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[RULE INDEX TO BE ADDED AFTER RULE ADOPTION]

PROPOSED AMENDED RULE 1124. AEROSPACE ASSEMBLY AND COMPONENT MANUFACTURING OPERATIONS

(a) Purpose ~~and Applicability~~

The purpose of ~~Rule 1124~~ this rule is to reduce ~~volatile organic compound~~Volatile Organic Compound (VOC) emissions from aerospace assembly and component manufacturing operations.

(b) Applicability

This rule is ~~applies~~ applicable to any operation associated with manufacturing and assembling products for Aircraft and Space-Vehicles for which an ~~aerospace material~~ Aerospace Material is used and to any Person or Facility who supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses, or distributes any Aerospace Material or associated solvent for use within the South Coast AQMD, as well as any Person or Facility who uses, applies, or solicits the use or application of any Aerospace Material, or associated solvent within the South Coast AQMD. ~~The affected industries include commercial and military Aircraft, satellite, space shuttle and rocket manufacturers and their subcontractors. The rule also applies to Aircraft maskant applicators, Aircraft refinishers, Aircraft Fastener Manufacturers, Aircraft operators, and Aircraft maintenance and service facilities.~~

~~(b)~~(c) Definitions

~~For the purpose of this rule, the following definitions shall apply:~~

(1) ADHESION PROMOTER is a ~~primer~~ Primer that is used to promote wetting and form a chemical bond with a subsequently applied ~~sealant~~ Sealant or ~~other~~ elastomer.

(2) ADHESIVE is any substance that is used to bond one surface to another surface by attachment.

(3) ADHESIVE BONDING PRIMER is a ~~primer~~ Primer that is applied to an ~~aerospace component~~Aerospace Component to increase ~~adhesive~~ Adhesive or ~~adhesive~~ Adhesive film bond strength. Adhesive ~~bonding primers~~Bonding Primers are of two types: those that cure at or below 250°F and those that cure above 250°F.

(4) AEROSOL COATING PRODUCT is a pressurized coating product containing pigments or resins that is dispensed by means of a propellant~~,~~ and is packaged in a disposable can for hand-held application.

(5) AEROSPACE COMPONENT is the raw material, partial or completed fabricated part, assembly of parts, or completed unit of any ~~aircraft~~ Aircraft or ~~space vehicle~~Space-Vehicle and includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons.

(6) AEROSPACE MATERIAL is any coating, ~~primer~~Primer, ~~adhesive~~Adhesive, ~~sealant~~Sealant, maskant, lubricant, ~~stripper~~ Stripper or hand-wipe cleaning or clean-up solvent used during the manufacturing, assembly, refinishing, maintenance or service of an ~~aerospace component~~Aerospace Component. ~~For the purposes of this rule material shall mean aerospace material.~~

(7) AIRCRAFT is any machine designed to travel through the air, without leaving the earth's atmosphere, whether heavier or lighter than air, including airplanes, balloons, dirigibles, helicopters, and missiles.

(8) AIR POLLUTION CONTROL DEVICE is equipment installed for the purpose of reducing VOC and/or toxic emissions.

(9) AIR POLLUTION CONTROL DEVICE EFFICIENCY, in percent, is the ratio of the mass of the VOC removed by the control device from the effluent stream entering the control device to the mass of VOC in the effluent stream entering the control device, both measured simultaneously, and can be calculated by the following equation:

$$\text{Control Device Efficiency} = \frac{W_c - W_a}{W_c} \times 100$$

Where: W_c = Weight of VOC entering control device

W_a = Weight of VOC discharged from the control device

(10) AIR POLLUTION CONTROL SYSTEM is combination of an enclosed spray booth, or another permanent total enclosure, and the Air Pollution Control Device, installed to collect and reduce emissions from the exhaust stream of any spray booth, curing oven, or application area.

(~~8~~11) ANTICHAFE COATING is a coating applied to areas of moving ~~aerospace components~~Aerospace Components which may rub during normal operation.

~~(9) ANTI-WICKING WIRE COATING is the outer coating of a wire which prevents fluid wicking into insulation of the wire.~~

(~~10~~12) BARRIER COATING is a coating applied in a thin film to fasteners to inhibit dissimilar metal corrosion and to prevent galling.

(13) CHEMICAL ABSTRACTS SERVICE REGISTRATION NUMBER (CAS RN) is a unique numerical identifier, assigned to a single chemical substance, to ensure unambiguous identification.

(~~11~~14) CHEMICAL MILLING is the removal of metal by chemical action of acids or alkalis.

(15) CLEANING SOLVENT is a VOC-contaning liquid substance used to perform solvent cleaning

(~~12~~16) CLEAR TOPCOAT is a ~~topcoat~~ Topcoat that contains no visible pigments and is uniformly transparent when applied.

(~~13~~17) COATING APPLICATION EQUIPMENT is equipment used for applying coating to a substrate~~. Coating application equipment includes~~ing, ~~but not limited to: coating distribution lines, coating hoses, pressure pots, spray guns, and hand application equipment, such as hand rollers, brushes, daubers, spatulas, and trowels.~~

(~~14~~18) CONFORMAL COATING is a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.

(~~15~~19) DRY LUBRICATIVE MATERIALS are coatings consisting of lauric acid, cetyl alcohol, waxes or other non-cross linked or resin bound materials which act as a dry lubricant or protective coat.

(~~16~~20) ELECTRIC- or RADIATION-EFFECT COATINGS include electrically conductive coatings and radiation effect coatings, the uses of which may include prevention of radar detection.

(~~17~~21) ELECTRONIC WIRE COATING is the outer electrical insulation coating applied to tape insulation of a wire specifically formulated to smooth and fill edges.

(~~18~~22) ELECTROSTATIC DISCHARGE PROTECTION COATING is a coating applied to ~~space vehicles~~Space-Vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy.

(~~19~~23) EPOXY BASED FUEL-TANK COATING is a coating which contains epoxy resin that is applied to a fuel tank of an ~~aircraft~~ Aircraft to protect it from corrosion and/or bacterial growth.

(24) EXECUTIVE OFFICER is as defined in Rule 102 – Definition of Terms (Rule 102).

(~~20~~25) EXEMPT COMPOUNDS~~: As~~ are as defined in Rule 102.

(~~21~~26) FACILITY~~s is all the buildings, equipment and materials on one contiguous piece of property.~~is a business, or public service engaged in aerospace assemble and manufacturing operations, including the application of Aerospace Materials, that are owned or operated by the same Person or Persons and are located on the same or contiguous parcels.

(~~22~~27) FASTENER MANUFACTURER is a ~~facility~~ Facility that coats ~~aircraft~~ Aircraft fasteners, such as pins, collars, bolts, nuts, and rivets, with ~~solid-film lubricants~~ Solid-Film Lubricants for distribution to other facilities.

(~~23~~28) FIRE-RESISTANT COATING is a ~~cabin interior coating~~ coating that~~: meets for civilian aircraft the Federal Aviation Administration required Ohio State University Heat Release, Fire and Burn Tests; for military aircraft, Aircraft Structural Integrity Program in MIL-STD-1530A and MIL-A-87221 (Northrop's MS-445-3.3.2.1 and MS-445-3.3.2.2).~~

(A) For Commercial Aircraft~~,~~ Fire-Resistant Coatings, are used on passenger cabin interior parts that are subject to the Federal Aviation Administration fireworthiness requirements; and

(B) For Military Aircraft Fire-Resistant Coatings, are used on parts that are subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721.

