SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Preliminary Draft Staff Report

Proposed Amended Rule 1124 – Aerospace Assembly and Component Manufacturing Operations

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EXECUTIVE SUMMARY

Rule 1124 – Aerospace Assembly and Component Manufacturing Operations (Rule 1124) was adopted in July 1979 to limit Volatile Organic Compound (VOC) emissions from aerospace coatings, adhesives, sealants lubricants, maskants, and cleaning solvents used in manufacturing, and maintenance. This rule applies to facilities that use aerospace materials in the production, repair, and servicing of aerospace components, including commercial and military aircraft, satellite, space shuttles, and rocket manufacturers and their subcontractors. Over time, Rule 1124 has been amended to reduce VOC limits, align with the United State Environmental Protection Agency (U.S EPA) National Aerospace Coating Rule, and support South Coast Air Quality Management District (South Coast AQMD) overall VOC emission reduction efforts.

To meet increasingly stringent VOC limits, aerospace materials have been reformulated using VOC-exempt solvents, most notably *para*-chlorobenzotrifluoride (pCBtF; Chemical Abstracts Service Registration Number (CAS RN): 98-56-6) and *tert*-butyl acetate (t-BAc; CAS RN: 540-88-5). Subsequent toxicological evaluations conducted by the Office of Environmental Health Hazard Assessment (OEHHA) determined that both compounds have toxic endpoints, with cancer potency values comparable to or greater than other compounds already prohibited in South Coast AQMD rules. In response to the findings, the South Coast AQMD Stationary Source Committee directed staff to address these two toxic solvents. PAR 1124 proposes to phase out pCBtF and t-BAc from aerospace coating materials while providing feasible compliance pathways for the aerospace industry. In addition, PAR 1124 partially implements 2022 Air Quality Management Plan (AQMP) control measure CTS-01 – Further Emission Reductions from Coatings, Solvents, Adhesives, and Lubricants.

To determine the extent of pCBtF and t-BAc use in aerospace material, staff conducted a manufacturer survey which showed pCBtF usage in four categories: primers, topcoats, sealants and maskants, whereas t-BAc is used in a smaller subset of topcoat categories. Adhesives, lubricants, and cleaning solvents did not report any use of exempt solvents. Industry stakeholders expressed concern regarding coating reformulation efforts, which have significant challenges for aerospace coatings including rigorous qualification and recertification processes to meet military or original equipment manufacturer (OEM) specifications. Coating manufacturers stated reformulations efforts can take decades.

To address the challenges and balance public health protection, staff is proposing a two-tiered alternative compliance framework which will classify the aerospace materials used into two levels. Level I materials are those that do not rely on pCBtF or t-BAc or have readily available alternatives; Level II materials are those that do rely on pCBtF or t-BAc in their formulation. Level I materials will be subject to a future effective prohibition with allowed sell-through and use-through periods to address stranded asset concerns in the supply change. Level II materials will be permitted to be sold and used in the South Coast AQMD, local shops that apply aerospace materials will be provided three compliance pathways designed to protect public health but allow for the use of certain critical aerospace coatings that contain pCBtf.

The three proposed compliance options for Level II materials are summarized below.

- **Option 1 – Air Pollutions Control System:** Allows for continued use of Level II materials if emissions are fully vented to an air pollution control device that achieves a minimum of

95 percent control efficiency and complies with receptor-based annual usage limits specified in the rule.

- **Option 2 – pCBtF and t-BAc Phase-out:** Facilities may elect to transition to aerospace materials that do not contain pCBtF- and t-BAc- within a specified prohibition and use-through timeframe. Unless a facility applies for Option 1 or Option 3, it will default to this phase-out compliance option**.**
- **Option 3 – Low-Use Provision:** Provide a low-use pathway for facilities that apply small quantities of Level II materials. Facilities may either limit total Level II usage to 1.25 gallons per year or obtain an annual usage limits specified in the rule.

CHAPTER 1 : BACKGROUND

INTRODUCTION
REGULATORY HISTORY
AFFECTED INDUSTRIES
PUBLIC PROCESS

Introduction

Rule 1124 – Aerospace Assemble and Component Manufacturing Operations is a source specific rule that was originally adopted on July 6, 1979, to reduce emissions of volatile organic compounds (VOCs) from aerospace manufacturing and coating applications. Rule 1124 establishes VOC content limits for eight primary categories and 55 subcategories which include adhesives, sealants, lubricants, maskants, and solvent cleaning materials used in aerospace manufacturing, rework, and maintenance. The rule applies to any person or facility that uses, supplies, sells, or applies aerospace materials within the South Coast Air Basin during the production, repair, or servicing of aerospace components, including military, commercial, and space-related operations.

