experimental chamber under conditions that would generate the maximum amount of ozone. The reaction products of the chemical reactions and their amounts are measured and analyzed to help understand the chemical reaction rate and mechanism by which the VOC reacts. These smog chamber experiments yielded important information on the chemistry of VOCs. To account for the differences in the VOCs' abilities to form ozone, reactivity scales were developed. The United States Environmental Protection Agency (U.S. EPA), as early as 1977,

4-3  
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recognized the variability of VOCs ozone-forming potential and created a two-class reactivity scale for the regulatory control of VOCs: “negligibly reactive” and “reactive.” This science has been developed to include a scale to describe a potential to emit ozone/per compound. This scale is called Maximum Incremental Reactivity (MIR). This MIR approach to regulation provides more flexibility to manufacturers and could lead to a more effective and cost efficient ozone control strategy. CARB recognized this and in June of 2000, it adopted a regulation on consumer products (aerosol coatings) using the concept of Reactivity.

In the Executive Summary for the adoption of that rule CARB wrote:

“To reduce excess ozone concentrations in non-attainment areas, control of ozone precursors such as volatile organic compounds (VOCs) and oxides of nitrogen (NOx) is needed. As part of California’s abatement strategy, we have been successfully implementing mass-based VOC emission controls for aerosol coating products. To further refine the current regulatory approach, in this rulemaking the Air Resources Board (ARB) staff is recommending using photochemical reactivity as the basis for regulating emissions from aerosol coatings.

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The proposed amendments presented here recognize that each VOC has a different ability to induce ambient ozone in the air once emitted. This concept is known as photochemical reactivity. By understanding the differences in VOCs’ potentials for form ozone, and by using that knowledge in regulatory applications, a more effective and cost efficient control strategy can be established that, rather than limiting the total mass of VOCs, limits the amount of ozone produced by the VOCs. We believe this control approach has the potential to provide more flexibility to manufacturers, at less cost than traditional mass-based VOC controls, while achieving equivalent or greater air quality benefits.”

Barr has evaluated this scientific approach to this regulation. and developed a reactivity based proposal for Proposed Rule 143. In the chart below are the current sales percentage of each solvent with the current MIR value and a proposed MIR value. This proposal represents a 63% reduction in ozone. With Barr being the largest and most representative supplier, this reduction is representative of the industry as a whole. Using this approach there would be technically feasible products available to consumers without an increased fire hazard. In addition, reactivity reductions are actual ozone reductions, unlike mass reduction, which can vary with the degree of reactivity of the solvents used.

4-4

PRODUCTS	Actual MIR Content	% of Total Barr Sales	Proposed MIR Limit	% Category Reduction
ACETONE	0.43	18.9	0.43	0
DENATURED ALCOHOL	1.59	6.1	1.15	28
LACQUER THINNER	2.00	25.6	1.00	50
MEK	1.48	1.1	1.00	100
ODORLESS MIN SPIRITS	0.91	7.4	1.00	0
PAINT THINNER	2.02	38.7	0.30	85
TURPATINE	4.11	0.1	1.00	100
TOLUENE	3.97	0.1	1.00	100
TURPENTINE	3.78	0.3	1.00	100
VM&P NAPHTHA	1.64	0.5	1.00	100
XYLOL	7.48	1.2	1.00	100
<b>TOTAL</b>		<b>100.0</b>		
Calculated ozone Reduction =	<b>63.06%</b>			

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On Page 1, the report states that this rule relies on carry over technology from Rule 1171. However, no where in the document does it state that this low and zero VOC technology is actually working for Rule 1171. Pursuant to Rule 1171 contractors are to use 25 g/l product for cleanup, but from our survey most, 88% admitted to using conventional Paint Thinner for clean up. The reason for this mass non-compliance is that alternative low VOC products do not work. Contractors are experienced and knowledgeable people who will use products that work. Staff states that the technology for 1171 will be used to comply with 1143. Obviously the technology is not working for 1171 and will not work for 1143. Additionally, Rule 1171 only regulates the use of products for cleanup of coatings application equipment and pre-cleaning before coating. It does not in any way control thinning of coatings or provide evidence that functional alternate thinners exist. Our survey found that thinning is still a major part of the use of these products, most notably Paint Thinner.

4-5

II. Background

On page two, the report states that Paint Thinners and Multipurpose Solvents work well for cleaning grease and oil. Any products that claim to remove these two contaminants are not subject to this rule. These types of product are subject to the CARB rule for general purpose degreasers.

4-6

On page two and three the Clean Air Solvent (CAS) program is detailed. Criteria number 3 for the CAS program states that the reactivity cannot be higher than toluene. The reactivity of toluene per the CARB reactivity rule is 3:97. This reactivity is more than four times the reactivity of mineral spirits which is approximately 0.80 and nine times higher than the exempt compound acetone. Therefore, compounds certified by this program could contribute significantly to the creation of ozone.

4-7

On page three the report states that the staff found 162 products that are certified under (CAS) that could be used as multipurpose solvents and some can be used to thin coatings.

4-8

However, in reviewing these products under Appendix B, 65 of the products listed would not be subject to the rule. The products are the following.

- Organic Cleaner/Degreaser Military Strength
- Enviro-Power Grease & Tar Remover
- Enviro-Power Industrial Cleaner
- Jet Wash 12
- Jet Wash 14
- SW-1 Activating Degreasing Solution
- SW-6 Select Metals Degreasing Solution
- SW-7 Parts/Brake Cleaning Solution
- SW-8 Aircraft/Weapons Cleaner
- Chemstar Super Clean
- Zero VOC Solvent Degreaser
- CRC Smart Washer Auto & Ink Grade Cleaning Solution, 14156
- CRC Smart Washer Industrial Grade Cleaning Solution, 14148
- Heavy Duty Degreaser Concentrate, 07214
- Multiclean NG-2-M & Booster ML, NG-2-M
- Bosun's Choice All-in-one Marine Cleaning Solution
- Earth Alive Parts Washing Solution
- Max Killen – Heavy duty all-in-one cleaning & degreasing solution
- Rapid All – All-in-one janitorial & Sanitation cleaning solution
- Cold Plus Cleaner
- Nature's Guard Soy-based Carbon Remover & Degreaser
- NZD-Ultra Degreaser
- Enforce Mold Release E-44
- Enforce Mold Release E-46
- Natures' Way PC Parts Cleaner, PC140
- NW Weapon Cleaner
- Oil Eater
- Cold Plus Cleaner
- AMC-511-4U Cleaner
- MC-509/4U Cleaner, MC-509
- SC-510/4U Cleaner
- Commercial Parts Washer Fluid M-500
- Mirachem 250 Rust & Scale Remover
- Compliant Cleaning Solvent – SCAQMD Certified, 4040
- Compliant Cleaning Solvent, 8007
- Compliant Repair & Maintenance Cleaner, 2077
- Compliant Surface Cleaner, 1071
- Compliant Surface Cleaner, 2571
- Compliant Waterborne Cleaning Solution, 1720B
- Hurrissafe 9065 Cast Iron Degreaser with Rust Inhibitor
- Hurrissafe 9450 Parts Washer Degreaser

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- NC-300 Industrial Cleaner & Degreaser, 1114
- Pac-Attack Cs-1-Microbial Cleaner, 19974
- Pac-Attack Cs-2-Microbial Cleaner, 19975
- Pac-Attack Soil-Microbial Cleaner, 1996
- Pac-Attack Surface-Microbial Cleaner, 1998
- Pac-Attack Trap-Microbial Cleaner, 1999
- Soylent Gold Cleaner & Degreaser, 7075
- Soylent Gold Parts Washing Solution, 7076
- SAV-A\_Brush Brush Remover
- Renegade Parts Washer Detergent
- SoyGreen Graffiti Remover
- SoyGreen Stainless Steel Cleaner
- KRUD KUTTER Adhesive Remover
- KRUD KUTTER Brush-Wash
- KRUD KUTTER Gloss-Off Prepaint Surface Preparation
- KRUD KUTTER Paint & Stain Remover
- KRUD KUTTER Prepaint Cleaner/TSP Substitute
- KRUD KUTTER Wallpaper and Paste Remover
- Original KRUD KUTTER
- OSOL 200 Cleaner
- QSOL 220 Cleaner
- QSOL 300 Cleaner
- D99 Cleaner/Degreaser, D-99
- Grease Master, R-300

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These products have specific end-use functions which would exclude these products from the Multipurpose Solvent category and most of the products are already regulated by CARB. Staff provides no data that proves that the remaining products can or would be used as a thinner or cleaner. In addition as stated above the criteria for being certified under CAS does not preclude these products from contributing to more ozone being created. SCAQMD staff lists these products in an attempt to create an impression that a substantial number of "compliant" products are available to consumers. However, the opposite is true.

### III. Technology Review

In this review section page 5, the staff does not evaluate the Aqueous Solvents or the Bio-Based solvents as thoroughly as the exempt solvents. There is no mention of VOC or reactivity of these solvents. Also there is no mention of relative flammability or toxicology for exempt or current compounds being used. Therefore, no determination of the effect on toxicity or ozone creation can be made. Staff needs to fully evaluate these alternative products. The staff uses the certified CAS list as a determining factor in claiming that the products are acceptable replacements. However, as stated earlier in this document, the certified CAS program has a major flaw in that the program allows solvents with reactivity four times higher than mineral spirits, which is the primary

4-9

component in paint thinner. In conclusion, there is a possibility that these alternate aqueous solvents and bio based solvents can create more ozone.

4-9  
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The "Exempt Solvents" page 5 & 6, that SCAQMD indicates can be used to replace the products that will be non-compliant have significant environmental, health and/or safety risks.

- Acetone – This product has substantial fire risks from 0F flashpoint and high volatility. In some applications, it can also generate 10 times more ozone than some Paint Thinners due to the volatility.
- Methyl Acetate – extremely flammable
- PCBTF – As stated by a contractor hired by the District, "PCBTF has not been tested for toxicity and there are many issues with it that have yet to be thoroughly examined. Its structure is a benzene ring with a chlorine substitute. Other chemicals with a chlorinated benzene ring structure have high toxicity. PCBTF also contains fluorine; if it is manufactured without proper controls or if it is used in applications where it is reactive, it could form free fluorine which is an extremely toxic material. Because it is produced in other countries, there could be an issue with the quality of the material."

4-10

These environmental, health and safety risks will be further explained in section X California Environmental Quality Act (CEQA).

On page 6 & 7 Bio-Based Solvents are discussed. To add to the above comments on Bio Based Solvents our technical experts had the following comments.

- Most bio-based solvents do not meet the proposed regulation. Ethanol, d-limonene, turpentine, and ethyl lactate are all vegetable based renewable resource solvents. They are also all 100% VOC and could only be used at around 3% per the proposed regulation.
- Many methyl esters also do not meet Rule 1143. The methyl esters that are compliant are of very limited use in thinners because of their extreme non-volatility. They don't evaporate and thus affect the film properties of the paint.
- Some of the products on the market today simply do not work. SCAQMD has not provided any data such as market share data to show that these products are feasible.

4-11

On page 7 the staff identifies several low-VOC products but does not state the reactivity or the flammability of these products. As stated before VOC content is not the sole factor for ozone creation. In addition our technical expert also evaluated the Districts list of low-VOC products currently available (Table 4) and had the following comments.

- **Low-VOC Lacquer Thinner** (Bortz Distributing) – Has a significant fire risk due to high acetone content. It is to our understanding a patent pending product.
- **Sunnyside's Green Envy** – As explained below, our results performed on oil based product shows that rather than thinning, *it thickens oil-based paint.*
- **Crowne Next** - SCAQMD Staff lists the VOC content as 0. This is wrong. The product has a VOC content of over 254.5 g/l, and cannot be sold under Rule 1143. A copy of the Material Safety Data Sheet for this product showing the 254.5 g/l VOC content is attached to these comments.

4-12

- **Soylent Gold Soy-Based Degreaser** (Ramco Specialty Products) –This product is not a thinner. Furthermore, this product is already regulated under CARB.
- **VOC Exempt Reducer IS-256** (Deft Finishes) – Special industrial thinner for polyurethane and epoxy coatings. It is not recommended for consumer oil-based coatings. It contains PCBTF and is very expensive.
- **Thinner 243E** (Carboline) –This is an extremely flammable industrial thinner containing acetone and PCBTF. It is recommended for industrial use only, and is not for use by consumers.

4-12  
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As mentioned above, Barr has conducted a test of the effectiveness of Sunnyside's Green Envy product as a paint thinner. A sample of 4500 cps of Glidden Ultra Hide Oil/Alkyd Semi Gloss paint was thinned with Green Envy, with the resulting viscosity measured with a Brookfield Viscometer using a LV#3 spindle at 12 rpm. The results of this test are set forth below:

0% Green Envy added	4,500 cps viscosity
10% Green Envy added	4,800cps viscosity
20%Green Envy added	5,500 cps viscosity
30% Green Envy added	6,500 cps viscosity
40%Green Envy added	7,400 cps viscosity
50% Green Envy added	10,000 cps viscosity

4-13

This test demonstrated that Green Envy actually thickened this Glidden paint.

Thus our review of these products shows that most are for specialty uses or do not perform or are simply not compliant with the proposed regulation. Staff needs to more thoroughly evaluate alternative products that can actually be used effectively as a universal consumer solvent similar to Paint Thinner. There is an alternative product that is available to consumers, that works, and presents no fire risk to consumers.

Barr has successfully developed and marketed a "low-VOC" Paint Thinner called KS Pro. It has been accepted by both consumers and professional painters, including those in Southern California. KS Pro has over 60% less VOC content than conventional Paint Thinner, yet remains effective at thinning and cleaning. It is also non-flammable, and thus does not subject consumers to any fire risk. However, Under Rule 1143, KS Pro would be banned.

4-14

#### IV. Legislative Authority

According to the Initial Statement of reasons for CARB's last rule making in June of 2008, the following is the Authority to regulate consumer products.

"In 1988, the California Clean Air Act (CCAA or 'the Act') added section 41712 to the California Health and Safety Code. Section 41712, along with subsequent amendments, requires ARB to adopt regulations to achieve the maximum feasible reduction in VOC emissions from consumer products. The CCAA specified that attainment of the California State ambient air quality standard is necessary to promote and protect public health, particularly of children, older people, and those with

4-15

respiratory diseases. The Legislature also directed that these standards be attained by the earliest practicable date.

Prior to adoption, the Board must determine that adequate data exist to establish that the regulations are necessary to attain State and federal ambient air quality standards; and the regulations are commercially and technologically feasible. The Act further stipulates that regulations adopted must not eliminate any product form, and that recommendations from health professional be considered when developing VOC control measures for health benefit products. The intent of section 41712 is primarily to reduce ground-level ozone concentrations.”

Please note that the primary intent of section 41712 is to reduce ground-level ozone concentrations, not just VOC content.

Over the last twenty years, CARB has taken numerous actions to fulfill the legislative mandate pertaining to the regulation of consumer products. Three regulations have been adopted that affect 115 consumer product categories by setting 150 VOC limits. These limits, when fully effective, will have resulted in reducing emissions by about 200 tons per day, an overall 44 percent reduction in VOC emissions.

CARB has been working on the Multipurpose Solvent and Thinner categories in an attempt to provide a regulation that fulfills the stipulation set forth by the legislature. CARB added the definition of Multipurpose Solvent to the consumer product rule in July of 1997. In two subsequent surveys in 2001 and 2003, CARB collected emission data on Multipurpose Solvents, packaged solvents and thinners, to be better able to regulate these categories. The definition of Paint Thinner was added in June of 2004. Due to on going work and survey data, in November of 2006, the Multipurpose Solvent definition was modified. Beginning in August of 2008 CARB began a rulemaking process for these products with a meeting to discuss the categories. Then in November of 2008 requested data for an updated survey to ensure the inventory of emissions for these categories. Industry believes that emissions from these categories are on the decline. CARB is attempting to accurately calculate the emission and to properly define the appropriate categories. A June 2009 CARB Hearing is planned to adopt a statewide regulation on thinners and multi-purpose solvents. Copies of CARB documents relating to the proceedings discussed above are attached to these comments.

If the SCAQMD is to regulate these categories of consumer products, then it should use the current state definition. In addition SCAQMD should be required to adhere to the stipulation placed on CARB for consumer products.