(~~24~~29) FLIGHT-TEST COATING is a coating applied to an ~~aircraft~~ Aircraft prior to flight testing to protect the ~~aircraft~~ Aircraft from corrosion and to provide required marking during flight test evaluation.

(~~25~~30) FUEL-TANK ADHESIVE is an ~~adhesive~~ Adhesive used to bond components exposed to fuel and must be compatible with ~~fuel tank coatings~~Fuel-Tank Coatings.

(~~26~~31) FUEL-TANK COATING is a coating applied to a fuel tank of an ~~aircraft~~ Aircraft to protect it from corrosion and/or bacterial growth.

(~~27~~32) GRAMS OF VOC PER LITER (g/L) OF COATING, LESS WATER AND LESS EXEMPT COMPOUNDS (Regulatory VOC) is the weight of VOC per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less } \sim\sim\text{exempt}\sim\sim\text{Exempt Compounds} = \frac{W_{\sim\sim sV\sim\sim} - W_w - W_{\sim\sim es\sim\sim ex}}{V_m - V_w - V_{\sim\sim es\sim\sim ex}}$$

Where:

~~Ws~~	~~=~~	~~weight of volatile compounds in grams~~
W_V	=	Weight of volatile compounds in grams (includes water, Exempt Compounds, and VOCs)
Ww	=	weight of water in grams
W~~es~~ex	=	weight of ~~exempt compounds~~ Exempt Compounds in grams
Vm	=	volume of material in liters
Vw	=	volume of water in liters
V~~es~~ex	=	volume of ~~exempt compounds~~ Exempt Compounds in liters

For ~~aerospace materials~~Aerospace Materials that contain ~~reactive diluents~~Reactive Diluents the grams of VOC per Liter of Coating Less Water and Less Exempt Compounds shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Coating, Less Water and Less } \sim\sim\text{exempt}\sim\sim\text{Exempt Compounds} = \frac{W_{\sim\sim sv\sim\sim} - W_w - W_{\sim\sim es\sim\sim ex}}{V_m - V_w - V_{\sim\sim es\sim\sim ex}}$$

Where: ~~Ws~~ ~~=~~ ~~weight of volatile compounds evolved during curing and analysis, in grams~~

Wv		weight of volatile compounds evolved during curing and analysis (includes water, Exempt Compounds, and VOCs)
Ww	=	weight of water evolved during curing and analysis, in grams
W~~es~~ex	=	weight of ~~exempt compounds~~Exempt Compounds evolved during curing and analysis, in grams
Vm	=	volume of the material prior to reaction, in liters
Vw	=	volume of water evolved during curing and analysis, in liters
V~~es~~ex	=	volume of ~~exempt compounds~~Exempt Compounds evolved during curing and analysis, in liters

(~~28~~33) GRAMS OF VOC PER LITER OF MATERIAL (Actual VOC) is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_{~~s~~V} - W_w - W_{~~es~~ex}}{V_m}$$

Where:

~~Ws~~	~~=~~	~~weight of volatile compounds in grams~~
Wv	=	weight of volatile compounds in grams (includes water, Exempt Compounds, and VOCs)
Ww	=	weight of water in grams
W~~es~~ex	=	weight of ~~exempt compounds~~Exempt Compounds in grams
Vm	=	volume of material in liters

(~~29~~34) HAND APPLICATION METHOD is the application of materials by manually held, non-mechanically operated equipment, including, but not limited to:~~. Such equipment includes~~ paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

(~~30~~35) HIGH-TEMPERATURE COATING is a coating that must withstand temperatures of more than 350°F.

(~~31~~36) HIGH-VOLUME, LOW-PRESSURE (HVLP) SPRAY is a material application system used to apply coatings by means of a spray gun which is designed to be operated and which is operated at air pressure ~~of~~ between 0.1 and 10 pounds per square inch gauge ~~(psig)~~ measured dynamically at the center of the air cap and at the air horns.

(~~32~~37) IMPACT-RESISTANT COATING is a flexible coating that protects ~~aerospace components~~Aerospace Components, such as ~~aircraft~~ Aircraft landing gear, and landing gear compartments, and other surfaces subject to impact and abrasion from runway debris.

(38) LEVEL I MATERIALS are Aerospace Materials identified in Table 1 – Table of Standards (Table 1) or Table 2 - Table of Standards for Low-Solids Materials, Cleaners, and Strippers (Table 2) as Level I Materials.

(39) LEVEL II MATERIALS are Aerospace Materials identified in Table 1 or Table 2 as Level II Materials.

(~~33~~40) LINE-SEALER MASKANT is a maskant used to cover scribe lines in maskant in order to protect against etchant in multi-step etching processing.

(~~34~~41) LONG TERM PRIMER (METAL TO STRUCTURAL CORE BONDING) is an ~~adhesive bonding primer~~Adhesive Bonding Primer that has met the ~~aircraft~~ Aircraft manufacturers' required performance characteristics following 6,000 hours testing, used for metal to structural core bonding, and with an ~~adhesive~~ Adhesive that is specified to be cured at 350°F ± 10°F.

(~~35~~42) LOW-SOLIDS ~~ADHESIVE, COATING, PRIMER OR SEALANT~~ MATERIALS ~~is an adhesive, coating, primer or sealant~~ are Aerospace Materials, other than Low-Solids Corrosion Resistant Primers, which ha~~s~~ves less than one pound of solids per gallon of material, where the solids are determined pursuant to ASTM D 2369 – Standard Test Method for Volatile Content of Coatings (ASTM D 2369). ~~Such solids are the non-volatiles remaining after a sample is heated at 110°C for one hour.~~

(~~36~~43) LOW-SOLIDS CORROSION RESISTANT PRIMER is a corrosion resistant polyurethane compatible ~~primer~~ Primer with enhanced adhesion and rain erosion resistance which contains no more than 45 percent solids, by weight, as applied, where the solids are determined pursuant to ASTM D 2369.

(~~37~~44) MASKANT FOR CHEMICAL MILLING is a coating applied directly to an ~~aerospace component~~Aerospace Component to protect surface areas when ~~chemical milling~~Chemical Milling the component.

(~~38~~45) MASKANT FOR CHEMICAL PROCESSING is a coating applied directly to an ~~aerospace component~~Aerospace Component to protect surface areas when anodizing, aging, bonding, plating, etching, and/or performing other chemical surface operations on the component.

(46) MAXIMUM INCREMENTAL REACTIVITY (MIR) means the measure of the photochemical reactivity of a VOC, which estimates the weight of ozone produced from a weight of VOC expressed as gram of ozone per gram of VOC (g O3/g VOC). MIR values for individual VOCs are specified in Sections 94700 and 94701, Title17, California Code of Regulations.

(~~39~~47) METALLIZED EPOXY COATING is an epoxy coating that contains ~~relatively large quantities of flake pigmentation~~ at least 0.4 pounds of Metal Particles, which are pieces of an elemental pure metal or a combination of elemental metals, per gallon of coating (48 grams/liter), as applied, for appearance and/or added protection.

(~~40~~48) MOLD RELEASE COATING is a coating applied to the surface of a mold to prevent the molded component from sticking to the mold as it is removed.

(~~41~~49) NON-STRUCTURAL ADHESIVE is an ~~adhesive~~ Adhesive that bonds non-load-carrying ~~aircraft~~ Aircraft components in non-critical applications and is not covered in any other specialty ~~adhesive~~ Adhesive categories.