Over time, amendments to Rule 1124 have aligned VOC limits with U.S. EPA's National Aerospace Coating Rule, military and original equipment manufacturer (OEM) material specifications, and South Coast AQMD's broader VOC reduction initiatives. To meet increasingly stringent VOC limits, manufacturers have relied on exempt solvents, particularly pCBtF and t-BAc. These solvents are considered as exempt because they are excluded from the definition of VOC; therefore, their use does not count toward the VOC content of an aerospace material, allowing manufacturers to formulate product that comply with VOC limits.

In April 2017, the South Coast AQMD Stationary Source Committee recommended a precautionary approach when considering exempt compounds with potential toxic endpoints by prioritizing reducing toxic exposure over reduction VOC emissions. The California Office of Environmental Health Hazard Assessment (OEHHA) determined pCBtF and t-BAc, have toxic endpoints; therefore, the South Coast AQMD has been working to phase out of, or minimize the exposure to, pCBtF and t-BAc. The current rule development has two primary goals: 1) phase-out of pCBtF and t-BAc in aerospace materials where feasible, and 2) to limit the use of, or require add-on air pollution control systems, for materials where phasing out of pCBtF and t-BAc is not feasible.

Regulatory History

Rule 1124 was adopted on July 6, 1979, and has been subsequently amended 19 times, most recent amendment occurred in 2001 and included updates to support the continued implementation of VOC limits across a broad range of aerospace materials. Earlier amendments were adopted to incorporate scheduled VOC content reductions, clarify applicability, and align the rule with advances in low emission coating technologies and evolving federal requirements, including the U.S. EPA National Aerospace Coating Rule. Previous amendments, most notably those adopted in 1992, 1993, and 1996, were designed to facilitate the transition toward lower-emitting materials by allowing the continued use of then-existing compliant technologies while industry reformulated products to meet future limits.

Background on t-BAc and pCBtF

pCBtF was originally exempted from the definition of a VOC by the U.S. EPA in 1994, and in 2004, South Coast AQMD added pCBtF as an exempt VOC compound under Rule 102. This exemption means that pCBtF is not considered a VOC for any application within the South Coast AQMD. In the same year, the U.S. EPA also exempted t-BAc from the VOC definition. However, due to toxicity concerns, the South Coast AQMD did not grant a full Rule 102 exemption for t-BAc and instead allowed for limited use in source-specific rules such as Rules 1113 and 1151.

Stakeholders representing the regulated industry continued seeking to expand the exemption status for t-BAc; in 2014, staff paused VOC rule amendments to focus on assessing the health risk posed by t-BAc. In 2016, staff initiated a public process and released a final **Draft t-BAc Assessment White Paper**. In 2017, staff presented the toxicity concerns for t-BAc and the lack of a toxicity evaluation for pCBtF to the Stationary Source Committee. The Stationary Source Committee directed staff to take a precautionary approach for exempt compounds identified by OEHHA to have toxic endpoints and asked staff to request OEHHA evaluate pCBtF. In 2018, OEHHA finalized the assessment of t-BAc, identifying it as a potential carcinogen and in 2020, OEHHA also identified pCBtF as a potential carcinogen.

South Coast AQMD staff began amending VOC rules in 2022, beginning with Rule 1168 – Adhesive and Sealant Applications (Rule 1168), and modeling confirmed pCBtF and t-BAc would pose health risks to sensitive receptors near adhesive application projects, specifically for roofing projects. Further, staff concluded that both pCBtF and t-BAc exhibit toxicities comparable to chemicals that are already prohibited in some VOC rules; therefore, proposed prohibiting their use. Since Rule 1168, staff also amended Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operation; Rule 1171 – Solvent Cleaning Operations; and Rule 1107 – Coating of Metal Parts and Products to phase out the use of pCBtF and t-BAc and is currently working to address their use in all the South Coast AQMD VOC rules.

Affected Industries

This rule is applicable to any person who supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses, or distributes any aerospace material for use within the South Coast AQMD, as well as any person who uses, applies, or solicits the use or application of any aerospace material 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 maskant applicators, aircraft refinishers, aircraft fastener manufacturers, aircraft operators, and aircraft maintenance and service facilities.