V. Rule Proposal

The staff report does not provide any data that shows that 25 g/l products will be feasible for all products. The rule does provide inconsistencies with the current state regulation in

4-15  
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4-16

the areas of definitions, sell-through and record keeping. We urge the district to provide consistency and to modify PR1143 to the current state regulation requirements.

4-16  
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VI. Emission Inventory

The staff report states on page 10 that CARB has delayed current rulemaking to assess the feasibility and any adverse impacts. CARB has stated their concerns with the increased fire risk and inventory discrepancies. SCAQMD has disregarded these issues. CARB is in the final stages of updating their inventory. Likewise the state Fire Marshall has stated a concern with the increased use of acetone. SCAQMD should consider these issues and delay this rulemaking.

4-17

VIII & IX. Cost Analysis & Incremental Cost effectiveness

Adoption of Rule 1143 would have significant economic consequences. Barr alone would lose an estimated \$4 million annually from lost solvent and thinner sales within the SCAQMD. Our retail customers (Home Depot, Lowes, etc.) are expected to lose over \$15 million annually within the District from loss of all solvent and thinner sales of products made by Barr and its competitors. Also sales tax revenues from these sales will be lost, as well as the loss of the VOC tax collected by CARB for these products. Given the increased fire risks that would occur if Rule 1143 were adopted, the costs of fires (including wildfires resulting in huge losses) and increased costs for fire insurance should be considered.

4-18

X. California Environmental Quality Act (CEQA)

The Draft Environmental Assessment ("EA") prepared in support of Proposed Rule 1143 is inadequate to meet the requirements of the California Environmental Quality Act [Public Resources Codes Sections 40400 et. seq.] for at least three reasons. First, it fails to acknowledge significant adverse environmental impacts that would result from substitution of the chemical (acetone) presumed to be the one that would primarily be used instead of other solvents now used in many of the products covered by that Rule. Those adverse impacts include a negative effect on air quality compared to existing products (due to increased ozone formation) resulting from least some uses and a very great increase in fire hazards. Also, the EA fails even to consider the adverse impact that will result from disposal of large volumes of hazardous waste starting on January 1, 2011 when retail stores and consumers will have to dispose of all existing non-compliant solvents. Finally, the EA fails to consider the superior alternative regulatory approach of a reactivity-based rule in terms of mitigation of these adverse impacts.

4-19

4-20

The EA upon which the District is relying for adoption of Rule 1143 was the basis for the following November 12, 2008 finding of no adverse impact:

"I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline 15252, COULD NOT have a significant effect on the environment..." EA, page 2-3.

4-21

That finding is erroneous as is explained below:

It is important to note that the District, including within the EA, presumes that acetone will be the primary chemical used to substitute for solvent products now in the market that will be disallowed under Rule 1143. At page 2-10 of the EA, it is stated that "... acetone, is also expected to be used to formulate compliant products..." Later, at page 2-19, it is admitted that "... acetone is expected to be *the primary replacement solvent* (emphasis added)" under the Rule. Accordingly, a valid assessment of the impacts of Rule 1143 must consider the environmental impacts of substitution of acetone for currently existing solvent products that will not comply with Rule 1143.

4-21  
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It is also important to note preliminarily that the discussion of chemicals now used for cleaning and thinners and potential replacement solvents in the EA repeatedly and improperly includes a "health" rating by the National Fire Protection Association (NFPA). Those "health ratings are discussed in a series of sections entitled "Toxicology": acetone (page 2-12, paragraph 4), denatured alcohol (page 21-13, paragraph 3), isopropyl alcohol (page 2-13, paragraph 3), lacquer thinner (page 2-14, paragraph 3), methyl ethyl ketone (page 2-14, paragraph 3) mineral spirits (page 1-15, paragraph 3), paint thinner (page 2-15, paragraph 3), toluene (page 16, paragraph 3), turpentine (page 1-16, paragraph 3) varnish makers and printers naphtha (page 17, paragraph 3) xylene (page 2-17, paragraph 3), methyl acetate (page 2-18, paragraph 3) and parachlorobenzotrifluoride ("PCBTF") (page 2-18, paragraph 3). All of these chemicals are said to have been assigned "health ratings by the NPCA of either "1" meaning "slight health risk" or "2" meaning "moderate health risk." These ratings are relied upon in the EA for the proposition that the health risks associated with currently available products and replacement products are the same: "... there is no substantive evidence that shows the use of those solvents identified as possible replacements would result in significant adverse toxic air contaminant impacts." (EA, page 2-20). That conclusion is invalid because the EA has improperly characterized the meanings of NPCA ratings. NPCA is an authority only on fire, electrical, and building safety. As such, it is not an authority on toxicology. Thus, the reliance within the EA on NPCA ratings for evaluation of health effects is invalid.

4-22

This misuse of NPCA ratings in the EA is especially problematic because, as is discussed below, two of the three chemicals identified on pages 2-18-2-19 of the EA as "potential replacement solvents" are acetone and methyl acetate which are both dangerous because highly flammable. The other one is PCBTF, which is problematic as a consumer product for several reasons. First, it is five to ten times more expensive, causing consumers to be reluctant to buy it. Also, the statement in the EA at page 2-18 that this chemical has a "distinct odor" is a serious understatement. The odor is so obnoxious that it is unsuitable at least for indoor use. That may be why, to the best of Barr's knowledge, PCBTF is not produced anywhere in this country. Finally, as acknowledged at page 2-19 of the EA, "potential chronic toxicity or carcinogenicity data on PCBTF was not available." That being the case, the improper reliance on NPCA ratings as a basis for a health evaluation of this chemical is especially inappropriate.

(Adverse Air Quality Impact)

The EA asserts that the use of acetone will have only beneficial effects on air quality (i.e. reduced ozone formation) because back in 1995 EPA exempted it from the category of volatile organic compounds ("VOCs") deemed to be air contaminants because of the relatively low reactivity of that substance once it enters the atmosphere. (EA, page 2-12.) The significance of this "reactivity" with respect to ozone formation is explained hereinabove. It is, however, only one variable influencing the capacity of a chemical to produce ozone in the atmosphere. As explained above, another equally significant variable for ozone formation is "volatility." It is significant because it is the chemical characteristic that determines how readily a material will evaporate so that it will enter the ambient air and thereby be available for the photochemical reaction creating ozone. A very large volume of a relatively low reactivity chemical like acetone can produce more ozone than a very small volume of a more reactive, but less volatile, chemical. That is exactly the scenario that will occur with respect to a significant use of products subject to Rule 1143.

4-23

Barr's records indicate that 38.7% of its sales are of paint thinner using petroleum based mineral spirits as the operative solvent. It is the largest seller of Barr's products. A recent in-store survey of stores selling Barr's products within the South Coast District revealed that over 90% of 180 surveyed consumers (both professional painters and do-it-yourselfers) use paint thinner. The survey further indicated that such thinners are commonly used both for paint thinning and cleaning. Thus, Barr has determined from direct contact with the consumers using its products that most use paint thinner and that cleaning is one of the ways that it is commonly used.

Barr has conducted a scientific experiment and calculation to determine how the acetone thinner contemplated under Rule 1143 compares with three thinners now sold by the company in terms of ozone formation resulting from use of thinner for cleaning brushes. First, five brush cleanings were done with each of three different paint thinners now sold by Barr but not compliant with Rule 1143. For each of these cleanings there was a measurement of the amount of thinner that evaporated, thus entering the atmosphere to be available to react to produce ozone. Then Barr repeated the five brush cleanings with a substitute thinner using acetone as contemplated under Rule 1143 and measured the amount of acetone that evaporated. For the acetone thinner, an average of 4.88 grams evaporated, resulting in formation of 2.0984 grams ozone. For Barr's present mineral spirits thinner, only an average of 0.26 grams evaporated, resulting in only 0.4732 grams ozone. For Barr's odorless mineral spirits thinner, an average of 0.43 grams evaporated, resulting in formation of 0.3822 grams of ozone. For Barr's KS Pro thinner, an average of 0.44 grams evaporated, resulting in formation of 0.1364 grams of ozone. In summary, the acetone thinner created 4 times more ozone than Barr's present paint thinner, 5.5 times more ozone than Barr's mineral spirits paint thinner and 15 times more ozone than Barr's KS Pro Paint thinner. Because all of these Barr products will not be allowed under Rule 1143, the substitution of an acetone thinner for them will result in a significant net increase in ozone formation. That was not a surprising phenomena because the EA

4-24

conceded at page 2-11 that acetone is "... a highly volatile liquid..." The actual data from this scientific test and calculations discussed above are attached to these comments.

This proves that the District's assumption set forth in the EA that shifting to acetone away from currently available products would necessarily be beneficial to reduce ozone formation is wrong. It is based on a thirteen year old EPA acetone classification predicated solely on reactivity without regard to its volatility. The Barr test proves that this assumption is erroneous in actual practice. The brush cleaning example used for the scientific analysis discussed above is significant because it represents a common use of the company's largest selling product.

A similar cleaning test to the one performed by Barr is discussed at page 2-27 of the EA. That test done by IRTA reported only a ten per cent increase in evaporation using acetone when compared to current products. However, all of these tests were done with lacquer thinners or other fast evaporative reducers. None were done with paint thinners, and few (if any) used brushes or rollers for application. Those are by far the most common application tools used by the consumers who will be buying products subject to Rule 1143.

Perhaps the most important assumption within the entire EA is that the new acetone based products introduced under Rule 1143 will serve the only purpose of the rule -- reduction in formation of ozone. That most important assumption has been proven wrong in at least one common use. The resulting conclusion that Rule 1143 will actually be harmful in terms of its only purpose of ozone reduction in a least one significant example means that the EA is deficient under CEQA. The EA is similarly deficient with respect to another serious adverse impact from acetone use.

(Fire Hazards)

The EA discusses the matter of increased fire hazard from use of acetone products under Rule 1143 at pages 2-37 through 2-40. The overall conclusion of that discussion is that a shift from currently available products to acetone products will have no impact in terms of increased fire hazards. That conclusion is based on the expectation that such acetone products will include warnings on their labels (page 2-38) instructing users to "keep the container away from heat, sparks, flame and all other sources of ignition. The vapors may cause flash fire or ignite explosively. Use only with ventilation." Such warning are contemplated by the District because the fact is that acetone is a dangerous chemical in terms of flammability and most significantly is far more dangerous in that regard than current products that it will replace under Rule 1143. However, the EA understates the nature of warning required for an acetone based thinner.

Barr makes a special purpose acetone thinner for only for use with specified coatings including polyester and epoxy resins, ink, adhesives and contact cement. A copy of the label for that thinner is attached to these comments. With respect to fire hazard, that label provides as follows:

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4-26

**“DANGER! EXTREMELY FLAMMABLE. VAPORS MAY CAUSE FLASH FIRE OR IGNITE EXPLOSIVELY. VAPORS MAY TRAVEL LONG DISTANCES TO OTHER AREAS AND ROOMS AWAY FROM WORK SITE. KEEP AWAY FROM HEAT, SPARKS, FLAME AND ALL OTHER SOURCES OF IGNITION.** Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition anywhere in the structure, dwelling or building during use and until vapors are gone from the work site and all areas away from work site. Keep away from electrical outlets and switches. Beware of static electricity that may be generated by synthetic clothing and other sources. **USE ONLY WITH ADEQUATE VENTILATION TO PREVENT BUILDUP OF VAPORS.** Do not use in areas where vapors can accumulate and concentrate such as basements, bathrooms, or small enclosed areas. Whenever possible, use outdoors in an open air area. If using indoors open all windows and doors and maintain a cross ventilation of moving fresh air across the work area. If strong odor is noticed or your experience slight dizziness, headache, nausea, or eye-watering – **STOP** – ventilation is inadequate. Leave area immediately. **IF THE WORK AREA IS NOT WELL VENTILATED, DO NOT USE THIS PRODUCT.** A dust mask does not provide protection against vapors. ( A copy of this label is attached.)

This warning for an “EXTREMELY FLAMMABLE” product is not required for paint thinners like those now on the market using mineral spirits instead of acetone.

In contrast to an acetone product, the warnings for paint thinners using mineral spirits are less extreme because they are merely combustible as contrasted with highly flammable acetone. The difference in the degree of hazard can be seen by contrasting Barr’s warnings on its paint thinners made with mineral spirits with the more extreme warnings on its acetone thinner set forth above:

**“CAUTION. COUBUSTIBLE. KEEP AWAY FROM HEAT, SPARKS, FLAME AND ALL OTHER SOURCES OF INGITION, VAPORS MAY CAUSE FIRE. VAPORS MAY TRAVEL LONG DISTANCES TO THER AREAND ROOMS AWAY FROM THE WORK SITE.** Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignitions anywhere in the structure, dwelling or building during use and until vapors are gone from the work site and all areas away from the work site. Keep away from electrical outlets and switches. Beware of static electricity that may be generated by synthetic clothing and other sources. Do not use in areas where vapors can accumulate and concentrate such as basements, bathrooms or small enclosed areas. **USE ONLY WITH ADEQUATE VENTILATION TO PREVENT BUILDUP OF VAPORS.** Whenever possible, use outdoors in an open air area. If using indoors open all windows and doors and maintain a cross ventilation of moving fresh air

4-26  
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across the work area, If strong odor is noticed or your experience slight dizziness, headache, nausea, or eye watering – STOP – ventilation is inadequate. Leave area immediately. If the work area is not well ventilated, you MUST use a properly fitted and maintained NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.” ( A copy of this label is also attached.)

4-26  
Cont'd

The significant differences between this warning for the “combustible” paint thinner now on the market and the “extremely flammable” acetone specialty product thinner exist because the acetone is much more dangerous in terms of fire hazard. Barr does not make an acetone paint thinner for consumer use because of this difference in the degree of fire hazard.

The conclusion that acetone products are more dangerous than paint thinners made with acetone (hence the need for more extreme warnings illustrated above) is an obvious result of the differing chemical properties of the two products. Table 2-6 on page 2-37 of the EA provides the “flash points” for relevant chemicals. A “flash point” is the temperature at which a chemical bursts into flames when exposed to any kind of ignition source, including fire or even sparks. The flash point for the mineral spirits explained above to be the solvent now used for paint thinners is between 109 and 113 degrees Fahrenheit. The flash point for acetone is revealed in that table to be -4 degrees Fahrenheit. That means that, except on rare days when the temperature reaches 109 degrees, the paint thinner now on the market will not catch fire even if directly exposed to fire. In contrast, an acetone thinner would burst into flame when exposed to a spark every day when the temperature is above arctic conditions.

4-27

Figure 2-6 on Page 2-37 erroneously indicates a flash point of 96.6 degrees for paint thinners based on an assumption (stated in footnote g) that “... paint thinner is a petroleum distillate primarily composed of mineral spirits or xylene.” In fact, all paint thinner sold by major producers (Barr, Crown, Sunnyside & Reccochem) have flash points over 100 degree F. None of their common paint thinner products sold to consumers contain any xylene. Thus, contrary to the 96.6 degrees F flashpoint erroneously attributed to them in Figure 2-6, these paint thinners must be moderately heated or exposed to higher temperatures than 100 F to ignite. This erroneous Table was provided to the District by Oxy Chemical Specialty Business Group (EA page 2-37) which is a vendor of PCBTF and therefore stands to gain a business advantage from this mischaracterization of the flash point of current paint thinners.

4-28

The discussion of flammability of acetone at pages 2-38 through 2-39 of the EA relating to “explosive limits” is predicated on the same Table 2-6 and is misleading. This discussion suggests that acetone is not more flammable than products made with toluene, mineral spirits or xylene because the “vapor concentration” of 26,000 ppm at which acetone ignites is higher than such vapor concentrations of the other chemicals. However, this is misleading because that higher vapor concentration for acetone is reached at a lower temperature than the temperatures at which the other chemicals reach their

4-29

respective “vapor concentrations” causing ignition. The suggestion that acetone is less flammable is thus misleading and irresponsible.

4-29  
Cont’d

The contention in the EA that the presumed shift to acetone based products under Rule 1143 will not result in increased fire hazards has reportedly been directly refuted by the Office of the State Fire Marshall. The CARB Staff has provided a copy of a December 19, 2008 letter to the District commenting on Rule 1143. (A copy of that letter is attached to these comments.) This CARB Staff letter includes the following:

“On page 19 of the Draft Staff Report for Proposed Rule 1143, there is the following statement: ‘the high flammability risk for acetone is similar to the currently available high VOC solvents.’ The OSFM staff have told us that while the flammability rating of acetone is similar to that of currently available solvents, the fact that acetone has an extremely low flash point, compared to currently available solvents, makes the risk of fire loss from the use of acetone *much higher compared to other solvents.*” Emphasis added.