(~~42~~50) OPTICAL ANTI-REFLECTION COATING is a coating with a low reflectance in the infrared and visible wavelength range and is used for anti-reflection on or near optical and laser hardware.

(51) PERSON is as defined in Rule 102.

(~~43~~52) PHOTOLITHOGRAPHIC MASKANT is a coating applied by ~~photoresist operation(s)~~Photoresist Operation(s) directly to printed circuit boards, and ceramic and similar substrates to protect surface areas from ~~chemical milling~~Chemical Milling or chemical processing.

(~~44~~53) PHOTORESIST OPERATION is a process for the application or development of photoresist masking solution on a substrate, including preparation, soft bake, develop, hard bake, and stripping, and can be generally subdivided as follows:

(A) Negative Photoresist Operation is a process where the maskant hardens when exposed to light and the unhardened maskant is stripped, exposing the substrate surface for ~~chemical milling~~Chemical Milling or chemical processing~~.~~; and

(B) Positive Photoresist Operation is a process where the maskant softens when exposed to light and the softened maskant is stripped, exposing the substrate surface for ~~chemical milling~~Chemical Milling or chemical processing.

(~~45~~54) PRETREATMENT WASH PRIMER is a ~~primer~~ Primer which contains no more than 12 percent solids by weight, and at least ~~½~~ a half percent acid by weight, ~~to provide surface etching and is~~ applied directly to metal surfaces to provide surface etching, ~~provide~~ corrosion resistance, adhesion, and ease of stripping.

(~~46~~55) PRIMER is a coating applied directly to an ~~aerospace component~~ Aerospace Component for purposes of corrosion prevention, protection from the environment, functional fluid resistance and/or adhesion of subsequent coatings, ~~adhesives~~Adhesives, or ~~sealants~~Sealants.

(~~47~~56) PRIMER COMPATIBLE WITH RAIN EROSION RESISTANT COATING is a ~~primer~~ Primer to which rain erosion resistant ~~topcoat~~ Topcoat is applied.

(57) PRODUCT-WEIGHTED MIR (PW-MIR) means the sum of all weighted-MIR for all ingredients in an Aerospace Material. The PW-MIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging) and calculated according to the following equations:

Weighted MIR (Wtd-MIR) ingredient= MIR x Weight Fraction ingredient,

And,

$$PW\text{-}MIR = (Wtd\text{-}MIR)_1 + (Wtd\text{-}MIR)_{2 + \ldots +} (Wtd\text{-}MIR)_n$$

Where,

MIR = ingredient MIR; and

1,2, 3..., n = each ingredient in the product up to the total n ingredients in the product

(~~48~~58) RAIN EROSION-RESISTANT COATING is a coating that protects leading edges, flaps, stabilizers, and engine inlet lips against erosion caused by rain impact during flight.

(59) REACTIVE DILUENT is a liquid which is a VOC during application and one in which through chemical or physical reactions such as polymerization, becomes an integral part of a finished coating

(~~49~~60) REPAIR COATING is a coating used to recoat portions of a product which has sustained mechanical damage to the coating following normal painting operations.

(~~50~~61) REMANUFACTURED AIRCRAFT PARTS are ~~aerospace components~~Aerospace Components that are built as spare parts or replacement parts subject to an existing commercial ~~aircraft~~ Aircraft specification.

(~~51~~62) REPAIR MASKANT is a maskant used to cover imperfections in the maskant coat.

(~~52~~63) REWORK is the inspection, repair, and reconditioning of ~~aerospace components~~ Aerospace Components ~~subject to this rule~~.

(~~53~~64) RUBBER SOLUTION FUEL-TANK COATING is a ~~fuel tank coating~~Fuel-Tank Coating which performs as a ~~sealant~~ Sealant and protects the tank from corrosion and/or bacterial growth and is formulated with a butadiene acrylonitrile copolymer.

(~~54~~65) SCALE INHIBITOR is a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of tenacious scale.

(~~55~~66) SEALANTS are viscous semisolid materials that fill voids in order to seal out water, fuel, and other liquids and solids, and in some cases, air movement.

(67) SENSITIVE RECEPTOR means any residence including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade twelve schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing.

(~~56~~68) SHORT TERM PRIMER (METAL TO STRUCTURAL CORE BONDING) is an ~~adhesive bonding primer~~Adhesive Bonding Primer that has met the manufacturers' required performance characteristics following 1,000 hours testing, used for metal-to-metal and metal-to-structural core bonding, and with an ~~adhesive~~ Adhesive which is specified to be cured at a temperature of 350°F ± 10°F.

(~~57~~69) SOLID-FILM LUBRICANT is a very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene ~~(PTFE)~~, or other solids that act as a dry lubricant between faying surfaces.

(~~58~~70) SONIC AND ACOUSTIC APPLICATIONS are the use of ~~aerospace materials~~Aerospace Materials on ~~aerospace components~~Aerospace

Components that are subject to mechanical vibration and/or sound wave cavitation.

(71) SOUTH COAST AQMD TEST METHOD means a test method included in the manual of "Laboratory Methods of Analysis for Enforcement Samples," which can be found on the South Coast AQMD website and are referenced in subdivision (h).

(~~59~~72) SPACE-VEHICLE is a vehicle designed to travel beyond the earth's atmosphere.

(~~60~~73) STENCIL COATING is an ink or a coating that is rolled, sprayed with an airbrush or a touch-up gun, or brushed, while using a template to add identifying letters and/or numbers to ~~aerospace components~~Aerospace Components.

(~~61~~74) STRIPPER is a volatile liquid applied to remove cured ~~aerospace materials~~Aerospace Materials or their residues.

(~~62~~75) STRUCTURAL ADHESIVE - AUTOCLAVABLE is an ~~adhesive~~ Adhesive used to bond load-carrying ~~aircraft~~ Aircraft components and is cured by heat and pressure in an autoclave.

(~~63~~76) STRUCTURAL ADHESIVE - NON-AUTOCLAVABLE is an ~~adhesive~~ Adhesive cured under ambient conditions and is used to bond load-carrying ~~aircraft~~ Aircraft components or other critical functions, such as nonstructural bonding in the proximity of engines.

(~~64~~77) TEMPORARY MARKING COATING is an ink or a coating used to make identifying markings~~,~~ and is removed prior to delivery of the ~~aerospace component~~Aerospace Component and/or assembly.

(~~65~~78) TEMPORARY PROTECTIVE COATING is a coating applied to an ~~aerospace component~~ Aerospace Component to protect it from mechanical and environmental damage during manufacturing.

(~~66~~79) TOPCOAT is a coating applied over a ~~primer~~ Primer for purposes such as appearance, identification, or protection.

(~~67~~80) TOUCH-UP COATING is a coating used to cover minor coating imperfections appearing after the main coating operation.