4-30

The Office of the State Fire Marshall has, therefore, reportedly rejected the major premise of the EA with respect to increased fire hazard from acetone products under Rule 1143.

The flash point for methyl acetate at 15 degrees F is almost as bad as acetone, making it nearly as dangerous as acetone in terms of fire hazards. Thus, two of the three “potential replacement solvents” identified at pages 2-18 through 2-19 of the EA are highly flammable. As discussed above, the other one has undetermined health impacts and an obnoxious odor.

4-31

The rationale in the EA that the very low flash point of acetone will have no actual impact on fire hazards because users will carefully follow the above-quoted label warnings is implausible. The dubious nature of the no impact rationale in this part of the EA is revealed by a statement from a Fire Department official quoted in another section of the EA, but excluded from the fire hazard assessment in Pages 2-37 through 2-40. At page 2-53 of the EA a letter from Captain Michael R. Lee of the Los Angeles County Fire Department is referred to with respect to solvents using acetone (flash point 4 degrees F), MEK (flash point 25 degrees F), and xylene (81 degrees F) stating that his Department considers all of them to be Class I Flammable Liquids. With respect to all three of these chemicals (note that of them only acetone would comply with Rule 1143) the letter from Captain Lee is further described as follows on page 2-53:

4-32

“ Captain Lee goes on to state, ‘In my opinion, acetone presents the highest degree of fire hazard of the three solvents considered, but not significantly more hazardous than the others.’ He notes, however, that all three should be used with extreme caution, with proper safeguards in place.”

No such characterization was or could be made with respect to the mineral spirits now used for paint thinners.

4-32  
Cont'd

As a simple physical proposition, going from a product now made with chemicals having a flash point over 100 degrees F to one made with a chemical having a flash point below 0 degrees F inherently produces an increased fire hazard. Given that Rule 1143 applies to consumer products used by both painting professionals and do-it-yourselfers, the assumption in the EA that the shift to a chemical which Fire Captain Lee warned should be "... used with extreme caution, with proper safeguards in place" comes down to an assumption that consumers will always diligently use the District-mandated product with extreme caution. There is nothing in the EA to support that patently dubious assumption.

4-33

Even if one were to make the leap of faith that persons using acetone based thinners for paint cleaning will always use extreme caution and prevent the thinner from being exposed to any ignition source based on strict adherence to warning labels, a Barr experiment reveals that acetone based paint thinners present a latent hazard that cannot be addressed by labels on the containers within which thinners are sold. That hazard involves the use of the product for its designed purpose of thinning paint. What will happen is that paint that represents no fire hazard will be turned into such a hazard after it is thinned with acetone.

4-34

To demonstrate that this will occur, Barr thinned paint with a Paint Thinner now on the market made with mineral spirits and applied a flame directly to the thinned paint with no resulting fire. Then the same paint was thinned with an acetone based thinner. When a flame was placed into these two thinned paints, the one thinned with acetone caught fire and burned robustly. In contrast, the paint thinned with the Barr product never caught fire. A CD showing this and another test is being provided with these comments. This scenario is not covered by the warning label on either the paint or the thinner. Furthermore, expanding the warning on a future thinner container to state that paint thinned with the product will become flammable would be helpful only if one assumes that all of the thinned paint will be used at the same time by the same person who presumably heeded that warning. The EA does not even recognize this thinned paint fire hazard. The governing assumption that such thinned paint can be applied by persons including do-it-yourselfers only with the kind of extreme care referred to by Fire Captain Lee again strains credulity. Certainly, there is nothing within the EA to support such a grossly optimistic expectation.

4-35

Barr conducted a pair of tests to compare the fire risks of acetone and paint thinner now on the market. Barr placed two small containers on a work bench and filled one with acetone and the other with paint thinner. A small candle sitting between the containers was lit. The candle was intended to represent a constant ignition source (e.g. pilot light) that is often present when consumer use thinners. Within seconds the acetone vapors ignited, and the container with acetone was engulfed in flames. The container with paint thinner never ignited. These tests are also on the CD being provided with these comments.

The EA includes within Table 2-6 (page 2-37) Flammability Classifications by the NFPA purporting to show that acetone has the same flammability rating as solvents now in use other than mineral spirits. Based on this classification, the EA contends that replacement solvents are not more risky in terms of fire hazards than the chemicals they are replacing. The problem with that contention is that NFPA places chemical that are only combustible in the same class as those that are flammable. As indicated by both the warning labels quoted above and the comments by the Office of the State Fire Marshall discussed above, these chemicals are not the same in terms of fire hazards.

4-36

Significantly, the EA does not refer to the Federal Consumer Product Safety Commission ("CPSC"). It is the agency that determines whether consumer products like those covered by Proposed Rule 1143 can be sold. That Commission has already banned the use of extremely flammable liquids in some consumer products that are intended to be spread over large areas. Examples of such banned products are extremely flammable adhesives (16 CFR 1302) and extremely flammable waterproofing sealers (16 CFR 1500.17). The Commission has banned them based on a determination that such products pose an unreasonable risk of burn injuries to consumers resulting from explosive and flashback fire. Contrary to the assumption in the EA that warnings are sufficient to allow use of such products, the CPSC has ruled that no amount of labeling or other standards could adequately address such hazards. There is no indication in the EA that the SCAQMD has even consulted with the CPSC, much less that the Commission would allow acetone to be used in products covered by Rule 1143.

4-37

Because it erroneously denies the obvious increase in fire hazard that would occur from substitution of acetone for products now on the market, the EA fails to include an assessment of the potential impacts that may occur as a result in an increase in fires within the District. Given the susceptibility of many areas within the District to wildfires, the EA should have considered the potential impact of additional wildfires on a variety of environmental factors including aesthetics, bio resources, and land uses. Such fires would not only result in emissions of particulates, there would also be a huge release of green house gasses in like carbon dioxide from the fires themselves and emissions from response vehicles.

4-38

The only possible conclusion is that EA fails to fairly assess the fire hazard associated with the primary chemical contemplated for use under Rule 1143. It is obvious that shifting from a product that will not catch fire under all but the most extremely hot temperatures to one that is flammable any time the temperature is above zero will present a significant increase in fire hazards. While acetone can be used safely in small projects and possibly in some larger ones by trained, professional users, a very real danger exists because this regulation would put commonly used products (especially Paint thinner) into the hands of untrained consumers. The absence of any attempt to provide support for the assumption that such risk will not be significant because all consumers will abide by highly restrictive use warnings is patent and provides no credible basis for the EA finding of no significant adverse fire hazard impact.

4-39

## (Hazardous Waste Disposal)

The entire section on hazardous waste disposal takes up barely one page in the EA running from part of page 2-55 to part of page 2-56 and concludes in a cursory fashion that the regulation will have no impact. More specifically, the EA asserts at page 2-55 that "... PR 1143 may result in the alteration of the composition of a waste stream because of reformulated products, but would not be expected to result in an increased generation of waste." That conclusion is obviously erroneous for several reasons.

On page 1-7 of the EA in a section describing the "Requirements" of Rule 1143, there is a description of a "sell-through" provision in it "... that would allow applicable solvents manufactured prior to January 1, 2010 to be sold, offered for sale, and used for up to six months after January 1, 2010." Under that provision, retailers having unsold non-compliant product would have dispose of it at the end of the sell through period. Most of that unsold inventory would have to be disposed of as a hazardous waste. That volume of new hazardous waste is not acknowledged in the EA and directly contradicts the above-quoted conclusion that the rule would not "result in an increased generation of waste."

The hazardous waste disposal of unsold products by retailers would reasonably be expected to be done in compliance with hazardous waste regulations requiring a shipment under a hazardous waste manifest to a licensed disposal facility. The EA should have evaluated the volume of such waste and its impact on such facilities. The failure to do so is alone a significant deficiency in the EA. However, an even more significant deficiency relates to the issue of unregulated consumer disposal.

4-40

As set forth above, the so-call "sell-through" provision does not apply only to sales by distributors and retailers. It also includes a prohibition of use of non-compliant products at the end of the six months. That means that any person caught using a product lawfully sold before the end of the sell-through period would be subject to civil and criminal penalties for violating Rule 1143, including do-it-yourselfers. That means that everybody who has not used up such products now constituting hazardous waste will have to dispose of them. Although the products declared to be unlawful for use under Rule 1143 are in fact just as hazardous in the hands of do-it-yourselfers as they are when held by anybody else, those materials cannot be presumed to be disposed of as hazardous waste under the regulatory program applicable to retailers. That is because Section 2262.10(i) of the California Code of Regulations expressly states that the hazardous waste regulations do "... not apply to generators handling only hazardous waste produced incidental to owning and maintaining their own place of residence." No consideration is given in the EA to the hazardous unused products that will have to be disposed of as a result of the adoption of Rule 1143. Such materials could go down the drain to sewer systems, down storm drains to the ocean, and to the ground to migrate to groundwater.

This creation of a new, unused or unsold hazardous waste stream at the end of the sell-through period is not the only new waste stream that will be created under Rule 1143. The lack of products effective for cleaning oil based paint under Rule 1143 will result in many consumers (especially unregulated do-it-yourselfers) electing to throw many more

4-41

paint brushes and other equipment away as common garbage. These hazardous items would most likely end up in landfills receiving residential trash.

4-41  
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The EA also fails to account for the fact that water based substitute products will most likely be sold in plastic instead of steel containers. Because these plastic containers do not recycle to the same extent as the metal ones now in the market, there will be an increase in plastic waste going to landfills.

4-42

Finally, the EA does not take into account the nature of advertising of water based and bio based products as "Green" or "Environmentally Friendly." This image produced by advertising will predictably cause consumers to dispose of these products improperly by pouring down sinks, storm drains, or onto the ground.

4-43

The California Legislature has acknowledged the significance of the household disposal of hazardous materials by adopting Health and Safety Code Sections 25218 et seq. Section 25218(a) states:

"Residential households which generate household hazardous waste ... in the state need an appropriate and economic means of disposing of the hazardous waste they generate."

4-44

That statute attempts to promote the operation of household hazardous waste collection facilities. The EA does not even recognize the existence of such facilities, much less assess the extent to which the household hazardous waste generated under Rule 1143 would find its way to them. The recent Barr customer survey in stores within the District suggests that most will not. The surveyed customers indicated that only 10 to 20 of the do-it-yourselfers sent solvents to such disposal facilities, with that number falling to only 3% for acetone products.

The failure to even recognize the fact that the sell-through provision will generate a new, significant hazardous waste stream and the complete absence of any consideration of the environmental impact of the disposal of it is a huge deficiency in the EA. In response to industry comments, the latest version of Rule 1143 extends the sell-through period from six to twelve months. However, that does not cure the failure to the EA to address the issue of resulting hazardous waste disposal. Furthermore, there has been no demonstration by the District staff that a one year sell-through/use period is sufficiently long to avoid the generation of a new hazardous waste stream from unsold and unused products banned under Rule 1143.

4-45

(Reactivity Based Alternative)

As explained above, Barr has been working cooperatively with the CARB to develop a state-wide rule for the same products covered by Rule 1143 based on the most current science factoring reactivity into the ozone formation analysis. The State Board has contemplated adopting such a rule by as early as next June. The analysis set forth above shows that Barr could bring reformulated products to the market resulting in a sixty-three

4-46

per cent net reduction in ozone formation under such a rule. Nonetheless, the District is proposing to go forward with Rule 1143 before CARB completes its rulemaking for these products and to then consider incorporating the kind of reactivity approach under consideration by CARB at some undetermined future date.

The rationale for the regulatory decision to proceed now with a version of Rule 1143 failing to incorporate the latest science of reactivity is set forth at pages 2-20 through 2-27 of the EA. There it is conceded at page 2-21 that CARB has already adopted regulations for clean fuel/low emissions vehicles and aerosol coatings based on this science. However, because CARB has not yet completed its work developing a rule for consumer solvents the EA asserts at page 2-27 that now "... it would not be prudent to implement a reactivity-based ozone reduction standard on incomplete science." Instead of holding off on implementation of a rule not based on the most current science, the EA instead concludes on the same page that "... staff supports the continuation of a mass-based ozone control strategy, with future consideration for a reactivity-based approach." Thus, Barr and other affected parties whose ability to continue to provide safe and effective products depends on adoption of the kind of reactivity based rule contemplated by CARB are informed at page 2-26 that: "Reactivity will be examined in the Phase II process." However, no indication is provided about when a reactivity based amendment to Rule 1143 would be adopted in this "Phase II process."

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This District plan to adopt Rule 1143 now and consider a later rule amendment incorporating the reactivity approach discussed above does not satisfy CEQA requirements because the EA fails to acknowledge the significant adverse environmental impacts that will result from adoption of Rule 1143. As explained above, resort to acetone as the "primary replacement solvent" (EA page 2-19) under Rule 1143 will cause such impacts. At least with respect to paint cleaning operations, there can be up to twenty times more ozone formed than when thinners now on the market are used. Also, there will be a dramatic increase in fire hazards, especially when thinning paint. One of the principle requirements of CEQA is that consideration be given to mitigation of such impacts before regulatory action is taken. Because the EA fails to even acknowledge these adverse impacts, it includes no consideration of the value of the reactivity based alternative in mitigating these harmful effects from the rule. That failure to consider the reactivity alternative in the context of mitigation of significant adverse environmental impact renders the EA deficient under CEQA.

(CEQA Conclusion)

The purpose of CEQA is to assure that agencies like the District give due consideration to the environmental impacts of their regulatory actions. In order to do so, they must first identify the potential for significant adverse impacts. The EA for Rule 1143 supporting a purported determination that there will be no such impacts fails to provide such consideration of at least three significant adverse effects: (1) increased ozone formation from substitution of acetone for other solvents, at least in the case of mineral spirits in paint thinners; (2) increase in fire hazards from substitution of highly flammable acetone for other much safer solvents, especially for paint thinning; and (3) creation of a new

4-47

stream of hazardous wastes that would require disposal under the “sell-through” provision, including unregulated disposal from residences. Having failed to even acknowledge these significant adverse impacts, the EA could not and does not properly consider mitigation of them as required by CEQA. This failure is especially important because the reactivity based regulatory alternative contemplated by CARB completely avoids the increase ozone and increase fire hazard impacts. Accordingly, adoption of Rule 1143 based on the existing EA would violate CEQA.

4-47  
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XII. Comparative Analysis

In this section the District fails to compare PR1143 with rule 1171, which the District claims is the source of the technology that will be used for compliance with PR1143. While it is true that Rule 1171 is not for consumers, it does apply to contractors which would use the product in a similar manner to consumers but on a more frequent basis. As stated before, our survey shows that contractors do not use the alternative products listed by the district staff. Therefore a comparative analysis should be completed.

4-48

XIII. Conclusion

For all the reasons discussed above, the District should not adopt Proposed Rule 1143 at this time. Rather, adoption of such a rule should be deferred until product specific reactivity based standards can be incorporated into it. The District should make it a high priority to work with CARB and industry to develop a revised version of the rule including such reactivity standards. Barr would commit its resources to cooperate with such a rule development process. Given the fire hazard associated with acetone, it would be in the public interest not to assume that chemical will be used significantly to provide compliant products under any version of Rule 1143. Finally, the “sell-through” provision in Rule 1143 should be revised to extend the one-year period for sale and use of products phased out under Rule 1143 to three years.

4-49

Thank you for your attention to these comments and we look forward to working with the District to cooperatively develop a rule that is feasible.

**ATTACHMENTS**



Linda S. Adams  
Secretary for  
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## Air Resources Board

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Arnold Schwarzenegger  
Governor

December 19, 2008

Don Hopps  
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Dear Mr. Hopps:

The Air Resources Board (ARB) staff appreciate the opportunity to comment on South Coast Air Quality Management District's (SCAQMD) Proposed Rule 1143 (PR 1143), and the Draft Staff Report for Proposed Rule 1143, both dated December 10, 2008. We continue to have concerns relating to the flammability risk of acetone based products in the hands of the consumer, and have a suggestion for including a prohibition in the rule for methylene chloride and perchloroethylene because these compounds are exempt from the definition of volatile organic compound (VOC) and could potentially be used to reformulate products to meet the rule. As promised, we are also providing more details on the how we understand the emission reductions were calculated for Rule 1171 and how those calculations may impact the reductions being claimed for PR 1143.

As you know, David Mallory, of my staff, provided comments at your December 9, 2008, public workshop related to the flammability risks that may be associated with consumer use of acetone based paint thinner products and relayed to you our previous day's conversation with the Office of the State Fire Marshall (OSFM) staff. While acetone products are not the only potential method of compliance with PR 1143, we believe its availability and use will increase significantly if PR 1143 is adopted. We also have a comment relating to the fire risk from the use of acetone based paint thinners. On page 19 of the Draft Staff Report for Proposed Rule 1143, there is the following statement: "...the high flammability risk for acetone is similar to the currently available high-VOC solvents." The OSFM staff have told us that while the flammability rating of acetone is similar to that of currently available solvents, the fact that acetone has an extremely low flash-point, compared to currently available solvents, makes the risk of fire loss from the use of acetone much higher compared to use of other solvents.

4-50

We recommend that you consult with the OSFM staff contacts we have provided you for more information. In addition, as we requested in a telephone conversation with you regarding PR 1143 on December 16, 2008, please give us the contact information for the local fire agencies, referenced on page 23 of your Draft Staff Report for PR 1143.

4-51

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

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Mr. Don Hopps  
December 19, 2008  
Page 2

We would like to facilitate a telephone conversation on this topic among the SCAQMD staff, the local agencies you have been working with, and the OSFM.

As you know, we have committed to working with you on the emission reductions claimed for PR 1143 in the Draft Staff Report for PR 1143. We are providing you with the following detailed inventory analysis to start that discussion. My staff will contact you soon to set up a meeting to go over this information.

SCAQMD Rule 1171 required that "clean-up" Thinners and Solvents used at stationary sources and by paint contractors contain no more than 25 g/l VOC effective January 1, 2005. Prior to the implementation of Rule 1171, the ARB emissions inventory included emissions from Thinners and Solvents for oil based coatings, used by paint contractors, general consumers and for industrial maintenance. Stated on page 6 of the Staff Report for Proposed Amended Rule 1171, dated November 2003, the emissions SCAQMD claimed were calculated from the statewide value obtained from ARB's emission inventory. At that time, the Thinners and Solvents value in ARB's emission inventory was calculated from the 2001 Architectural Coatings Program Survey. This value has not been updated to reflect the reductions from the implementation of Rule 1171. Assuming the reductions claimed in Rule 1171 were achieved, the Thinners and Solvents value in our emissions inventory is overstated. As explained below, we are conducting a survey update, due this week, that will provide the most up to date statewide Thinners and Solvents data and should indicate the reductions achieved from Rule 1171.

4-52

With regard to PR 1143, emission reductions were calculated from the ARB's current emissions inventory. It is our understanding that SCAQMD staff used the Thinners and Solvents value discussed above. Because PR 1143 affects Thinners and Solvents used by general consumers, SCAQMD staff also used a portion of the Multi purpose Solvents value in ARB's emissions inventory which was derived from the 1997 Consumer and Commercial Products Survey. We believe that the Multi-purpose Solvent inventory value, derived from the 1997 survey, contains products used by consumers, paint contractors, and commercial and industrial users. In attempts to reconcile the inventory we conducted the 2003 Survey.

The 2003 Survey requested sales and formulation information for both Paint Thinners and Multi-purpose Solvents, used commercially and by general consumers. In this survey, we requested and received product labels, which, in conjunction with shelf surveys and discussions with retailers, revealed that much of the Multi-purpose Solvent products reported are not used by general consumers but rather by paint contractors for thinning and clean up of architectural coatings. Thinners and Solvents used for used for industrial maintenance or as an ingredient in a specialized coating were removed from

Mr. Don Hopps  
December 19, 2008  
Page 3

the 2003 Survey data. Consequently, much of the emissions in the 2003 Survey for Paint Thinners and Multi-purpose Solvents are already accounted for in our emissions inventory, under Thinners and Solvents calculated from the Architectural Coatings Surveys. Therefore, it was not appropriate to utilize the 2003 survey data to update our emissions inventory. To resolve this issue, we redefined Multi-purpose Solvent in the general Consumer Products Regulation, resulting in a limited universe of products, and distributed a survey update in 2008, to collect more precise data. Also, in 2007, after proposing a statewide 3 percent VOC limit for Thinners and Solvents used commercially and by general consumers, we discovered that the sales and formulations for these products had changed significantly since 2003. This further supported the necessity to conduct a survey update.

4-52  
Cont'd

As you know, the data from our survey update will be available within several weeks. As noted in the PR 1143 staff report you plan to use this updated survey data, once it is available, to calculate emission reductions. We are in agreement with this plan. In addition to the current inventory values likely being too high, the values contain emissions from products used commercially and by general consumers, prior to the implementation of Rule 1171. We believe SCAQMD may be claiming emission reductions in PR 1143 that were already claimed in Rule 1171. If this is the case, then either a portion of the reductions claimed in either Rule 1171 or PR 1143 would not be State Implementation Plan creditable.

Our last comment has to do with the possibility that methylene chloride and perchloroethylene could be used to reformulate products to meet the requirements of PR 1143 because these compounds are exempt from the definition of volatile organic compound. We suggest that the rule contain a provision that specifically prohibits the use of these compounds in the reformulated products.

4-53

If you have questions regarding our comments, please contact Mr. David Mallory, Manager, Measures Development Section, at (916) 445-8316, or by email at [dmallory@arb.ca.gov](mailto:dmallory@arb.ca.gov).

Sincerely,

/S/

Janette M. Brooks, Chief  
Air Quality Measures Branch  
Stationary Source Division

cc: See next page.

Mr. Don Hopps  
December 19, 2008  
Page 4

cc: David Mallory, P.E., Manager  
Measures Development Section,  
Air Quality Measures Branch

12/23/08

Test: A three inch polyester paint brush was coated with Sherwin Williams Classic Pro Interior Alkyd Semi-Gloss Enamel then cleaned in separate tests by using several solvents in a one gallon open topped bucket for one minute each. The weight of the bucket, lid, brush (with paint and washed), and solvent were recorded. The room temperature was 78 F.

	Wt., g, Before Cleaning	Wt., g, After Cleaning	Wt. Loss, g
Solvent used:			
<b>Acetone</b>	<b>(MIR = 0.43)</b>		
Wash 1	1183.6	1176.5	7.1
Wash 2	1191.8	1186.6	5.2
Wash 3	1202.2	1197.2	5
Wash 4	1209.1	1206.2	2.9
Wash 5	1219.1	1214.9	4.2
Average			4.88
<b>OZONE PER WASH, Wt. loss of 4.88 g x 0.43 MIR =</b>			<b>2.0984 g</b>

Solvent used:			
<b>Regular Mineral Spirits (Present Paint Thinner)</b>	<b>(MIR = 1.82)</b>		
Wash 1	1053.3	1053	0.3
Wash 2	1068.4	1068.2	0.2
Wash 3	1076.9	1076.6	0.3
Wash 4	1092	1091.8	0.2
Wash 5	1100.4	1100.1	0.3
Average			0.26
<b>OZONE PER WASH, Wt. loss of 0.26 g x 1.82 MIR =</b>			<b>0.4732 g</b>

Solvent used:			
<b>Odorless Mineral Spirits (MIR = 0.91)</b>			
Wash 1	1172.9	1172.4	0.5
Wash 2	1188.9	1188.4	0.5
Wash 3	1200.7	1200.3	0.4
Wash 4	1209.7	1209.4	0.3
Wash 5	1216	1215.6	0.4
Average			0.42
<b>OZONE PER WASH, Wt. loss of 0.42 g x 0.91 MIR =</b>			<b>0.3822 g</b>

Solvent used:			
<b>KS Pro Paint Thinner (MIR = 0.31)</b>			
Wash 1	1173.3	1173	0.3
Wash 2	1174.7	1174.2	0.5
Wash 3	1173.4	1172.8	0.6
Wash 4	1169.5	1169	0.5
Wash 5	1171.4	1171.1	0.3
Average			0.44
<b>OZONE PER WASH, Wt. loss of 0.44 g x 0.31 MIR =</b>			<b>0.1364 g</b>

**Overall Results:**

**Acetone creates 4 times more ozone than Present Paint Thinner.**

**Acetone creates 5.5 times more ozone than Mineral Spirits.**

**Acetone creates 15 times more ozone than KS Pro Paint Thinner.**

COMPANY IDENTITY: PACKAGING SERVICE CO., INC.  
PRODUCT IDENTITY: PAINT THINNER NEXT  
NEW MSDS DATE: 11/09/2007

DATE: 11/09/07  
PAGE 1 OF 5

**MATERIAL SAFETY DATA SHEET**

This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1, using the International Chemical Safety Cards of the Global Harmonizing System.  
**THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)**  
IMPORTANT: Read this MSDS before handling & disposing of this product.  
Pass this information on to employees, customers, & users of this product.

**SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY**

PRODUCT IDENTITY: PAINT THINNER NEXT  
COMPANY IDENTITY: PACKAGING SERVICE CO., INC.  
COMPANY ADDRESS: 1904 MYKAWA ROAD  
COMPANY CITY: PEARLAND, TX 77581  
COMPANY PHONE: 1-281-485-1458  
CHEMTREC PHONE: 1-800-424-9300

**SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS**

CONTAINS: 30-40% PETROLEUM DISTILLATE (64742-47-8),  
Number in parentheses is CAS #, number in brackets is European EC #.

WBPT01

**SECTION 3. HAZARDS IDENTIFICATION**

**RISK STATEMENTS:**

R36/37/38 Can be irritating to eyes, respiratory system and skin.  
R65 Harmful; may cause lung damage if swallowed.

**SAFETY STATEMENTS:**

S2 Keep out of the reach of children.  
S23 Do not breathe gas, fumes, vapor, or spray.  
S24 Avoid contact with skin.  
S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or product label.

**SECTION 4. FIRST AID MEASURES**

**EYE CONTACT:**

For eyes, flush with plenty of water for 15 minutes & get medical attention.

**SKIN CONTACT:**

In case of contact with skin immediately remove contaminated clothing. Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

**INHALATION:**

After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR).

**SWALLOWING:**

Rinse mouth. Do NOT induce vomiting. GET MEDICAL ATTENTION IMMEDIATELY. Do NOT give liquids to an unconscious or convulsing person.

COMPANY IDENTITY: PACKAGING SERVICE CO., INC.  
PRODUCT IDENTITY: PAINT THINNER NEXT  
NEW MSDS DATE: 11/09/2007

DATE: 11/09/07  
PAGE 2 OF 5

WBPT01 SECTION 5. FIRE FIGHTING MEASURES

FIRE & EXPLOSION PREVENTIVE MEASURES

Material will not ignite or support combustion under conditions of normal use. No flash point to boiling. (>200°F)

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE MEASURES:

Avoid unnecessary contact. Can dry and / or irritate skin. Filter respirator for organic vapors if very long term extreme contact is expected.

CONTAINMENT AND CLEAN-UP MEASURES:

Stop spill at source. Dike and contain. Absorb remaining liquid in sand or inert absorbent. Do NOT wash away into sewer.

SECTION 7. HANDLING AND STORAGE

HANDLING

Isolate from oxidizers. Use only with adequate ventilation. Avoid breathing of vapor or spray mist. Avoid contact with skin & eyes. Wear OSHA Standard goggles or face shield if handling for extended or prolonged periods. Consult Safety Equipment Supplier. Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse. Continue all label precautions!

STORAGE

Isolate from strong oxidants. Do not store above 49 C / 120 F. Keep container tightly closed & upright when not in use to prevent leakage.

WBPT01 SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

RESPIRATORY EXPOSURE CONTROLS

A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

VENTILATION

LOCAL EXHAUST : Necessary  
MECHANICAL (GENERAL) : Acceptable  
SPECIAL : None  
OTHER : None

Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

PERSONAL PROTECTIONS:

Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers. Wash at end of each work shift & before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated. Launder or discard contaminated clothing.

COMPANY IDENTITY: PACKAGING SERVICE CO., INC.  
 PRODUCT IDENTITY: PAINT THINNER NEXT  
 NEW MSDS DATE: 11/09/2007

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## SECTION 9. PHYSICAL DATA

APPEARANCE :	Liquid, Milky-White		
ODOR :	Mild		
BOILING RANGE :	100 114 206* C / 212 238 403* F (*=End Point)		
AUTO IGNITION TEMPERATURE :	260 C / 500 F (Lowest Component)		
LOWER FLAMMABLE LIMIT IN AIR (% by vol):	0.9 (Lowest Component)		
FLASH POINT (TEST METHOD):	> 212 (TCC) – NO FLASH TO BOIL		
FLAMMABILITY CLASSIFICATION:	N/A		
GRAVITY @ 68/68 F / 20/20 C :	20.9		
API :	0.90 – 0.93		
SPECIFIC GRAVITY (Water=1) :	7.4 – 7.9		
POUNDS/GALLON :			
VOC'S (>0.44 Lbs/Sq In) :	0.0 Vol. % / 0.0 g/L /	0.000 Lbs/Gal	
TOTAL VOC'S (TVOC) :	32.5 Vol. % / 254.5 g/L /	2.119 Lbs/Gal	
NONEXEMPT VOC'S (CVOC) :	32.5 Vol. % / 254.5 g/L /	2.119 Lbs/Gal	
HAZARDOUS AIR POLLUTANTS (HAPS) :	0.0 Wt. % / 0.0 g/L /	0.000 Lbs/Gal	
VAPOR PRESSURE (mm of Hg)@20 C	16.8		
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C)	0.0		
VAPOR DENSITY (air=1) :	0.8		
WATER ABSORPTION :	Appreciable		
REFRACTIVE INDEX :	NA		

## SECTION 10. STABILITY &amp; REACTIVITY

## STABILITY

Stable under normal conditions.

## CONDITIONS TO AVOID

Isolate from oxidizers, heat, & open flame.

## MATERIALS TO AVOID

Reacts with strong oxidants, causing fire & explosion hazard.

## HAZARDOUS DECOMPOSITION PRODUCTS

Carbon Monoxide, Carbon Dioxide from burning.

## HAZARDOUS POLYMERIZATION

Will not occur.

## WBPT01

## SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL	CAS #	TWA (OSHA)	TLV (ACGIH)	HAP
PETROLEUM DISTILLATES	64742-47-8	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	No

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

MATERIAL	CAS #	CEILING	STEL (OSHA/ACGIH)
	None	Known	None
		Known	Known

## ACUTE HAZARDS

**Eyes** Primary irritation index (rabbit): 1.0 (Maximum score is 110.)

COMPANY IDENTITY: PACKAGING SERVICE CO., INC.  
PRODUCT IDENTITY: PAINT THINNER NEXT  
NEW MSDS DATE: 11/09/2007

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**Skin** Primary irritation index (rabbit): 0.4 (Maximum score is 8.0.)

Acute dermal LD50 (rabbit): 6,000 - 12,000 mg/kg

**Inhalation** Acute 4 hours (rat): > 6 mg/l All rats survived at indicated concentration.

Acute LC50 (rat): > 12.9 mg/l

**Ingestion** Acute oral LD50 (rat): > 15,000 mg/kg

#### SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED

##### CONDITIONS AGGRAVATED

Persons with severe skin, liver or kidney problems should avoid contact or use.

##### CARCINOGENICITY

This product contains no carcinogenic substances.

#### SECTION 12. ECOLOGICAL INFORMATION

##### MAMMALIAN INFORMATION:

##### AQUATIC ANIMAL INFORMATION:

No aquatic environmental information is available on this product. Environmental effects of the substance have not been investigated adequately.

##### MOBILITY

This material is a mobile liquid.

##### DEGRADABILITY

This product is partially biodegradable.

##### ACCUMULATION

Bioaccumulation of this product has not been determined.

#### SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste management options. Recycle / dispose of observing national, regional, state, provincial and local health, safety & pollution laws. If in doubt, contact appropriate agencies.