(~~68~~81) TOXICITY-WEIGHTED EMISSION REDUCTION EFFICIENCY is the difference between the uncontrolled and the controlled ~~toxicity-weighted total emissions~~Toxicity-Weighted Total Emissions divided by the uncontrolled ~~toxicity-weighted total emissions~~Toxicity-Weighted Total

Emissions and multiplied by 100. ~~Toxic organic solvent~~Toxic Organic Solvent and ~~toxic particulate matter~~Toxic Particulate Matter ~~toxicity-weighted emission reduction efficiencies~~Toxicity-Weighted Emission Reduction Efficiencies are calculated separately and are represented by the following equation:

$$\eta = \frac{T_u - T_c}{T_u} \quad x \quad 100$$

Where: η = The ~~toxicity-weighted emission reduction efficiency~~Toxicity-Weighted Emission Reduction Efficiency

T_u = The uncontrolled ~~toxicity-weighted total emissions~~Toxicity-Weighted Total Emissions

T_c = The controlled ~~toxicity-weighted total emissions~~Toxicity-Weighted Total Emissions

(~~69~~82) TOXICITY-WEIGHTED TOTAL EMISSIONS is the sum of the product of the mass emissions and the unit risk factor for each toxic component of ~~aerospace material~~Aerospace Material used per year. There are two ~~toxicity-weighted total emission~~Toxicity-Weighted Total Emission values, one for uncontrolled emissions and the other for controlled emissions. ~~Toxicity-weighted total emissions~~Toxicity-Weighted Total Emissions for ~~toxic organic solvents~~Toxic Organic Solvents and ~~toxic particulate matter~~Toxic Particulate Matter are calculated separately and are represented by the following equations:

$$T_u = \sum_{i=1}^{n} m_i U_i$$

$$T_c = \sum_{i=1}^{n} (1 - E_i)(m_i U_i) + \sum_{j=1}^{m} (1 - E_j)(m_j U_j)$$

Where: T_u = The uncontrolled ~~toxicity-weighted total emissions~~Toxicity-Weighted Total Emissions

T_c = The controlled ~~toxicity-weighted total emissions~~Toxicity-Weighted Total Emissions

m_i = Baseline mass emissions of each ~~toxic organic solvent~~Toxic Organic Solvent or ~~toxic particulate matter~~Toxic Particulate Matter as established in a ~~District~~ South Coast AQMD approved Health Risk Assessment in pounds per year

U_i Unit risk factor for each ~~toxic organic solvent~~Toxic Organic Solvent or ~~toxic particulate matter~~Toxic Particulate Matter in inverse micrograms per cubic meter $(\mu g/m^3)^{-1}$

E_i Overall control efficiency of the add-on control equipment for which ~~aerospace materials~~Aerospace Materials containing ~~toxic organic solvent~~Toxic Organic Solvent or ~~toxic particulate matter~~Toxic Particulate Matter are vented to

m_j Additional mass emissions of each ~~toxic organic solvent~~Toxic Organic Solvent or ~~toxic particulate matter~~Toxic Particulate Matter to the baseline mass emissions that established a ~~District~~ South Coast AQMD approved Health Risk Assessment in pounds per year

U_j Unit risk factor for each ~~toxic organic solvent~~Toxic Organic Solvent or ~~toxic particulate matter~~Toxic Particulate Matter in inverse micrograms per cubic meter $(\mu g/m^3)^{-1}$

E_j Overall control efficiency of the add-on control equipment for which additional ~~aerospace materials~~Aerospace Materials containing ~~toxic organic solvent~~Toxic Organic Solvent or ~~toxic particulate matter~~Toxic Particulate Matter will be vented to

(~~70~~83) TOXIC ORGANIC SOLVENT is any volatile compound that has a finalized unit risk factor assigned by the Office of Environmental Health Hazard Assessment.

(~~71~~84) TOXIC PARTICULATE MATTER is any non-volatile compound that has a finalized unit risk factor assigned by the Office of Environmental Health Hazard Assessment.

(~~72~~85) TRANSFER EFFICIENCY is the ratio of the weight or volume of coating solids adhering to an object to the total weight or volume, respectively, of coating solids used in the application process, expressed as a percentage.

(~~73~~86) TYPE I ETCHANT is a ~~chemical milling~~Chemical Milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

(~~74~~87) TYPE II ETCHANT is a ~~chemical milling~~Chemical Milling etchant that is a strong sodium hydroxide solution containing amines.

(~~75~~88) UNICOAT is a coating which is applied directly to an ~~aerospace component~~Aerospace Component for purposes of corrosion protection, environmental protection, and functional fluid resistance that is not subsequently topcoated.

(~~76~~89) VOC COMPOSITE PARTIAL PRESSURE is the sum of the partial pressures of the compounds defined as VOCs.

VOC Composite Partial Pressure is calculated as follows:

$$PP_c = \sum_{i=1}^{n} \frac{\frac{W_i}{MW_i} \times VP_i}{\frac{W_w}{MW_w} + \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where:

W_i	=	Weight of the "i"th VOC compound, in grams
W_w	=	Weight of water, in grams
W_e	=	Weight of ~~exempt compound~~Exempt Compound, in grams
MW_i	=	Molecular weight of the "i"th VOC compound, in grams per gram-mole
MW_w	=	Molecular weight of water, in grams per gram-mole
=		
MW_e	=	Molecular weight of ~~exempt compound~~Exempt Compound, in grams per gram-mole
Pp_c	=	VOC ~~composite partial pressure~~Composite Partial Pressure at 20^{o}C, in millimeters of mercury (mm Hg)
Vp_i	=	Vapor pressure of the "i"th VOC compound at 20^{o}C, in mm Hg

(~~77~~90) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(~~78~~91) WING COATING is a corrosion-resistant coating that is resilient enough to withstand the flexing of the wings.

(~~79~~92) WIRE INK is the surface identification stripe and mark on aerospace wire or cable that serves as an electrical insulator in the presence of high humidity.

(~~80~~93) WIRE PREBONDING ETCHANT is a non-additive surface treatment process to provide bondability of aerospace wire coatings to the underlying insulation layer.

(~~c~~d) Requirements

(1) VOC Content of Aerospace Materials

~~(A)~~ No Person shall manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Aerospace Materials for use within South Coast AQMD, nor shall ~~A~~any ~~person~~owner or operator of a Facility ~~shall not~~ apply or solicit the use of any Aerospace Materials on ~~to aerospace components~~Aerospace Components ~~any materials~~, including any VOC-containing materials added to the original Aerospace ~~material~~ Material supplied by the manufacturer, which contain VOC in excess of the applicable regulatory VOC limits specified ~~below:~~in Table 1.

~~VOC Limits~~Table 1 – Table of Standards

~~Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds~~Regulatory VOC Limits (g/L)

Categories ~~Primers~~	~~Current VOC Limit~~	~~VOC Limit Effective 1-1-03~~	VOC (g/L) ~~Limit Effective 1-1-05~~	**Level I Materials**	**Level II Materials**
Primers					
General Primer	~~350~~	~~350~~	350		✓
~~Low Solids Corrosion Resistant Primer~~	~~350~~	~~350~~	~~350~~		
Pretreatment Wash Primer	~~780~~	~~780~~	780		✓
Rain Erosion-Resistant Coating Compatible Primer	~~850~~	~~850~~	850		✓
Adhesion Promoter	~~850~~	~~850~~	~~250~~*	✓	
Adhesive Bonding Primer					
New Commercial Aircraft	~~805~~	~~250~~	250		✓