#### SECTION 14. TRANSPORT INFORMATION

DOT SHIPPING NAME: BULK: Paint Related Material, NOT DOT REGULATED

DRUM LABEL: None

IATA / ICAO: Paint Related Material Not Regulated

IMO / IMDG: Paint Related Material Not Regulated

EMERGENCY RESPONSE GUIDEBOOK NUMBER: NA

COMPANY IDENTITY: PACKAGING SERVICE CO., INC.  
PRODUCT IDENTITY: PAINT-THINNER NEXT  
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WBPT01 SECTION 15. REGULATORY INFORMATION

EPA REGULATION:  
SARA SECTION 311/312 HAZARDS: Acute Health, Fire  
All components of this product are on the TSCA list.

STATE REGULATIONS:  
THIS PRODUCT MEETS REQUIREMENTS OF SOUTHERN  
CALIFORNIA AQMD RULE 443.1 & SIMILAR REGULATIONS

INTERNATIONAL REGULATIONS  
The components of this product are listed on the chemical inventories of the following countries:  
Australia, Canada, China, Europe (EINECS), Japan, Korea, United Kingdom.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:  
HEALTH (NFPA): 1, HEALTH (HMIS): 1, FLAMMABILITY: 0, REACTIVITY: 0

This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING  
See Section 3 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this MSDS) before handling it.

NOTICE

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process. Unless updated, this Material Safety Data Sheet is valid until 11/09/2010.

## 2008 Paint Thinner & Multi-purpose Solvent Workgroup Meeting

### Meeting Agenda

California Air Resources Board  
Monitoring and Laboratory Division Building  
1927 13<sup>th</sup> Street  
Main Conference Room  
Sacramento, CA 95814

Date and Time: **Tuesday, August 26, at 2:30 p.m. (PDT)**  
Call-in Time: **Between 2:15 p.m. and 2:30 p.m.**  
USA Toll Free Number: **(888) 399-8606**  
International Toll Number: **(630) 395-0201**  
Passcode: **Consumer Products**  
Leader: **David Mallory**

1. Welcome
2. Timeline
  - 2003 Consumer & Commercial Products Survey (2003 Survey)
  - 2003 Survey Data Summaries
  - 3 Percent by Weight VOC Limit Initial Proposal for Thinners & Solvents
  - June 2009 Board Hearing
3. Issues
  - Thinner/ Solvents Emissions and Sales
  - Where is 3 Percent VOC Limit Appropriate?
  - District vs. ARB Authority to Regulate Consumer Products
  - Flammability of Acetone
  - Other Issues
4. Closing



**Public Workshop for  
Proposed Amendments  
to the Consumer  
Products Regulation**

**August 27, 2008**

 **California Environmental Protection Agency  
Air Resources Board**

Ongoing Work

### Paint Thinner and Multi-Purpose Solvent Evaluation

- Goal is to determine regulatory strategy
- Technical issues were discussed at a workgroup meeting yesterday
- Survey update needed to capture data on new technologies
- Proposal to be considered at June 2009 board hearing

23

Dec 26 08 05:59p

Doug Raymond

440-474-4999

P. 2  
1 of 2

**Doug Raymond**

**From:** Doug Raymond [djaymond@reg-resources.com]  
**Sent:** Friday, December 26, 2008 5:57 PM  
**To:** 'Michael Hickok'  
**Subject:** FW: <SPAM> RE: Proposed Rule 1143 - Consumer Paint Thinners and Multi-Purpose Solvents

**From:** Naveen Berry [mailto:nberry@aqmd.gov]  
**Sent:** Friday, December 26, 2008 3:33 PM  
**To:** Doug Raymond; Don B Hopps  
**Subject:** RE: <SPAM> RE: Proposed Rule 1143 - Consumer Paint Thinners and Multi-Purpose Solvents

Doug

As Don noted, we will more than likely delay the hearing by a month and I am discussing certain options that would allow your client to retain a portion of their current product offering while we work on a reactivity approach, which I really think will take longer than 6 months to complete....I even think that the 6 months is a bit optimistic and it could be closer to a year, but will really depend on the three levels of agency and especially the public (NGOs) reaching a common ground.

I will call you next week to discuss my thoughts after discussing them in a little more detail with our Executive Management. The presentation will also help me to justify this approach. Thanks for sending it.

Naveen

-----Original Message-----

**From:** Doug Raymond [mailto:djaymond@reg-resources.com]  
**Sent:** Fri 12/26/2008 10:28 AM  
**To:** Don B Hopps  
**Cc:** Naveen Berry  
**Subject:** <SPAM> RE: Proposed Rule 1143 - Consumer Paint Thinners and Multi-Purpose Solvents

Don,

Please find attached presentation. Sorry for the delay.

Doug Raymond  
Raymond Regulatory Resources (3R)  
440-474-4999

**From:** Don B Hopps [mailto:DHopps@aqmd.gov]  
**Sent:** Wednesday, December 24, 2008 4:16 PM  
**To:** djaymond@reg-resources.com  
**Cc:** Naveen Berry  
**Subject:** Proposed Rule 1143 - Consumer Paint Thinners and Multi-Purpose Solvents

Doug,

12/26/2008

Dec 26 08 05:59p

Doug Raymond

440-474-4999

p. 3  
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I was my impression from WM Barr staff that they would be emailing Naveen and/or me a copy of their presentation they gave here at SCAQMD. I've yet to receive it. It's important that Naveen and I receive it because we would like to discuss several parts of that presentation with our management. I realize that today and tomorrow are days when most people will be doing other things in life instead or work so if you could either email the presentation to me in the next day or so or have WM Barr email me the presentation in a day or so, I'll be able to present it to management for discussion. We are currently looking at the possibility of delaying Proposed Rule 1143 for 30 days.

Thanks, Happy Holidays!

12/26/2008

California Air Resources Board - Consumer Products Program

**PAINT THINNER AND MULTI-PURPOSE SOLVENT SURVEY UPDATE  
ATTACHMENT B - Reported Thinners and Solvents from 2003 Survey**

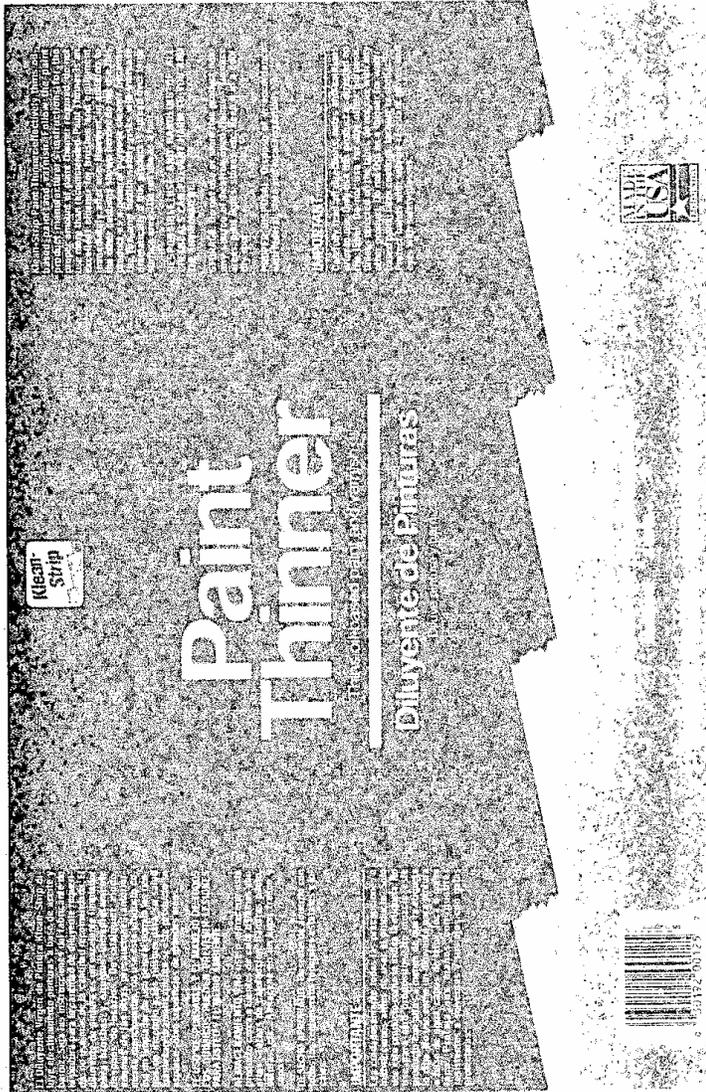
Company: WM Barr		Units Sold in CA: (10/01/2007-09/30/2008)	
	Product Name:	Product Size:	
1	Klean Strip Mineral Spirits	1 qt	
		1 gal	
		5 gal	
2	Klean Strip Paint Thinner	1 qt	
		1 gal	
		2.5 gal	
		5 gal	
3	Klean Strip VM&P Naptha	1 qt	
		1 gal	
4	Klean Strip Lacquer Thinner	1 qt	
		1 gal	
		5 gal	
5	Klean Strip Boiled Linseed Oil	1 qt	
		1 gal	
		5 gal	
6	Klean Strip Xylene	1 qt	
		1 gal	
7	Klean Strip Japan Drier	1 pt	
8	Klean Strip Turpatine	1 qt	
		1 gal	
9	Klean Strip MEK	1 qt	
		1 gal	
10	Klean Strip Turpentine	1 qt	
		1 gal	
11	Klean Strip Acetone	1 qt	
		1 gal	
12	Klean Strip Denatured Alcohol	1 qt	
		1 gal	
		5 gal	

\*Please attach a completed Form 3 and Form 4 for each product not listed above that meets the definitions listed in Attachment A. <http://www.arb.ca.gov/consprod/regact/tscpwg/tscpwg.htm>

**Certification:** I certify that the information on this page and any attached pages is true, accurate, and correct.

**Authorized Signature/Date:**

Questions? Contact Trish Johnson at [tjohnson@arb.ca.gov](mailto:tjohnson@arb.ca.gov) or (916) 445-3365 Page 1 of 1 11/2008



GPT1(KLTHO) 1/28/03 1:46 PM Page 1

**CAUTION, COMBUSTIBLE. KEEP AWAY FROM FIRE. VAPORS MAY CAUSE DROWSINESS OR DIZZINESS. VAPORS MAY BE HEAVIER THAN AIR AND ACCUMULATE IN LOW AREAS. VAPORS MAY CAUSE IRRITATION TO THE EYES, NOSE AND THROAT. VAPORS MAY CAUSE IRRITATION TO THE SKIN. VAPORS MAY CAUSE IRRITATION TO THE RESPIRATORY TRACT. VAPORS MAY CAUSE IRRITATION TO THE MUCOUS MEMBRANES OF THE MOUTH AND THROAT. VAPORS MAY CAUSE IRRITATION TO THE EYES, NOSE AND THROAT. VAPORS MAY CAUSE IRRITATION TO THE SKIN. VAPORS MAY CAUSE IRRITATION TO THE RESPIRATORY TRACT. VAPORS MAY CAUSE IRRITATION TO THE MUCOUS MEMBRANES OF THE MOUTH AND THROAT.**

**PRECAUCION, COMBUSTIBLE. MANTENGALO LEJOS DEL FUEGO. LOS VAPORES PUEDEN SER MAS PESADOS QUE EL AIRE Y SE ACUMULAN EN BAJAS AREAS. LOS VAPORES PUEDEN CAUSAR IRRITACION EN LOS OJOS, NARIZ Y GARGANTA. LOS VAPORES PUEDEN CAUSAR IRRITACION EN LA PIEL. LOS VAPORES PUEDEN CAUSAR IRRITACION EN LAS MEMBRANAS MUCOSAS DE LA BOCA Y GARGANTA.**

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**Responses to Comment Letter #4**  
(WM Barr, December 30, 2008)

- 4-1 SCAQMD staff has consulted with representatives from both local and state fire departments regarding the flammability, safety and health concerns about acetone. SCAQMD staff was informed that under the Uniform Fire Code, solvents such as acetone, butyl acetate, MEK, and toluene and xylene are all Class I flammable liquids but that xylene presents the highest health hazard of all the solvents listed. While the fire department representatives acknowledged that acetone is more flammable than the conventional solvents it would be replacing, it has the same flammability rating. The fire department representatives, including those from OSFM, have also emphasized that all of the solvents listed should be used with extreme caution. SCAQMD staff has reviewed and identified the availability of various compliant technologies for consumer paint thinners and multi-purpose solvents and has analyzed safety issues associated with flammability of acetone. SCAQMD staff has not concluded that acetone poses no impact; instead SCAQMD staff has concluded that acetone poses a similar hazard compared to most of the solvents it would be replacing.

The SCAQMD Governing Board has previously adopted other SCAQMD rules (Rules 1113, 1122, 1136, 1171) that increased the use of acetone. Further, SCAQMD staff has extensively analyzed the potential flammability impacts in the environmental assessments prepared for each of these rules, including consultations with representatives from local fire agencies who indicated that acetone does not pose a greater risk than other conventional multi-purpose solvents in use today, including lacquer thinners, MEK, xylene, et cetera. Nonetheless, SCAQMD staff is continuing to work with CARB and consult the OSFM concerning the flammability issues with acetone as well as all conventional and replacement solvents. Regarding discussions with OSFM staff, see the responses to Comments 1-5, 2-1, 2-10 and 2-12.

In concept, SCAQMD staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds, e.g., lacquer thinner, paint thinner, toluene, et cetera., that have relatively low MIR values. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. Further, CARB staff has indicated that, effective and efficient enforcement of the aerosol coatings rule, which uses a reactivity-based control approach, has been an issue over the past few years, especially with regard to formulation data. Thus, SCAQMD staff plans to work closely with CARB, USEPA, the American Chemistry Council (ACC), other industry members and the public to address these issues. Further the Governing Board package for PR 1143 will include a resolution that will commit SCAQMD staff to evaluate the feasibility in a stakeholder working group of a reactivity-based approach for thinners.

SCAQMD staff believes that it is necessary to take the time to fully evaluate alternative ozone control strategy that utilizes reactivity of different VOCs.

SCAQMD staff recognizes that CARB staff is currently preparing a proposal for a statewide regulation for thinners and solvents, with a scheduled public hearing date of June 2009<sup>21</sup>. However, CARB staff has not provided any draft rule language or discussed potential rule implementation dates with SCAQMD staff. Additionally, because CARB has not yet released any specific information about a potential rule regulating this category, it is unclear whether or not a public hearing date of June 2009 is realistic. As a result, SCAQMD staff believes that an expedited rulemaking is necessary to implement CTS-04 in a timely manner. PR 1143 seeks to reduce VOC emissions by 9.75 tons per day, a 95.7 percent reduction from the current inventory of 10.2 tons per day. SCAQMD staff is working closely with CARB and plans to make available all supporting documents to CARB, as SCAQMD staff has done for the last two iterations of the SCAQMD rules implementing the Suggested Control Measure for Architectural Coatings.

The SCAQMD appreciates WM Barr's initiative to conduct a retailer survey. Although SCAQMD staff provided input on the draft, mostly to include some key follow-up questions, staff has not received the results of the actual final survey conducted in November 2008. In particular, SCAQMD staff is interested to review the questions that were asked in the survey as well as the data and responses. Furthermore, subsequent to receiving some consolidated data from WM Barr, staff has requested additional detailed data, including the actual survey text, clarifications, and highlighted contradictions in some results. To date, SCAQMD staff has not received the actual survey nor the clarifications sought from WM Barr. Without being provided the opportunity to conduct an independent, thorough review of the survey and the results to determine whether the survey is adequate and unbiased, SCAQMD staff cannot fully comment on WM Barr's claims, which have not been supported by substantial evidence.

- 4-2 SCAQMD staff recognizes that CARB staff is currently preparing a proposal for a statewide regulation for thinners and solvents, with a scheduled public hearing date of June 2009<sup>22</sup>. However, CARB staff has not provided any draft rule language or discussed potential rule implementation dates with SCAQMD staff. Additionally, because CARB has not yet released any specific information about a potential rule regulating this category, it is unclear whether or not a public hearing date of June 2009 is realistic. As a result, SCAQMD staff believes that an expedited rulemaking is necessary to implement CTS-04 in a timely manner. PR 1143 seeks to reduce VOC emissions by 9.75 tons per day, a 95.7 percent reduction from the current inventory of 10.2 tons per day. SCAQMD staff is working closely with CARB and plans to make available all supporting

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<sup>21</sup> Letter from Janette M. Brooks, CARB to Don Hopps, SCAQMD; November 14, 2008.

<sup>22</sup> Letter from Janette M. Brooks, CARB to Don Hopps, SCAQMD; November 14, 2008.

documents to CARB, as SCAQMD staff has done for the last two iterations of the Suggested Control Measure for Architectural Coatings.