All Military Aircraft	~~805~~	~~805~~	805		✓
Remanufactured Commercial Aircraft Parts	~~805~~	~~805~~	805		✓
Sonic and Acoustic Applications	~~805~~	~~805~~	805		✓
Adhesive Bonding Primer					
Long Term	~~250~~	~~250~~	250		✓
Short Term	~~250~~	~~250~~	250		✓
~~**Coatings**~~	~~**Current VOC Limit**~~	~~**Current VOC Limit Effective 3-01-02**~~			
Topcoats					
General Topcoat	~~420~~		420		✓
Clear Topcoat	~~520~~		520		✓
Unicoat	~~420~~		420		✓
Wing Coating	~~750~~		750		✓
Impact Resistant	~~420~~		420		✓
High-Temperature	~~850~~		850		✓
Antichafe Coating	~~600~~		420		✓
Rain Erosion-	~~800~~		800		✓
Conformal Coating	~~750~~		750		✓
Optical Anti-	~~700~~		700		✓
Scale Inhibitor	~~880~~		880		✓
Metallized Epoxy	~~700~~		700		✓
~~**Coatings (cont'd)**~~	~~**Current VOC Limit**~~	~~**VOC Limit Effective 3-01-02**~~			
Electric or Radiation	~~800~~		800		✓
Temporary	~~250~~		250		✓
Fuel Tank Coatings	~~420~~		420		✓
Mold Release	~~780~~		780		✓
Flight-Test Coatings					
Used on Missiles or Single Use Target Craft	~~420~~		420		✓
All Other	~~840~~		840		✓
Fire Resistant Coatings					
Commercial	~~650~~		650		✓

Military	~~970~~		800		✓
Wire Coatings					
Phosphate Ester Resistant Ink	~~925~~		925		✓
Other	~~420~~		420		✓
Space--Vehicle Coatings					
Electrostatic Discharge Protection Coating	~~800~~		800		✓
Other	~~1000~~		1000		✓
~~**Adhesives**~~			~~**Current VOC Limit**~~		
Adhesives					
Non-Structural Adhesive			250	✓	
Structural Adhesive					
Autoclavable			50	✓	
Non-Autoclavable			850	✓	
Space--Vehicle Adhesive			800	✓	
Fuel Tank Adhesive			620	✓	
~~**Sealants**~~	~~**Current VOC Limit**~~	~~**VOC Limit Effective 3-01-02**~~			
Sealants					
Fastener Sealant	~~675~~	675		✓	
Extrudable, Rollable or Brushable Sealant	~~600~~	280		✓	
Other	~~600~~	600		✓	
~~**Maskants**~~		~~**Current VOC Limit**~~			
Maskants					
For Chemical Processing		250		✓	
For Chemical Milling					
Type I		250		✓	
Type II		160		✓	
Photolithographic		850		✓	
Touch-up, Line Sealer Maskants		750		✓	
~~**Lubricants**~~		~~**Current VOC Limit**~~			
Lubricants					
Fastener Installation					
Solid-Film Lubricant		880		✓	

Dry Lubricative Materials		675	✓	
Fastener-Lubricative Coatings, Fastener Manufacturing				
Solid-Film Lubricant		250	✓	
Dry Lubricative Materials		120	✓	
Barrier Coating		420	✓	
Non-Fastener Lubricative Coatings, Fastener Manufacturing				
Solid-Film Lubricant		880	✓	
Dry Lubricative Materials		675	✓	

* See paragraph (d)(3) for VOC limits and requirements for Adhesion Promoters.

(2) VOC Limits for Low-Solids Materials, Cleaners, and Strippers

No Person shall manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Aerospace Material for use within South Coast AQMD, nor shall any owner or operator of a Facility apply or solicit the use of any Aerospace Material on Aerospace Components, including any VOC-containing materials added to the original Aerospace Material, supplied by the manufacturer, which contain VOC in excess of the applicable Actual VOC Limit or VOC Composite Partial Pressure VOC limit specified in Table 2.

~~VOC LIMIT~~**Table 2 – Table of Standards for Low-Solids Materials, Cleaners, and Strippers**

~~Grams of VOC Per Liter of Material~~Actual VOC Limits (g/L) or VOC Composite Partial Pressure Limits (mm Hg)

~~Cleaning Solvents and Strippers~~Categories	~~Current~~ VOC Limit		Level I Materials	Level II Materials
	g/L	mm Hg		
Cleaning Solvents	200 ~~g/L or 45 mm Hg VOC Composite Partial Pressure~~	45	✓	
Strippers	300 ~~g/L or 9.5 mm Hg VOC Composite Partial Pressure~~	9.5	✓	
Low-Solids Adhesives, Coatings, Primers or Sealants	120	N/A	✓	
Low-Solids Corrosion Resistant Primer	350	N/A	✓	

(3) Adhesion Promoters

No Person shall manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Adhesion Promoters for use within South Coast AQMD, nor shall any owner or operator of a Facility apply or solicit the use of any Adhesion Promoters on Aerospace Components, including any VOC-containing materials added to the original Aerospace Material supplied by the manufacturer, which contain VOC in excess of the applicable VOC limits specified in Table 3 where:

(A) Adhesion Promoters formulated to comply with the VOC limits effective [*Date of Rule Adoption*] and January 1, 2028 shall not contain more than 0.01 weight percent of either pCBtF or t-BAc; and

(B) In lieu of complying with the [*Date of Rule Adoption*] or January 1, 2028 Regulatory VOC limit, a Person may manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Adhesion Promoters for use within South Coast AQMD, or an owner or operator of a Facility may apply or solicit the use of any Adhesion Promoters on Aerospace Components, including any VOC-containing materials added to the original Aerospace Material

supplied by the manufacturer of the Adhesion Promoters, that complies with the Alternative PW-MIR VOC limit listed in Table 3.

Table 3 – Table of Standards for Adhesion Promoters
Regulatory VOC Limits (g/L) and Alternative PW-MIR VOC Limit (g O_3/g Product)

Category	VOC Limits and Effective Dates			
	January 1, 2005	[*Date of Rule Adoption*]	January 1, 2028	
	g/L	g/L	g/L	(g O_3/ g Product)
Adhesion Promoter	250	840	720	2.00

(4) Sell-Through and Use-Through for Adhesion Promoters

Any Adhesion Promoter that is manufactured prior to:

(A) [*Two Months after Date of Rule Adoption*] that contains more than 0.01 percent of pCBtF and/or t-BAc, may be sold, supplied, offered for sale, or used pursuant to the Level I Material sell through and use through dates in paragraph (f)(2); and

(B) January 1, 2028, with a VOC limit that exceeds 720 g/L or 2.00 g O_3/g Product) may be sold, supplied, or offered for sale until January 1, 2029 and may be used until January 1, 2030.

(~~B~~5) Requirements for using Unicoat

Any Person or Facility that opts to apply a Unicoat to Aerospace Components in lieu of applying a Primer and Topcoat ~~Documents~~ shall ~~be~~ provide~~d~~ documentation to the Executive Officer ~~or his designee demonstrating~~ justifying ~~that~~ the use of the ~~unicoat~~Unicoat ~~is being used in lieu of the application of a primer and topcoat~~, and ~~the applicant~~ must receive written approval for the use of ~~unicoat~~ Unicoat specifying the conditions of application from the Executive Officer ~~or his designee~~.

~~(C) For low-solids adhesives, coatings, primers or sealants, the appropriate limits in subparagraph (c)(1)(A) shall be expressed in grams of VOC per liter of material.~~

(~~2~~6) Solvent Cleaning Operations; Storage and Disposal ~~of VOC-Containing Materials~~

~~(A)~~ Any owner or operator of a Facility conducting solvent ~~Cleaning~~ cleaning, which means the use of a Cleaning Solvent for the removal of loosely held

uncured adhesives, uncured inks, uncured coatings, and contaminants such as dirt, soil, and grease, from ~~of~~ material application equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of solvent laden cloth and paper shall:

(A) ~~comply~~ Comply with provisions of Rule 1171 – Solvent Cleaning Operations~~.~~; and

(B) ~~A person shall n~~Not atomize any solvent cleaner ~~into open air~~unless it is vented to an approved Air Pollution Control Device.