During the rule promulgation process, CARB staff has raised concerns over fire hazards associated with acetone use. In response to these past concerns over increased fire hazards, SCAQMD staff has consulted with representatives from both local and state fire departments regarding the flammability, safety and health concerns about acetone. (See Exhibits A and B as part of the responses to Comment Letter #1.) While the fire department representatives acknowledged that acetone is more flammable than the conventional solvents it would be replacing, although it has the same flammability rating. The fire department representatives, including those from OSFM, have also emphasized that all of the solvents listed should be used with extreme caution. SCAQMD staff has reviewed and identified the availability of various compliant technologies for consumer paint thinners and multi-purpose solvents and has adequately analyzed the safety issues associated with flammability of acetone. Further, SCAQMD staff has provided a copy of the proposed rule, the draft staff report and Draft EA to the OSFM representatives. A conference call with OSFM staff indicated that OSFM will only submit comments if they have concerns with PR 1143. To date, no comments have been submitted by OSFM relative to the analysis of acetone. Nonetheless, SCAQMD staff is continuing to work with CARB and consult with the OSFM concerning the flammability issues with acetone as well as all conventional and replacement solvents. See also the response to Comment 1-5. With regard to individual points made in CARB's letter, see the responses to Comments 45, 46, 47 and 48 in the Staff Report for PR 1143.

- 4-3 SCAQMD staff is familiar with the reactivity approach and has actively participated in and funded research projects pertaining to establishing MIR values for different VOCs. Further, SCAQMD staff recognizes the low MIR values associated with the compounds that are considered exempt under the traditional VOC mass-based regulatory scheme as well as the potential flexibility of an alternate ozone control strategy. In concept, SCAQMD staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds that have a relatively low MIR value. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. Further, CARB staff has indicated that, effective and efficient enforcement of the aerosol coatings rule, which is a reactivity-based control approach, has been an issue over the past few years, especially with regard to formulation data. Thus, SCAQMD staff plans to work closely with CARB, USEPA, the American Chemistry Council (ACC), other industry members and the public to address these issues. Further the Governing Board package for PR 1143 will include a resolution that will commit SCAQMD staff to evaluate the feasibility in a stakeholder working group of a reactivity-based approach for thinners. SCAQMD staff believes it is necessary to take the

time to fully evaluate alternative ozone control strategy that utilizes reactivity of different VOCs.

- 4-4 Although WM Barr's representatives have expressed "concern over the increased fires hazards" of acetone in Comment 4-1, the provided table indicates that approximately 19 percent of WM Barr's total existing sales volume (the third largest amount of product sold) is acetone suggesting that WM Barr is well established in the acetone market and is capable of properly manufacturing, storing, and distributing the product, regardless of its flammability. Further, while the table does not specify how the proposed MIR limits were developed, it seems that the values are product-weighted. With the exception of acetone and paint thinner, the proposed MIR limits are almost two and a half times greater than the average MIR for exempt solvents. While a reactivity-based approach could potentially account for ozone contribution from exempt solvents, the proposed MIR limits cannot be greater than the MIR values of exempt compounds if the overall goal of an alternative ozone control strategy must show equivalent or greater ozone control than the traditional mass-based approach. Since PR 1143, like all other of SCAQMD's VOC-reducing rules, was developed using the mass-based approach, it would be more appropriate to evaluate WM Barr's approach as part of the commitment to further evaluate the feasibility of a reactivity-based approach in the stakeholder working group.
- 4-5 The manufacturers of alternative, compliant, multi-purpose solvents, paint thinners, and lacquer thinners have testified at the public workshop for PR 1143, CARB meetings, and working group meetings that they can reformulate their products to match the existing properties of conventional multi-purpose solvents and paint thinners. SCAQMD staff has identified several products used for thinning that use exempt solvent (e.g., acetone, PCBTF) and soy-based technology that will comply with the 25 g/L VOC limit. These are summarized in Table 4 of the Final Staff Report. Discussions with developers of soy-based technology have indicated that there are products available that are blends of exempt solvents with soy-based products that are effective in satisfying a full spectrum of cleaning and thinning needs. In addition, there is a compliant lacquer thinner on SCAQMD's certified Clean Air Solvent (CAS) list that is currently available and in use both for thinning and clean-up. The Preliminary Staff Report prepared for PR 1143 in October 2008 contained a list of all available CAS products along with their URLs for accessing the information via the internet; all of the products on this list can be used as consumer paint thinners and multi-purpose solvents. Also, during the July 24, 2008 Working Group Meeting for PR 1143, SCAQMD staff referenced the CAS certification program as being a crucial component for achieving initial VOC reductions via SCAQMD Rules 1113 and 1171 as well as achieving additional VOC reductions via PR 1143. On December 10, 2008, a Draft Staff Report for PR 1143 was prepared that included an updated CAS list that identified additional thinners and solvents, which were shown to comply with the proposed VOC limits in PR 1143. SCAQMD staff has also incorporated an interim period in PR 1143 that would allow a 300 g/L VOC limit,

effective January 1, 2010 until January 1, 2011 when the final 25 g/L VOC limit would become effective.

Furthermore, as indicated in the Staff Report for PR 1143, the volume of solvent-based coatings currently being used has been substantially reduced as a result of the increasingly stringent amendments to SCAQMD Rule 1113; the majority of the sales data shows waterborne coatings, including lacquers, comprise most of the coatings. Contrary to the results provided by WM Barr, surveys undertaken by both CARB and SCAQMD as part of the rule development process for Rule 1113 indicate that coating applicators do not engage in widespread illegal thinning, and even when thinning occurs, the coatings VOC content limits are not exceeded<sup>23</sup>. SCAQMD staff has also reviewed the labels and technical data sheets for several solvent-based coatings available, currently sold under Rule 1113's Averaging Compliance Option, and found that all the manufacturers indicate that "Thinning is not recommended" or that the user "should not thin" the paints as supplied. Thus, based on past survey data, there is no reason to expect that illegal thinning practices will increase as a result of implementing PR 1143.

SCAQMD staff has submitted multiple requests to WM Barr for the actual survey conducted in November 2008 as well as the recent survey results because WM Barr did not explain how it conducted the survey. Further, WM Barr's bold assertion of non-compliance is unsubstantiated. To date, SCAQMD staff has not received these documents and explanations from WM Barr. In particular, SCAQMD staff is interested in reviewing the questions that were asked in the survey to learn why the contractors claimed that they are using lacquer thinners and paint thinners when lower VOC paint thinners are currently available. In addition, since architectural coatings currently sold in the district are mainly waterborne, SCAQMD staff would like to learn the following: 1) why contractors would need to use lacquer thinners and paint thinners at all; 2) what percentages of each product were used for thinning; and 3) what percentage of these products were used for clean-up. Thus, SCAQMD staff has not been provided the opportunity to conduct an independent, thorough review of the survey to determine whether the survey is adequate and unbiased.

Because professional painting contractors can easily purchase solvent-based cleaners and thinners with high VOC contents at retail outlets, non-compliance with Rule 1171 can potentially occur. However, the commentator's conclusion that the compliant products do not work is speculation and unsupported by the evidence collected as part of the process for developing Rule 1171, which includes an extensive analysis on the performance of compliant solvent technologies specifically for the clean-up of all types of coatings, including high performance urethanes zinc enriched primers, and epoxy industrial maintenance coatings.

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<sup>23</sup> Final Environmental Assessment for Proposed Amended Rule 1113 – Architectural Coatings; May 23, 2006; SCAQMD No. 060405MK.

- 4-6 SCAQMD staff disagrees with the commentator's opinion that "any products that claim to remove these two contaminants (grease and oil) are not subject to this rule." Contrary to the comment, the term "Multi-Purpose Solvent" is defined in PR 1143 as solvents that do not display specific use instructions on the product container and also products that do not specify an end-use function or application on the product container. Further, the purpose of PR 1143 is to regulate consumer paint thinners and multi-purpose solvents through the tracking of consumer purchase data relative to paint thinners and multi-purpose solvents while Rule 1171 regulates solvent cleaning activities as part of a business. Even though general purpose degreasers are subject to CARB rule requirements, the SCAQMD may regulate products that are not currently regulated by CARB such as consumer paint thinners and multi-purpose solvents. Further, PR 1143 does not regulate products labeled as general purpose degreasers. As indicated in the comment letter, products are not always used for their intended purpose such as the use of lacquer thinner or paint thinner for clean-up operations.
- 4-7 The CAS list was conceived as part of the rule development process for Rule 1171 and primarily relies on a mass-based approach with a maximum VOC limit of 25 g/L even though there is also a reactivity caveat included in the CAS list qualifying criteria intended to act as a "not to exceed" ceiling. However, it is important to note that the reactivity caveat is not meant to imply that products on the CAS list will increase ozone because of their MIR ratings. Even though the MIR of toluene (3.97) is higher than the MIR of odorless mineral spirits (0.91), the mass-based VOC limit of 25 g/L greatly limits the amount of toluene or other VOC-based solvents that can be included in a formulation that would qualify for inclusion on the CAS list. The reduction in emissions anticipated from the use of a low-VOC solvent that meets the 25 g/L limit compared to the VOC-based conventional solvents, is in excess of 95 percent, which would more than offset the indicated differences in MIR ratings. It should also be pointed out that products included on the CAS list are mostly comprised of technologies with MIR values well below those of mineral spirits and other conventional solvents used today. While the mass-based approach has been used by SCAQMD for many years, including the development of PR 1143, SCAQMD staff has committed in the resolution for PR 1143 to continue working with the ACC, CARB, USEPA, stakeholders and the public to determine the feasibility of a reactivity-based approach for future rule development efforts.
- 4-8 SCAQMD staff strongly disagrees with the commentator's interpretation of the definition of multi-purpose solvent. PR 1143 states that "multi-purpose solvents are solvents that do not display specific use instructions on the product container or packaging; products that do not specify an end-use function or application on the product container or packaging and solvents used un institutional facilities, except for laboratory reagents used in analytical, educational, research, scientific or other laboratories..." As explained in the Staff Report for PR 1143, this definition means that these products may not be currently marketed as such but they can be utilized for the categories regulated by PR 1143. The Staff Report for

PR 1143 also indicates that 102 of the 171 Clean Air Solvents (CAS), plus an additional 62 products that also have utility for the categories regulated by PR 1143, were products that are considered to be compliant with PR 1143. With regard to the comment about products on the CAS list contributing to increased ozone levels, see the response to Comment 4-7.

- 4-9 SCAQMD staff has reviewed and identified the availability of various compliant technologies for multi-purpose solvents and paint thinners, analyzed safety issues associated with flammability of exempt solvents, and lastly has included an exemption for the sale and use of thinners specifically designated to thin industrial maintenance coatings. SCAQMD staff recognizes the innovative work conducted by some manufacturers and further recognizes that additional blends are constantly being developed for use. This trend is expected to continue as the implementation of PR 1143 requirements creates an additional market demand for low-VOC multi-purpose solvents and paint thinners. As previously mentioned in the response to Comment 4-7, the criteria for inclusion on the CAS list is mass-based and not reactivity-based. The products shown in the CAS list have less than 25 g/L material VOC, and are mostly comprised of technology with MIR values well below those of mineral spirits (0.91) and other conventional solvents used today. Acetone has a MIR of 0.43 and the methyl esters (although few have established MIR values) have a MIR of approximately 0.4. The Draft EA prepared for PR 1143 contains a comprehensive analysis of the compliant technologies and compares the hazards of these technologies with the conventional high-VOC products. The EA also evaluates the toxicity of conventional and compliant cleaning formulations. Lastly, as indicated in the Staff Report for PR 1143, SCAQMD staff also relies on extensive analyses conducted during the rule development process for other SCAQMD Rules 1113, 1171, and 1122. All of these documents are available to the public.
- 4-10 Contrary to the comment, the Draft EA for PR 1143 contains an extensive analysis of flammability, health and safety risks of acetone, methyl acetate and PCBTF and the analysis concluded that the potential adverse effects were less than significant when compared to the existing setting (baseline) of conventional solvent use. This conclusion does not mean there is no risk from compliant products; instead, it means that the risk from compliant products is comparable to the risk from conventional products. As a result, the overall risk after implementing PR 1143 does not change appreciably from the current risk. See also the responses to Comments 1-8, 1-9, 1-10, and 2-11. Regarding WM Barr's experiment that involved lighting a mixture of paint and acetone on fire, see the response to Comment 4-35.
- 4-11 While there are some bio-based solvents available that do not meet the 25 g/L VOC limit, SCAQMD staff has found several products, including some using soy-based technology, that would comply with the 25 g/L VOC limit without needing a low vapor pressure solvent exemption. Several of these soy-based products have been certified and are included on the CAS list. Discussions with

developers of soy-based technology have indicated that there are products available that are blends of exempt solvents with soy-based products that are effective in satisfying a full spectrum of cleaning and thinning needs. For more discussion regarding soy-based products, see the response to Comment 2-26. For the list of soy-based technology, see the Appendix to the Staff Report for PR 1143.

- 4-12 The purpose of Table 4 in the Draft Staff Report for PR 1143 is to identify available products that meet the compliance requirements of PR 1143. Since the products identified in Table 4 were selected using a mass-based, not reactivity-based, approach, reactivity values were not included. The products listed in Table 4 are mostly comprised of technology with MIR values that are well below the MIR of mineral spirits as well as other conventional solvents in use today. The MIR for mineral spirits ranges between 0.91 and 1.82. Acetone has a MIR of 0.43 and methyl esters (although few have established MIR values) have a MIR of approximately 0.4.

Regarding the comments pertaining to Low-VOC Lacquer Thinner, this product was formulated by Bortz Distributing and is currently available under Packaging Service Companies Crown line, #LVLT 01, Low VOC Lacquer Thinner. Even though this product contains acetone, SCAQMD staff disagrees with the opinion that this product would pose a new significant fire risk when compared to the existing setting (baseline) of conventional solvents currently in use. See also the responses to Comments 4-1, 4-3, and 4-10.

Regarding the comments pertaining to Sunnyside's Green Envy, see the response to Comment 4-13.

Regarding the comments pertaining to Crown Paint Thinner NEXT, initial review of the MSDS for this product indicated that it had a VOC content less than 25 g/L. For this reason, it was included in Table 4 of the Draft Staff Report. However, subsequent discussions with the product's manufacturer indicated that it actually contained 30 to 40 percent petroleum distillates such that the actual VOC content was much higher than 25 g/L. As part of the rule development process, PR 1143 was revised to include an interim VOC limit of 300 g/L, effective January 1, 2010. While Crown Paint Thinner NEXT does not comply with the final VOC limit of 25 g/L, it would comply with the interim VOC limit of 300 g/L VOC.

Regarding the comments pertaining to Ramco Specialty Products' Soylient Gold Soy-Based Degreaser, Table 4 in the Draft Staff Report for PR 1143 does not describe the products listed as paint thinners, but rather the products are listed as "Low-VOC Products Currently Available" which could include paint thinners. While this product is also regulated by SCAQMD Rule 1171 for a solvent cleaning operation where solvent cleaning is conducted as part of a business, PR 1143 also applies to the consumer use of this product.

Regarding the comments pertaining to Deft Finishes' VOC Exempt Reducer IS-256, Table 4 in the Draft Staff Report for PR 1143 identifies this as an existing product that is a low-VOC viable alternative capable of meeting the requirements of PR 1143. Deft representatives indicated that while this product was originally intended for the industrial market, it could be utilized by the consumer market. It is important to note that architectural coatings sold in the district are primarily waterborne coatings that do not require thinning or are thinned with water. However, in special cases where industrial maintenance (IM) coatings are used, PR 1143 includes an exemption for IM coatings for certain solvent applications.

Regarding the comments pertaining to Carboline's Thinner 243E, Table 4 in the Draft Staff Report for PR 1143 identifies this as an existing product that is a low-VOC viable alternative capable of meeting the requirements of PR 1143. This product has similar compounds in its formulation as WM Barr has for its acetone and lacquer thinners, both of which are sold by WM Barr in large volumes. Further, both of these products have container labels that state "Danger: Extremely Flammable" warning labels.

- 4-13 SCAQMD staff reviewed the discussion pertaining to viscometer testing of Sunnyside's Green Envy Paint Thinner and based on data submitted, the test concluded that the Green Envy product actually thickened the paint rather than producing the desired result to reduce the viscosity of the paint. This test involved adding Green Envy in 0, 10, 20, 30, 40 and 50 percent concentrations to a Glidden Paint, specifically Glidden Ultra Hide Oil/Alkyd Semi Gloss.