(~~3~~7) Transfer Efficiency

An ~~person or facility~~ owner or operator of a Facility shall not apply ~~aerospace materials~~Aerospace Materials unless they are applied with properly operating equipment ~~or controlled~~, according to operating procedure specified by the equipment manufacturer or the Executive Officer ~~or his designee~~, and by the use of one of the following methods:

(A) ~~electrostatic~~ Electrostatic application; ~~or~~

(B) ~~flow~~ Flow coater; ~~or~~

(C) ~~roll~~ Roll coater; ~~or~~

(D) ~~dip~~ Dip coater; ~~or~~

(E) ~~high-volume, low-pressure (~~HVLP~~)~~ ~~spray~~Spray; ~~or~~

(F) ~~hand application methods~~Hand Application Methods; or

(G) Any such other Aerospace Material ~~alternative~~ application methods as ~~are~~ demonstrated, in accordance with the provisions of paragraph (i)(5) ~~to the Executive Officer, using District~~South Coast AQMD ~~approved procedures~~, to be capable of achieving ~~at least~~ equivalent or better ~~transfer efficiency~~ Transfer Efficiency than the Aerospace Material application method listed in ~~to method (c)(3)(E)~~subparagraph (d)(7)(E), ~~and for which~~ provided written approval ~~of~~ is obtained from the Executive Officer ~~has been obtained.; or~~

~~(H) Approved air pollution control equipment under paragraph (c)(4).~~

(~~4~~8) Air Pollution Control ~~Equipment~~Device to Control Excess VOC Emissions

An ~~Owners~~ owner ~~and/~~or operator~~s~~ of a Facility may comply with ~~provisions of~~ the VOC limits in paragraph~~s~~ ~~(c)(1)~~ (d)(1), (d)(2), and/or the transfer efficiency requirements in subparagraph ~~(c)(3)~~(d)(7) by using an approved ~~air pollution control equipment~~ Air Pollution Control Device

provided ~~that~~ the VOC emissions from such operations and/or materials are reduced ~~in accordance with provisions of (A) and (B).~~as follows:

(A) ~~The control device shall reduce emissions from an emission collection system by~~Requires an Air Pollution Control Device Efficiency of at least 95 percent, by weight, or ~~the output of the air pollution control Device~~is less than 50 ~~PPM~~ parts per million by volume (ppmv) at the outlet, calculated as carbon with no dilution~~.~~;

and

(B) ~~The owner/operator of a Facility demonstrates that t~~The Air Pollution Control ~~system~~ System collects ~~at least 90~~ 100 percent~~, by weight,~~ of the emissions generated by the sources of emissions, as determined with a smoke test.

(e) Alternative Compliance Options

(1) An owner or operator of a Facility may comply with the provisions of paragraphs (d)(1) and/or (d)(2) by means of an Alternative Emission Control Plan pursuant to Rule 108 – Alternative Emissions Control Plans.

(2) Air Pollution Control Systems for Level II Materials

An owner or operator of a Facility may elect to install an Air Pollution Control Device in lieu of complying with the Level II Material prohibition in paragraph (f)(3) provided:

(A) No later than [*Six months after Date of Rule Adoption*], or effective [*Six months after Date of Rule Adoption*], prior to the use of any Level II Materials, the owner or operator of a Facility submits a complete South Coast AQMD permit application(s) to include a permit condition that:

(i) Requires an Air Pollution Control Device Efficiency of at least 95 percent, or equivalent mass emissions, demonstrated by a source test pursuant to subdivision (h);

(ii) Requires the use or curing of any Level II Materials to be conducted in an Air Pollution Control System that collects 100 percent of the emissions generated, as determined with a smoke test; and

(iii) Limits the use of any Level II Materials to:

(I) 250 gallons per year in each Air Pollution Control System; or

(II) The annual usage limits listed in Table A-1 in Attachement A of this rule, in each Air Pollution Control System, based on the distance to the nearest Sentitive Receptor.

(B) The owner or operator of the Facility only uses Level II Materials in an Air Pollition Control System and operates in compliance with the facility permit usage limits within:

(i) 12 months following the date the permit to construct is issued, or

(ii) A time extension approved by the Executive Officer; and

(C) The owner or operator of the Facility performs maintenance and keeps records pursuant to paragraph (g)(2).

(3) Compliance Deadline for pCBtF or t-BAc Air Pollution Control Devices

An owner or operator of a Facility who elected to install an Air Pollution Control Device pursuant to paragraph (e)(2) but has not received an approved permit to operate for the Air Pollution Control Device within four years of submitting a complete South Coast AQMD permit application(s) shall no longer use Aerospace Materials that contain pCBtF or t-BAc.

(4) Low-Use Provision for Level II Materials

An owner or operator of a Facility may elect to comply with a low-use permit condition in lieu of complying with the Level II Material prohibition in paragraph (f)(3) provided:

(A) No later than [*Six Months after Date of Rule Adoption*], or effective [*Six months after Date of Rule Adoption*], prior to the use of any Level II Materials, the owner or operator of a Facility submits a complete South Coast AQMD permit application for a permit conditions that limits the use of any Level II Materials at the Facility to:

(i) 1.25 gallons per year; or

(ii) The annual usage limits listed in Table A-2 in Attachement A of this rule, based on the distance to the nearest Sentitive Receptor; and

(B) The owner or operator of a Facility operates in compliance with the facility permit usage limits on and after the date the South Coast AQMD issues the permit to operate.

~~(e) Recordkeeping Requirements~~

~~Records shall be maintained pursuant to the requirements of Rule 109.~~

(f) Prohibition of Possession, Specification, Sale, or Use

(1) Level I Material pCBtF and t-BAc Prohibition

No Person shall manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage any Level I Material listed in Table 1 or Table 2 for use within the South Coast AQMD, nor shall any owner ir operator of a Facility possess or apply Level I Material, including any VOC-containing material added to the original Aerospace Material supplied by the manufacturer, that contains pCBtF or t-BAc in concentrations greater than 0.01 percent by weight that was manufactured after the applicable Prohibition Date in Table 4 – Level I Materials pCBtF and t-BAc Prohibition Schedule (Table 4).

(2) Level I Material Sell-Through and Use-Through

Any Level I Material that is manufactured prior to the applicable Prohibition Date in Table 4, that contains more than 0.01 percent of pCBtF and/or t-BAc, may be sold, supplied, or offered for sale until the applicable Sell-Through Date in Table 4 and may be used until the applicable Use-Through Dates in Table 4.

Table 4 – Level I Materials pCBtF and t-BAc Prohibition Schedule

Categories and their Applicable Subcategories	Prohibition Date	Sell-Through Date	Use-Through Date
Adhesives	[*Two Months from Date of Rule Adoption*]	[*One Year, Two Months from Date of Rule Adoption*]	[*Two Years, Two Months from Date of Rule Adoption*]
Sealants			
Lubricants			
Cleaning Solvents			
Strippers			
Adhesion Promoters			
Maskants	[*Two Years from Date of Rule Adoption*]	[*Three Years from Date of Rule Adoption*]	[*Four Years from Date of Rule Adoption*]

(3) Level II Material pCBtF and t-BAc Prohibition

Unless an owner or operator of a Facility has an alternative compliance option pursuant to paragraph (e)(2), approved by the Executive Officer, no owner or operator of a Facility shall possess or apply any Level II Materials, including any VOC-containing material added to the original Level II Material supplied by the manufacturer, that contains pCBtF or t-BAc in concentrations greater than 0.01 percent by weight that was manufactured after [*12 Months after Date of Rule Adoption*].

(4) Level II Material Use Through

Any Level II Material that is manufactured prior [*12 Months after Date of Rule Adoption*], that contains more than 0.01 percent of pCBtF and/or t-BAc, may be possessed or applied until [*24 Months after Date of Rule Adoption*].

(g) Administrative Requirements

(1) An owner or operator of a Facility shall maintain records pursuant to the requirements of Rule 109 – Recordkeeping for Volatile Organic Compound Emissions.

(2) Labeling Requirements for Materials Containing Organic Solvents

A Person shall not manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage for use in South Coast AQMD any Aerospace Material unless they are labeled in accordance with South Coast AQMD Rule 443.1 – Labeling of Materials Containing Organic Solvents.

(3) Labeling Requirements for Adhesion Promoters

A Person that elects to manufacture, supply, sell, offer for sale, market, blend, distribute, package, or repackage an Adhesion Promoter complying with the alternative PW-MIR VOC limits in paragraph (d)(3), shall include the PW-MIR VOC content in g O3/g product on all containers.

(4) pCBtF and t-BAc Air Pollution Control Devices

An owner or operator of a Facility that elects to install an Air Pollution Control Device pursuant to paragraph (e)(2) shall:

(A) Inspect and maintain all components of the Air Pollution Control Devices in accordance with manufacturer's specifications; and

(B) Keep and maintain adequate records to demonstrate compliance with all conditions in a format approved by the South Coast AQMD

Executive Officer for a minimum of five years and make available to South Coast AQMD upon request.

(h) Source Testing

(1) Source Test Protocol

An owner or operator of a Facility required to conduct source tests pursuant to paragraph (h)(1) shall:

(A) Submit a source test protocol to the Executive Officer for approval within 90 days of permit to construct issuance;

(B) At least two week prior to the scheduled source test, notify the Executive Officer, in writing, of the intent to conduct source testing; and

(C) Conduct a source test according to the approved protocol.

(2) Unless requested by the South Coast AQMD, after the approval of the initial source test protocol, an owner or operator subject to this rule is not required to resubmit a source test protocol for approval unless the Air Pollution Control Device has been altered in a manner that requires a permit application submittal.

(3) Source Test Schedule

An owner or operator of a Facility operating an Air Pollution Control Device pursuant to paragraph (e)(2), shall conduct source tests to determine the Air Pollution Control Device Efficiency according to the following schedule:

(A) Conduct an initial source test within 180 days from operating an Air Pollution Control Device or within 30 days from receiving an approved source test protocol pursuant to paragraph (h)(1), whichever is later; and

(B) Perform a source test every 36 months from the date of the most recent source test.

(4) An owner or operator of a Facility operating an Air Pollution Control Device pursuant to paragraph (e)(2) shall conduct all source tests:

(A) Using a South Coast AQMD approved source test protocol pursuant to paragraph (h)(1);

(B) During application of Aerospace Materials containing pCBtF or t-BAc; and

(C) Normal operating conditions.

(5) All source tests shall be conducted by a contractor that is approved by the Executive Officer under the Laboratory Approval Program for the applicable test methods.

(6) Records of source tests shall be maintained for five years and shall be made available to South Coast AQMD upon request.

(~~e~~i) ~~Determination of VOC Content~~Test Methods

~~The VOC content of materials subject to the provisions of this rule shall be determined by the following methods:~~

(1) VOC Content of Aerospace Materials

The VOC content of Aerospace Materials shall be determined by:

(~~1~~A) United States Environmental Protection Agency (U.S. EPA) Reference Method 24 ~~(~~ Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A~~). Analysis done according to EPA Method 24 shall utilize Procedure B of ASTM Method D-2369, referenced in EPA Method 24. The~~ with the ~~exempt solvent~~Exempt Compounds' content ~~shall be~~ determined ~~using~~by:

(i) South Coast AQMD Test Methods ~~302 and~~ 303 – Determination of Exempt Compounds ~~(SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual)~~ ; or~~;~~

(ii) South Coast AQMD Test Method 304 – Determination of Volatile Organic Compounds in Various Materials.

(2) Exempt Perfluorocarbon Compounds

~~SCAQMD Test Methods 302, 303, and 304 (SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual).~~

The following classes of compounds ~~: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will~~ shall be analyzed as ~~exempt compounds~~ Exempt Compounds for compliance with ~~subdivision (c)~~paragraphs (d)(1) and (d)(2), only at such time as manufacturers specify which individual

compounds are used in the ~~coating~~ Aerospace Materials formulations and identify the test methods, which ~~, prior to such analysis, have been~~ have be approved by the U.S. EPA, California Air Resources Board (CARB), and the South Coast AQMD prior to such analysis, that can be used to quantify the amounts of each ~~exempt compound~~Exempt Compound:~~.~~

(A) Cyclic, branched, or linear, completely fluorinated alkanes;

(B) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

(C) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

(D) Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

(3) Acid Content in Pretreatment Wash Primers

The acid content of Pretreatment Wash Primers shall be determined by ASTM Test Method D1613 – Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products.

~~(f) Test Methods~~

(~~1~~4) Air Pollution Control System Control Efficiency Determination

An owner or operator of a Facility that elects to comply with the VOC limits in paragraphs (d)(1) and/or (d)(2) using an Air Pollution Control Device pursuant to paragraph (e)(2) or elects to comply with the Level II Materials prohibition in paragraph (f)(3) using an Air Pollution Control Device pursuant to paragraph (e)(2) shall:

(A) Determine the ~~Efficiency~~efficiency of the control device ~~shall be determined according to~~by:

(i) South Coast AQMD's "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency;" or

(ii) Any other test method approved by the U.S. EPA, CARB, and the South Coast AQMD Executive Officer; and

(B) Determined the efficiency and the VOC content in the Air Pollution Control Device Efficiency exhaust gases, measured and calculated as carbon by:

(i) U.S. EPA Method 25 – Determination of Total Gaseous Nonmethane Organic Emissions as Carbon;~~,~~

(ii) U.S. EPA Method 25A – Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer;~~,~~

(iii) South Coast AQMD Test Method 25.1 – Determination of Total Gaseous Non-Methane Organic Emissions as Carbon;~~,~~ or

(iv) South Coast AQMD Test Method 25.3 – Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources. ~~Emissions determined to exceed any limits established by this rule through the use of either of the above-referenced test methods shall constitute a violation of this rule.~~

~~(2) The capture efficiency of the emissions collection system shall be determined by the USEPA method cited in 55 FR (Federal Register) 26865, June 29, 1990 or any other method approved by the USEPA, the California Air Resources Board, and the SCAQMD.~~

(~~3~~5) Transfer Efficiency

The ~~transfer efficiency~~Transfer Efficiency of alternative application methods, as defined by paragraph (c)(85), shall be determined in accordance with the most current versions of the South Coast AQMD methods:

(A) "Spray Equipment Transfer Efficiency Test Procedure for Equipment User;~~, May 24, 1989~~" and

(B) "Guidelines for Demonstrating Equivalency With District Approved Transfer Efficiency Spray Gun."~~.~~

(~~4~~6) VOC Composite Partial Pressure

The identity and quantity of components in solvents shall be determined in accordance with South Coast AQMD ~~test method~~ Test Method 308 – ~~(~~Quantitation of Compounds by Gas Chromatography~~) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual. The~~ and the ~~VOC composite partial pressure~~VOC Composite Partial Pressure ~~is~~shall be calculated using the equation in paragraph ~~(b)(72)~~(c)(87).