SCAQMD staff reviewed Glidden's website but could not find an exact name match for the product tested. There are two products that have similar names: Product 1 - "ULTRA-HIDE® , Interior Latex Semi-Gloss Enamel, Wall & Trim Enamel, 1416-XXXXV" and Product 2 - "ULTRA-HIDE®, Interior/Exterior Oil/Alkyd, Semi-Gloss Enamel, 3517-XXXX." The technical data sheet (TDS) for Product 1 identifies the VOC content as 49 g/L which is compliant for use in the district since the current VOC limit in Rule 1113 is 50 g/L for the "general non-flat" product category. However, the TDS indicates in the "DIRECTIONS FOR USE" section that no thinning is required for this product. Therefore, thinning Product 1 would be inconsistent with the manufacturer's instructions for use.

Similarly, the TDS for Product 2 identifies the VOC content as 380 g/L which would make this product non-compliant for use in the district since it exceeds the current VOC limit of 50 g/L. However, the SCAQMD has an averaging program for architectural coatings with an upper VOC limit for a non-flat coating established at 250 g/L. Even still, Product 2 exceeds the upper VOC limit and, thus, would not be eligible for the SCAQMD's averaging program. Lastly, the TDS indicates in the "DIRECTIONS FOR USE" section that the user should not thin Product 2. Thus, like Product 1, the experiment of thinning Product 2 with

Green Envy is contrary to specific instructions advising against thinning the product.

In conclusion, the commentator's experiment described above is not relevant to this analysis because the commentator added Green Envy thinner to products that are either illegal for use in the District and/or not supposed to be thinned (as instructed by the manufacturer). Hence, the commentator's experiment does not reflect Green Envy's performance with respect to thinning products. As listed on the Green Envy product manufacturer's technical data sheet, this product is effective for thinning oil and latex based paints, stains, and varnishes and staff has no reason to question the accuracy of these claims. The commentator is encouraged to follow the directions of the coating manufacturer and experiment with the other thinners listed in Table 4 of the Final Staff Report for PR 1143.

- 4-14 The KS Pro product has a VOC content slightly higher than 300 g/L and a possible product weighted MIR of 0.3 and would not comply with the final VOC limit in PR 1143, but it may comply with the interim VOC limit of 300 g/L for one additional year. SCAQMD staff intends to use this time to evaluate the potential of an alternate reactivity-based approach for thinners. However, as indicated in the Draft Staff Report for PR 1143, especially in Section XV – Public Comments and Responses, regardless of flammability, the sales of solvent-based coatings that would be thinned with mineral spirits based products are very limited in light of the low VOC limits in Rule 1113. Further, for industrial maintenance coatings that still rely on some solvent-based technologies, PR 1143 contains an exemption for thinners specifically designated for industrial maintenance uses.
- 4-15 With regard to CARB's rulemaking schedule, see the responses to Comments 2-3 and 4-2.
- 4-16 Contrary to the comment, the 25 g/L VOC limit is feasible in most, if not all, substitutes for consumer paint thinners and multi-purpose solvents. However, PR 1143 has been revised to include an interim VOC limit of 300 g/L effective January 1, 2010 in addition to the final VOC limit of 25 g/L, effective January 1, 2011. SCAQMD staff has discussed the proposed final VOC limit of 25 g/L with manufacturers of compliant thinners; the manufacturers indicated that they would be able to continue to formulate products that have the same or similar performance characteristics as conventional high-VOC paint thinners and lacquer thinners. However, because industrial maintenance coatings need specific thinners and reducers, PR 1143 includes an exemption that will allow the sale and use of specific thinners to be used for thinning industrial maintenance coatings. Lastly, since CARB does not currently regulate thinners and multi-purpose solvents, the SCAQMD has the authority to regulate these products in a manner that meets SCAQMD guidelines for definitions, sell-through and recordkeeping.

- 4-17 SCAQMD staff did not participate in the discussions between CARB staff and the OSFM representatives, so it is unclear how CARB staff described PR 1143 to the OSFM staff and to what extent OSFM staff expressed fire hazard concerns. With regard to CARB's and OSFM staff's concerns over increased fire hazards, see the responses to Comments 1-5 and 4-2. With regard to CARB's inventory and rulemaking schedule, see the responses to Comments 2-3 and 4-2.
- 4-18 Contrary to the opinion expressed in this comment, the Draft Socioeconomic Assessment prepared for PR 1143 shows that the average annual total cost of PR 1143 is \$12 million. Of the two scenarios analyzed, for Scenario A, nearly all of the cost would be incurred by consumers except for minor application fees for manufacturers and distributors to obtain a facility SCAQMD identification number to sell their products. Further, prices for products will increase by \$3 to \$35 per gallon for consumers, which, represents a 14 percent to 66 percent change from existing prices. However, the majority of the price increases are expected to be around \$8 per gallon. For Scenario B, the cost incurred by consumers in Scenario A would now be borne by manufacturers of thinners and solvents, of which \$3 million would be borne by local manufacturers.

Contrary to the opinion expressed in this comment, it is incorrect to assume that the market for retailers will be completely eliminated. SCAQMD staff believes that the current higher VOC products will be replaced with compliant products that may have equal or greater retail value. With regard to increased fire risks and potential cost increases, since consumer paint thinners and multi-purpose solvents are already in use at existing residential, industrial, or commercial sites in urban areas where wildlands are typically not prevalent, increased risk of loss or injury associated with wildland fires is not expected to occur as a result of implementing PR 1143 to any greater extent than is currently the case with conventional products. Therefore, there is no evidence to support the claim that fire insurance rates would increase as a result of implementing PR 1143

- 4-19 SCAQMD staff strongly disagrees with the opinion expressed in this comment that the Draft EA is inadequate because it does not meet the requirements of CEQA. On the contrary, the Draft EA complies with all relevant substantive and procedural requirements and the Draft EA comprehensively identifies potential risks associated with acetone use as well as other replacement and conventional solvents. (SCAQMD staff assumes that commentator is referring to Public Resources Code (PRC) §40400 et. seq. as the criterion for the Draft EA for PR 1143 to meet the requirements of CEQA. PRC §40400 contains requirements applicable to the California Integrated Waste Management Board and is not applicable in this context.)

The commentator's suggestion that PR 1143 will result in potential increases in ozone formation is speculative and unsubstantiated. On the contrary, the air quality analysis in the Draft EA demonstrates that PR 1143 will provide substantial reductions in VOC emissions and, therefore, a reduction in ozone

formation. See the responses to Comments 2-4, 3-6, and 4-1 relative to VOC emission reductions and reactivity.

The commentator's suggestion that the one-year sell-through period will generate significant adverse solid/hazardous waste impacts due to disposal of unsold product is not supported by any evidence. The one-year sell-through provision is specifically designed to provide the necessary time for retailers and distributors to plan ahead and eliminate their inventory of higher-VOC products and phase-in the lower-VOC compliant products, effective January 1, 2010. So if PR 1143 is adopted in March 2009, there will be 10 months before the effective date of January 1, 2010 for the manufacturers, distributors and retailers to stop manufacturing the higher-VOC products and begin manufacturing the lower-VOC compliant products. Further, the retailers and distributors would have an additional 12 months, until January 1, 2011 to sell the remaining inventory provided that it was manufactured prior to January 1, 2010.

Enforcement of other SCAQMD rules with similar sell-through provisions, such as Rules 1113 and 1171, has indicated that the manufacturers were able to eliminate their inventory by the compliance date. For any manufacturer who continues to manufacture and supply high-VOC products until the last possible day allowed by the rule, they may risk having some unsold non-compliant products in their inventory. SCAQMD staff has heard informal comments from an industry member during and after various rulemaking meetings that the unsold inventory of the high-VOC products could be re-distributed outside the district to other areas such as San Diego and Ventura counties, instead of being disposed of as hazardous waste. Actions that could potentially result in non-compliance with the proposed project resulting in disposal of non-compliant inventory are considered to be speculative, and, therefore, not reasonably foreseeable. CEQA Guidelines §15145 states that if a lead agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact. Therefore, the possibility that non-compliant products would be disposed of at a landfill rather than re-distributed to areas outside the district is considered to be speculative and is not considered further. See also the response to Comment 2-2.

- 4-20 In concept, SCAQMD staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds that have a relatively low MIR value. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. SCAQMD staff plans to work closely with CARB, USEPA, the American Chemistry Council (ACC), other industry members and the public to address these issues. Further the Governing Board package for PR 1143 will include a resolution that will commit SCAQMD staff to evaluate the feasibility of a reactivity-based approach for thinners.

With regard to the comment that the Draft EA fails to consider the “superior alternative regulatory approach,” implies that the Draft EA is required to consider and discuss alternatives to the proposed project as well as the environmentally superior alternative. On the contrary, the Draft EA that was prepared for PR 1143 is equivalent to a Negative Declaration, because no significant impacts were identified. Since no significant impacts were identified, no mitigation measures or alternatives analyses are necessary or required (CEQA Guidelines §15252 (2)(B)).

- 4-21 The commentator’s suggestion that the Draft EA does not consider the impacts of acetone as a potential replacement solvent is incorrect. In actuality, acetone is specifically evaluated throughout the Draft EA. In particular, see pages 2-12, 2-18 to 2-30, and 2-37 to 2-43 of the Draft EA. See also the responses to Comments 4-1, 4-3, and 4-10.
- 4-22 The commentator is incorrect to suggest that the “EA has improperly characterized the meanings of NPCA [sic] ratings...” and that they were solely relied upon to analyze the toxic impacts of replacing conventional solvents with potential replacement solvents. The commentator is referring to the NFPA rating system (i.e., NFPA 704: Standard System for the Identification of the Hazards of Materials for Emergency Response) which is a “standard (that) provides a readily recognized, easily understood system for identifying specific hazards and their severity using spatial, visual, and numerical methods to describe in simple terms the relative hazards of a material. It addresses the not only health, but flammability, instability, and related hazards that may be presented as short-term, acute exposures that are most likely to occur as a result of fire, spill, or similar emergency<sup>24</sup>.” However, because the NFPA standard is not applicable to chronic exposures or to non-emergency occupational exposure, the Draft EA considered multiple exposure values set by various government agencies such as threshold limit values (TLVs), permissible exposure limits (PELs), immediately dangerous to life and health (IDLH) levels, and air toxic status for both conventional and replacement solvents. (See pages 2-19 to 2-20 of the Draft EA.) Thus, the Draft EA, contrary to the comment, does not rely on the NFPA ratings alone for evaluating health effects.

NFPA 704 also addresses flammability hazards and contains a flammability classification rating that is based on multiple factors, including flash point, boiling point, evaporation rate, LEL/UEL ratio, auto-ignition temperature, and vapor pressure. Therefore, the NFPA flammability rating is an appropriate indicator of a material’s flammability risk. For these reasons, the Draft EA relied on these ratings to determine the flammability risk for acetone, methyl acetate, and PCBTF as well as for the conventional solvents.

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<sup>24</sup> <http://www.nfpa.org/faq.asp?categoryID=928&cookie%5Ftest=1>

As stated in the Draft EA, acetone has a flammability range (the UEL minus the LEL) of 10.2 percent by volume, and there are other conventional solvents currently in use that are at about the same range or higher than that of acetone such as lacquer thinner at 16.4 percent, denatured alcohol at 15.7 percent, isopropyl alcohol at 10.7 percent and MEK at 9.7 percent. The flammability range for two other replacement solvents, methyl acetate and PCBTF, are 13 percent and 9.6 percent, respectively. Thus, singling out acetone for its flammability without considering the other solvents that have similar or higher flammability ranges is misleading.

- 4-23 Acetone was originally “delisted” as a VOC by the EPA in 1995 because it does not contribute appreciably to ozone formation. In concept, SCAQMD staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds that have a relatively low MIR value. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. SCAQMD staff plans to work closely with CARB, USEPA, the American Chemistry Council (ACC), other industry members and the public to address these issues. Further the Governing Board package for PR 1143 will include a resolution that will commit SCAQMD staff to evaluate the feasibility of a reactivity-based approach for thinners. See also the responses to Comments 2-4, 4-1, 4-3, 4-7, and 4-20.
- 4-24 Based on the traditional VOC mass reduction approach of reducing ozone, which assumes that exempt solvents have no VOC contribution, the SCAQMD has experienced significant reductions in ozone over the past thirty years; however, the region is still designated as extreme non-attainment and significant additional effort is needed to achieve the NAAQS. As indicated in the 2007 AQMP, SCAQMD staff has adopted numerous VOC mass-based control measures, but also acknowledges the nascent reactivity-based approach as a possible alternative ozone control strategy. In concept, SCAQMD staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds that have a relatively low MIR value. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. SCAQMD staff plans to work closely with CARB, USEPA, the American Chemistry Council (ACC), other industry members and the public to address these issues. Further the Governing Board package for PR 1143 will include a resolution that will commit SCAQMD staff to evaluate the feasibility of a reactivity-based approach for thinners.

As discussed in the response to Comment 4-4, the comment does not specify how the proposed MIR limits were developed; it seems that the values are product-

weighted. With the exception of acetone and paint thinner, the proposed MIR limits are almost two and a half times greater than the average MIR for exempt solvents. While a reactivity-based approach could potentially account for ozone contribution from exempt solvents, the proposed MIR limits cannot be greater than the MIR values of exempt compounds if the overall goal of an alternative ozone control strategy must show equivalent or greater ozone control than the traditional mass-based approach.

A detailed analysis of CARB's Reactivity Report for Architectural Coatings survey shows usage of other mineral spirits with significantly higher MIR values and are often used in formulations of paint thinners and lacquer thinners, including WM Barr's formulations. Nonetheless, directly comparing mineral spirits (IIC only) to acetone in terms of reactivity shows that an emission reduction would occur as long as acetone usage was less than twice the mineral spirits usage. This is consistent with the usage levels observed from companies that have switched from high VOC clean-up solvent to ultra-low solvents. The commentator provides no evidence to support its claim that acetone usage will result in 20 to 30 times higher emissions. SCAQMD staff's assessment indicated that more than twice the amount of acetone will be needed to accomplish the same task as compared to mineral spirits with the lowest MIR value. Some previous studies have shown a maximum increase of 20 percent acetone as compared to mineral spirits, which would still result in an overall ozone reduction. Lastly, PR 1143 includes a provision in paragraph (d)(4) that requires containers to be kept closed to minimize the evaporation of all solvents, including acetone-based thinners and clean-up solvents.

As was previously mentioned, paragraph (d)(4) of PR 1143 requires containers to be kept closed to minimize evaporation of all solvents, including acetone-based thinners and clean-up solvents. Unfortunately, the commentator does not relay any specifics about the actual cleaning of brushes conducted in the evaluation comparing acetone and mineral spirits. For example, the size of the container was not provided and it is not known if the container had a lid. Typically, homeowners pour a small amount of acetone into a small bottle or jar with a resealable cap and swirl their brush in the acetone. Further, the commentator does not describe the type of coating (e.g., solvent-based or waterborne) that was cleaned from the brush. This is especially important to know since waterborne latex paints are predominantly used for architectural purposes and the brushes are cleaned with water.

However, if the soiled brushes were cleaned with a solvent-based product by sloshing the bristles inside a small bottle containing solvent, both brushes would have solvent-soaked bristles. So, if both brushes were laid down to dry by evaporation, both brushes would be expected to lose approximately the same volume of solvent. As this method is typical for when consumers clean their brushes, SCAQMD staff believes that amount of solvent evaporation can be greatly reduced by following proper cleaning techniques and keeping the

containers closed when not in use. Of course, temperature, humidity, and air flow can also affect evaporation rates significantly.