(~~5~~7) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of

the specified test methods or set of test methods shall constitute a violation of the rule.

~~(6) All test methods shall be those referenced in this section or any other applicable method approved by the USEPA, the California Air Resources Board, and the SCAQMD.~~

(8) Equivalent Test Methods

Other test methods determined to be equivalent and approved by the U.S. EPA, CARB, and the South Coast AQMD Executive Officer, and approved in writing by the South Coast AQMD Executive Officer may also be used.

~~(g) Rule 442 Applicability~~

~~Any material, operation, or facility which is exempt from all or a portion of this rule, shall comply with the provisions of Rule 442.~~

~~(h) Prohibition of Solicitation of Violations~~

~~(1) A person shall not solicit or require any other person to use, in the District, any material or combination of materials to be applied to any aircraft component subject to the provisions of this rule that does not meet the limits and requirements of this rule, or of an Alternative Emission Control Plan (AECP) approved pursuant to the provisions of subdivision (i).~~

~~(2) The requirements of this paragraph shall apply to all written or oral agreements executed or entered into after April 3, 1987.~~

~~(i) Alternative Emission Control Plans~~

~~An owner/operator may comply with the provisions of paragraph (c)(1) by means of an Alternative Emission Control Plan pursuant to Rule 108.~~

~~(j) Reporting Requirements~~

~~Persons who perform qualification acceptance testing on materials with a future compliance date for use in the District shall, beginning July 1, 1994 and at 6-month intervals thereafter, submit a status report describing the progress toward the development of materials which satisfy future compliance dates. These reports shall contain, at a minimum:~~

~~(1) Manufacturer, product number, VOC content, and applicable material category for each of the test candidates;~~

~~(2) Test expenditures for the period;~~

~~(3) Progress on candidates tested during this period.~~

~~(4) Approvals received for materials which comply with future compliance dates.~~

~~(5) Volume of materials used in each material category for which there is a future compliance date.~~

~~Facilities testing materials in the same material category may submit joint status reports. Once compliance with future compliance dates is achieved and a status report is submitted documenting such, no further status reports need be submitted.~~

(~~k~~j) Air Toxics

Facilities that submitted a compliance plan and received South Coast AQMD Executive Officer approval prior to [*Date of Rule Adoption*], may continue to ~~In lieu of~~ comply~~ing~~ with subdivisions (e), (f), (h), and (i) of Rule 1402 - Control of Toxic Air Contaminants from Existing Sources, ~~a facility may submit a compliance plan to the District for the Executive Officer's approval within 180 days from the date of Health Risk Assessment approval that~~by demonstrat~~inges how~~ a ~~toxicity-weighted emissions reduction efficiency~~ Toxicity-Weighted Emissions Reduction Efficiency of at least 90.0 percent for ~~toxic organic solvents~~ Toxic Organic Solvents and at least 99.0 percent for ~~toxic particulate matter~~ Toxic Particulate Matter emissions has been achieved and will be maintained in the future.

(k) Rule 442 Applicability

Any owner or operator of a Facilty who uses an Aerospace Material that is exempt from the VOC limits in this rule, shall comply with the provisions of Rule 442 – Usage of Solvents.

(l) Exemptions

(1) The ~~provisions of~~ VOC limits specified in paragraphs ~~(c)(1)~~(d)(1) or (d)(2) ~~of this rule~~ shall not apply to ~~materials~~Aerospace Materials, exclusive of ~~adhesives~~Adhesives, with separate formulations that are used in volumes of less than 20 gallons per year provided that the total of such formulations applied annually by a ~~facility~~ Facility is less than 200 gallons.

(2) The provisions of subdivision (~~c~~d) of this rule shall not apply to a ~~facility~~ Facility which uses a total of less than three gallons of VOC-containing materials on each and every day of operation.

(3) The provisions of paragraphs ~~(c)(1)~~(d)(1) and ~~(c)(3)~~(d)(7) of this rule shall not apply to incidental corrosion maintenance ~~repair coating~~Repair Coating operations at military facilities, provided that the coating use at any

maintenance repair location within the ~~facility~~ Facility does not exceed 1.5 gallons per day, and the total coating usage for such operations at the ~~facility~~ Facility does not exceed five gallons per day.

(4) The VOC limits specified in paragraph (d)(1) Table 2 for Cleaning ~~s~~Solvents and ~~strippers~~ Strippers shall not apply to ~~space vehicle~~Space-Vehicle manufacturing.

(5) The provisions of paragraph ~~(c)(1)~~(d)(1) shall not apply to clear or translucent coatings applied on clear or transparent substrates.

(6) The provisions of paragraph ~~(c)(3)~~(d)(7) shall not apply to ~~touch-up~~Touch-Up and ~~stencil coatings~~Stencil Coatings.

(7) The provisions of paragraph ~~(c)(1)~~(d)(1) shall not apply to the recoating of assembled ~~aircraft~~ Aircraft at ~~rework~~ Rework facilities if original coating formulations are used.

(8) The provisions of paragraph ~~(c)(1)~~(d)(1) shall not apply to ~~adhesives~~ Adhesives with separate formulations that are used in volumes of less than ten gallons per year.

(9) The provisions of paragraph ~~(c)(3)~~(d)(7) shall not be applied to the application of materials marking coatings.

(10) The provisions of subdivisions (~~c~~d) and (f) shall not apply ~~to~~ Aerospace Materials to test specimens in Facility laboratories ~~which apply materials to test specimens~~ for purposes of research, development, quality control, and testing for production-related operations.

(11) The provisions of subdivision (~~c~~d) shall not apply to the application of ~~temporary marking coatings~~Temporary Marking Coatings.

(12) The VOC limits for solvents shall not apply to the surface cleaning of solar cells, fluid systems, avionic equipment, and laser optics.

(13) The provisions of subdivision (~~d~~g) and paragraph ~~(c)(3)~~(d)(7) shall not apply to the application of materials that contain less than 20 g/L of VOC per liter of material.

(14) The provisions of paragraph (~~c~~d)~~(3)~~(7) shall not apply to the use of materials dispensed from airbrush operations.

(15) The provisions of this rule shall not apply to ~~aerosol coating products~~Aerosol Coating Products.

~~(16) Until January 1, 2005, the VOC limit for fuel tank coatings shall not apply to non-spray rubber solution fuel-tank coating, containing less than 710 g/L of VOC per liter of coating, used on fuel tanks with maximum capacity of~~

~~35 gallons and where the total facilitywide usage of this coating is less than 150 gallons per year. Records shall be maintained pursuant to the requirements of Rule 109 to establish eligibility for this exemption.~~

ATTACHMENT A

Usage Limits for pCBtF and t-BAc Containing Aerospace Material

TABLE A-1: Annual Usage Limits for Facilities with an Approved Air Pollution Control Device

Sensitive Receptor Distance	Annual Usage Limits (Gallons Per Year)
0 to25	250
26 to 50	1,000
51 to 75	1,700
76 to 100	2,500
101 to 125	3,200
126 to 150	3,800
151 to 175	6,000
176 or Greater	10,000

TABLE A-2: Annual Usage Limits for Facilities without an Air Pollution Control Device

Sensitive Receptor Distance	Annual Usage Limits (Gallons Per Year)
0 to25	1.25
26 to 50	4.5
51 to 75	7.5
76 to 100	11
101 to 125	14.5
126 to 150	18
151 to 175	26.5
176 or Greater	46