- 4-25 SCAQMD staff disagrees with the opinion expressed in this comment that the Draft EA concludes that acetone will have no impacts. The Draft EA clearly identifies the hazards associated with acetone. The conclusion that hazard impacts from acetone are not significant is based on the fact that conventional products have similar hazards compared to acetone. Therefore, the overall risks from using acetone do not change appreciably from current conditions (i.e., the current baseline or existing setting). With regard to the flammability of acetone, when compared to the currently used, conventional solvents, see response to Comment 1-5.
- 4-26 With regard to the labeling requirements for products, PR 1143 does not contain requirements for manufacturer's to provide cautionary labels. Instead, requirements for labeling of chemical containers come from OSHA's Hazard Communication and Laboratory Safety standards. All hazardous chemicals are required to be properly labeled (full chemical name) unless they are exempted by this standard. OSHA requires labels for any hazardous chemical which is defined as anything that is a physical or health hazard. Physical hazards include flammable and combustible liquids, compressed gasses, explosives, organic peroxides, oxidizers, pyrophorics, and water reactives. Health hazards include the following: carcinogens; reproductive toxins; sensitizers; irritants; corrosives; neurotoxins; hepatotoxins; nephrotoxins; agents that act the hematopoietic system; and agents that damage the lungs, skin, eyes or mucus membranes. Mineral spirits have an NFPA flammability rating of "2" or moderate hazard potential while acetone's NFPA flammability rating is "3" or high hazard potential. Because of these differences, the label warnings will reflect language appropriate to the NFPA ratings for both physical and health hazards.

It is important to note, however, that only mineral spirits, of all the other conventional or replacement solvents, has an NFPA rating of "2." All the remaining solvents have NFPA flammability ratings of "3." Therefore, all solvents with NFPA ratings of "3" will have labels appropriate to each solvent's high hazard potential.

The warning label may contain a single word such as "danger", "warning" and "caution," or may identify the primary hazard, both physical (i.e., water reactive, flammable or explosive) and health (i.e., carcinogen, corrosive, or irritant). Most labels will also provide additional safety information to help protect the worker including, but not limited to, protective measures to be used when handling the material, clothing that should be worn, first aid instructions, storage information and procedures to follow in the event of a fire, leak or spill.

- 4-27 As stated by the commentator, acetone has the lowest flash point of all the conventional and replacement solvents listed at -4°F, while the flash points for

methyl acetate, lacquer thinner, MEK, toluene, isopropyl alcohol, denatured alcohol and VM&P naphtha all have flash points below 56°F, which is well below the flash point of mineral spirits. Since the average temperature in southern California frequently exceeds both 56°F, there is a risk of explosion for all of these conventional and replacement solvents, not just with acetone.

- 4-28 Contrary to the comment, paint thinner is sold under multiple names and is available to the consumer with a variety of formulations. While paint thinner is predominantly referred to as “mineral spirits” or “stoddard solvent” (listed elsewhere in Table 2-6 of the Draft EA), paint thinner is broadly described as being manufactured from petroleum distillates and can be comprised of a blend of multiple solvents, including but not limited to, mineral spirits, naphtha, nonanes (mixture), 1,2,4-trimethyl benzene, ethyl benzene, xylene, diacetone alcohol, n-butyl acetate, methyl isobutyl ketone and cumene. While the majority of the MSDSs for paint thinners reviewed by SCAQMD staff have flash points between 105 °F and 117°F, there are a few paint thinners on the market that are blended with xylene and ethyl benzene and that have lower flash points at 81°F. Thus, the flash point entry for the paint thinner category in Table 2-6 has been updated to reflect a range between 81°F and 117°F and the footnote for this category has been modified to list additional blending components used to manufacture paint thinners. Further, the reference to OxyChem Specialty Business Group in Table 2-6 is applicable only to the data for PCBTF. Table 2-6 has been corrected to reflect this understanding.
- 4-29 With regard to vapor concentration relative to flammability of acetone, see the responses to Comments 1-5, 1-8, 4-1, 4-3, 4-10, and 4-28.
- 4-30 With regard to the OSFM’s position on PR 1143, see the responses to Comments 1-5, 4-2, and 4-17.
- 4-31 Both acetone and methyl acetate have similar chemical characteristics, including the same NFPA flammability classification rating of “3.”
- 4-32 The letter referenced by the commentator focuses on the issue of acetone, MEK and xylene as Class I combustible liquids. Mineral spirits is considered to be a Class II combustible liquid, which means that it has a lesser degree of fire hazard. As noted in the responses to Comments 4-1, 4-10, and 4-25, SCAQMD staff did not conclude that acetone poses no impact. Refer to these responses for further discussion.
- 4-33 Acetone-based products have been available on the consumer market for quite some time and have been used safely and properly by the general public. For example, nail polish remover has historically contained acetone with both 100 percent formulations and 63 percent formulations. In either case, acetone-based nail polish remover has been properly handled, used and stored in households and nail salons throughout the United States for years. To expect that widening of the

consumer use and application of acetone-based products in consumer paint thinners and multi-purpose solvents will somehow drastically change the way all consumers treat products reformulated with acetone is an unsubstantiated opinion.

Although flammable itself, acetone is also used extensively as a solvent for the safe transportation and storage of acetylene (used for welding), which cannot be safely pressurized as a pure compound. Vessels containing a porous material are first filled with acetone followed by acetylene, which dissolves into the acetone. One liter of acetone can dissolve around 250 liters of acetylene. Thus, acetone, while flammable, has extensive applications and can be transported, handled, used and stored safely and properly. See also the responses to Comments 1-5, 1-8, 4-1, 4-10, and 4-25.

- 4-34 The commentator incorrectly implies that consumer paint thinners reformulated with acetone will contain 100 percent by weight of the material. While several potential replacement products are reformulated with acetone, they do not contain 100 percent acetone. For example, the MSDS for Bortz's "Low VOC Lacquer Thinner LVLTO1" shows that it contains between 85 percent and 95 percent acetone and the MSDS for Pacific Coast Lacquer's "Novoc Compliant Universal Solvent 2040" shows that it contains an undisclosed ratio of acetone mixed with and methyl acetate. Nonetheless, each of the potential replacement products would be subject to the same labeling requirements, which will include warnings specific to each product's fire hazard and its proper use, as any other product on the market. For further discussion regarding labeling requirements, see the response to Comment 4-26.
- 4-35 The Draft EA does not analyze the circumstance of adding a flammable product to paint and deliberately lighting it on fire, despite product warning labels instructing otherwise, because that would be considered inappropriate use/mishandling of the product. Further, the purpose of the CEQA analysis for hazards and hazardous materials is to compare the existing hazard setting of the use of conventional solvents with the hazards that would be associated with the potential replacement solvents and not to speculate on the deliberate misuse of a product. It is also important to note that WM Barr's product test appears to be with mineral spirits, which has a flammability rating of "2," and which is less flammable than acetone and all other conventional solvents. If a test was conducted with a conventional solvent with a flammability rating of "3" like acetone, the test would likely produce results similar to the acetone test. See also the responses to Comments 4-1, 4-10, and 4-25 regarding the conclusions relative to the hazards associated with acetone.
- 4-36 With regard to the flammability of acetone and NFPA classifications, see the responses to Comments 1-8 and 4-26. With regard to comments from the OSFM, see the responses to Comments 1-5, 2-12, 4-2 and 4-17.

- 4-37 With respect to the development of PR 1143 and the contents of the Draft EA, there is no regulatory requirement for the SCAQMD to consult with the CPSC. Similarly, CPSC is neither a responsible agency, trustee agency nor federal agency “which [has] jurisdiction by law with respect to the project or which exercises authority over resources which may be affected by the project.” California Code of Regulations, Title 14, §15086(a); see also California Public Resources Code §§21104(a), 21153(a). This is particularly true because, contrary to WM Barr’s inferences, the CPSC has not banned acetone. See 16 Code of Federal Regulations §1101.1, et seq. (Federal Consumer Safety Act Regulations). As such, implementation of PR 1143, which lists acetone as one of several alternatives to compliance, will not be in conflict with any federal regulations.
- 4-38 Regarding the potential increase in fires due to the use of acetone-based products, see the responses to Comments 1-11 and 4-18. See also the responses to Comments 4-1, 4-10, and 4-25 regarding the conclusions relative to the hazards associated with acetone.
- 4-39 Contrary to the commentator’s opinion, PR 1143 does not prescribe any one type of paint thinner or multi-purpose solvent. Further, current use of the conventional solvents is not unique to one product, but multiple products (refer to Table 2-6 of the Final EA). For a comparison of flammability ranges of the conventional and replacement solvents, see the responses to Comments 1-9 and 1-10. With regard to the use of commonly used products such as paint thinner and acetone by “untrained consumers,” both paint thinner and acetone are currently available and in use by consumers. For more discussion on the current consumer uses of acetone, see the response to Comment 4-33. See also the responses to Comments 4-1, 4-10, and 4-25 regarding the conclusions relative to the hazards associated with acetone.
- 4-40 When evaluating potential environmental impacts, it is important to understand that the evaluation in a CEQA document is a comparison of the existing setting (baseline) to the future setting (what the setting would be like once the proposed project is implemented). With regard to the analysis for hazardous waste disposal in the Draft EA, based on past experience with Rule 1171, PR 1143 is not expected to change the volume of products that are disposed of but rather PR 1143 would cause a shift in the type of products used, but not necessarily the volume. With regard to the sell-through provision and unsold inventory, see the responses to Comments 2-2, 2-8, 2-20 and 4-19.
- 4-41 Contrary to the opinion expressed in this comment, there is no evidence to support the commentator’s claim that PR 1143 will cause a lack of products available and capable of cleaning oil based paint when the potential replacements solvents have been shown to be effective for thinning and cleaning a multitude of products. Further, there is no evidence to support the claim that consumers and “unregulated do-it-yourselfers” would throw away paint brushes and other equipment (not specified by the commentator) as regular garbage to a greater

extent than is currently the case, especially when each county offers free hazardous waste round-up services for consumers. For example, the Los Angeles County Department of Public Works periodically holds free household hazardous waste (HHW) collection events for all residents of Los Angeles County<sup>25</sup>. There are also permanent HHW collection centers located throughout Los Angeles County. Similar, HHW collection centers and events are held in throughout Orange<sup>26</sup>, San Bernardino<sup>27</sup>, and Riverside counties<sup>28</sup>.

- 4-42 Contrary to the opinion expressed in this comment, containers for holding aqueous substitutes would not likely be subject packaging restrictions. Should the aqueous substitutes be sold in plastic containers, once empty, these containers would be considered non-hazardous, unlike the petroleum-based conventional solvent packaging, and can be segregated for recycling such that post-consumer waste going to the landfills could be avoided.
- 4-43 Contrary to the opinion expressed in this comment, just because a product has a marketing label on it does not relieve the manufacturer from including all required information on the label, including proper handling and disposal instructions. Further, marketing terms do not inherently imply use or disposal instructions. In general, consumers do not typically dispose of cleaning products; instead, they use them up and the empty packages can then be recycled or discarded with other household waste. The key to the correct use and disposal of any product is for the consumer to read the label and follow the directions. Labels typically include the manufacturer's customer service toll-free number for consumers to call and ask questions about the product. See also the response to Comment 4-41 regarding the disposal of hazardous wastes.
- 4-44 WM Barr's survey and results were not provided to SCAQMD staff for review. However, the opinion expressed in this comment that only three percent of acetone is sent to household hazardous waste collection facilities is misleading and is not supported by substantial evidence because acetone does not currently comprise much of the cleaning market. With regard to household hazardous waste collection programs and facilities, see the response to Comment 4-41.
- 4-45 With regard to the sell-through provision, see the responses to Comments 2-2, 2-8, 2-20, and 4-19.
- 4-46 With regard to CARB and its rulemaking plans, see the responses to Comments 1-18, 2-1, 2-3, 2-22, and 2-28. With regard to reactivity, see the responses to Comments 2-4, 3-6 and 4-20. After the evaluation of the feasibility of a reactivity-based approach for thinners is complete and supports amending Rule 1143 to include a reactivity-based approach, a CEQA document will be prepared to evaluate the proposed changes at that time. With regard to the adequacy of the

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<sup>25</sup> [http://ladpw.org/general/enotify/Calendar\\_Template/Calendar.aspx](http://ladpw.org/general/enotify/Calendar_Template/Calendar.aspx)

<sup>26</sup> [http://www.cityofirvine.us/files/OC\\_HHW\\_Sheet.pdf](http://www.cityofirvine.us/files/OC_HHW_Sheet.pdf)

<sup>27</sup> <http://www.sbcfire.org/hazmat/hhwcollection.asp>

<sup>28</sup> [http://www.rivcowm.org/hhw/hhw\\_schedule.html](http://www.rivcowm.org/hhw/hhw_schedule.html)

CEQA document, see the responses to Comments 3-2 and 4-19. See also the responses to Comments 4-1, 4-10, and 4-25 regarding the conclusions in the CEQA document relative to the hazards associated with acetone.

- 4-47 With regard to increased ozone formation, see the response to Comments 2-4 and 2-9. With regard to acetone and fire hazards, see the responses to Comments 1-5, 1-8, 1-9, 1-10, 1-11, 2-10, 2-11, and 2-12. With regard to the sell-through provision, see the responses to Comments 2-2, 2-8, 2-20, 2-21, and 4-19. With regard to the adequacy of the Draft EA, see the responses to Comments 3-2 and 4-19. Finally, the Draft EA does not conclude PR 1143 will have no impacts. The conclusion is that the impacts from PR 1143 will not be appreciably different than current conditions. See also the responses to Comments 4-1, 4-10, and 4-25 regarding the conclusions in the CEQA document relative to the hazards associated with acetone.
- 4-48 There is no requirement that one project has to be compared to a second project. For the purposes of the CEQA analysis, the baseline (existing setting) is established and the effects of the project is compared to the baseline, and a significance determination is made according to the magnitude of the difference between the effects of the project and the baseline. SCAQMD staff relied on Rule 1113 for architectural coatings as a comparative rule because consumers already use architectural coatings when they work on their home projects. PR 1143 complements the requirements in Rule 1113 as it is used for substrate and equipment cleaning as well as other clean-up operations. In addition, Rule 1171 is the rule that applies to businesses that use solvents for cleaning. Rule 1113 also applies to consumers for the use of architectural coatings but is not duplicative to the requirements in PR 1143. Further, Rule 1171 contains similar requirements to PR 1143, but is oriented towards businesses and their day-to-day operations. Furthermore, the last sentence in Section XII - Comparative Analysis, of the Draft Staff Report states: "No other AQMD rules apply to solvent and thinner use for consumers." This means that Rule 1171 is not applicable to consumers.
- 4-49 In concept, SCAQMD staff is not opposed to a reactivity-based approach to control ozone, but based on the state of the science and other comments received, there are several concerns. For example, one of the main concerns is that there may be toxicity associated with some VOC-containing compounds that have a relatively low MIR value. Other issues that need to be considered include the potential for secondary organic aerosol formation, specific consensus methodology, and enforceability. SCAQMD staff plans to work closely with CARB, USEPA, the American Chemistry Council (ACC), other industry members and the public to address these issues. Further the Governing Board package for PR 1143 will include a resolution that will commit SCAQMD staff to evaluate the feasibility of a reactivity-based approach for thinners. With regard to reactivity, see the responses to Comments 2-4, 3-6 and 4-20. After the evaluation of the feasibility of a reactivity-based approach for thinners is complete and

supports amending Rule 1143 to include a reactivity-based approach, a CEQA document will be prepared to evaluate the proposed changes at that time.

Industry representatives have requested the sell-through provisions in other SCAQMD rules such as Rules 1113, 1168, 1171, and Proposed Rule 1144 should also apply to solvents that would be regulated by PR 1143. It is important to keep in mind that the purpose of the sell-through provision is to provide the necessary time for retailers to eliminate the inventory of higher-VOC products with the lower-VOC products and allow manufacturers to phase in the compliant products, effective January 1, 2010. Therefore, the sell-through provision in PR 1143 was revised by increasing the originally proposed six month sell-through provision to one year, to be equivalent to several other existing and proposed SCAQMD rules. A similar one year sell-through provision has been provided for various SCAQMD rules in the past and is provided in the various paint regulations regulated by the European Union. With regard to the sell-through provision, see also the responses to Comments 2-2, 2-8, 2-20, 2-21, and 4-19.

- 4-50 Regarding OSFM's concerns, see the response to Comment 45 in the Staff Report for PR 1143.
- 4-51 Regarding the suggestion to contact specific OSFM personnel, see the response to Comment 46 in the Staff Report for PR 1143.
- 4-52 Regarding CARB's inventory and survey data, see the response to Comment 47 in the Staff Report for PR 1143.
- 4-53 Regarding the product reformulations and prohibiting methylene chloride and perchloroethylene from PR 1143, see the response to Comment 48 in the Staff Report for PR 1143.