To determine the number of facilities subject to Rule 1124, staff conducted an analysis using an internal database, which identified 392 facilities within the South Coast AQMD jurisdiction that were permitted to use materials subject to Rule 1124. Table 1-1 – Rule 1124 facilities, shows the distribution of these facilities across the four counties. These facilities encompass a range of industries, including but not limited to commercial and military aircraft manufacturing, aircraft maintenance and repair operations, space vehicle and satellite production, aerospace component and subassembly fabrication, surface treatment and finishing operations, and precision manufacturing activities that support the broader aerospace supply chain.

Table 1-1: Rule 1124 Facilities

County	Active Facilities	Percentage
Los Angeles	259	66%
Orange	92	23%
Riverside	18	4%
San Bernardino	24	6%
Total	393	100%

Process Description

Rule 1124 is applicable to any operation associated with manufacturing and assembling products for Aircraft and Space Vehicles for which an Aerospace Material is used

Aerospace materials are integral to the production, repair, maintenance, and servicing of aircraft, spacecraft, satellites, and related components. These materials serve a variety of functions, including corrosion protection, structural bonding, environmental sealing, surface preparation, and surface finishing, all of which are critical to ensuring the safety, performance, and longevity of aerospace systems.

A key aspect of aerospace manufacturing is the use of military specification (mil-spec) materials, which are formulated to meet highly specialized performance, safety, and durability requirements defined under federal procurement standards (e.g., MIL-PRF, MIL-DTL, and AMS specifications). These materials must undergo rigorous qualification and certification processes to demonstrate compliance and as such many aerospace platforms, including commercial aircraft, military vehicles, and space systems, rely on materials qualified under these specifications.

Public Process

The current rule amendment process began in July 2024. Staff conducted five working group meetings and multiple individual meetings with industry stakeholders and representatives. In addition, staff distributed a survey to the coating manufacturers requesting product data for each aerospace material category. The table below summarizes the key topics discussed at each of the Working Group Meetings; presentations from those meetings are posted on the South Coast AQMD's website.[1]

[1] http://www.aqmd.gov/home/rules-compliance/rules/scaqmd-rule-book/proposed-rules/rule-1124

Table 1-2: Working Group Meetings

Meeting title	Date	Highlights
Working Group Meeting #1	July 3, 2024	• Rule background • Key amendment objectives • Exempt solvent background
Working Group Meeting #2	August 16, 2024	• Amendment progress update • Coating manufacturer survey
Working Group Meeting #3	December 6, 2024	• Amendment progress update • Coating manufacturer survey data analysis
Working Group Meeting #4	September 5, 2025	• Amendment progress update • Initial Rule Concepts • VOC control technology
Working Group Meeting #5	November 19, 2025	• Amendment progress update • Rule concepts • Initial Preliminary Draft Rule Language

Additionally, staff conducted several site visits where various topics were discussed, including the types of aerospace materials used in the South Coast AQMD to gain a deeper understanding of aerospace industry operations and logistics. A summary of the site visits is provided in the table below.

Table 1-3: Site Visits

Stakeholder	Date
Denmac Industries Inc	July 25, 2024
The Boeing Company	July 21, 2024
Northrop Grumman	August 13, 2024
Hyatt Die Cast	August 22, 2024
United Airlines Inc	September 12, 2024
Raytheon Company	October 2, 2024
The Boeing Company	January 10, 2025
Precision Aerospace Corporation	March 26, 2025
Aviation Equipment Processing	April 23, 2025
Anadite Inc	May 14, 2025
Ducommun Aerostructures	June 17, 2025

CHAPTER 2 : TECHNOLOGY ASSESSMENT

AEROSPACE MATERIALS AND VOC CONTROL

AEROSPACE MATERIALS AND USE of pCBtF and t-BAc

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Aerospace Materials Manufacturer pCBtF and t-BAc Survey

To understand the extent of the use of pCBtF and t-BAc to comply with the VOC limits in Rule 1124, staff conducted a survey, in August 2024, of manufacturers who sell aerospace materials subject to Rule 1124. The main compounds of interest in the survey were pCBtF and t-BAc. The results of the survey were used to help evaluate VOC content limits, VOC emissions, a potential prohibition timeline, and future effective VOC content limits. The table below shows the survey questions.

Table 2-1: Aerospace Materials Survey Questions

Requested Information	
1.	Company name, contact person, and an email address
2.	Product name
3.	Product category
4.	VOC content of product (regulatory and actual)
5.	Is the product water or solvent based
6.	Percent content of pCBtF and/or t-BAc
7.	Annual sold volume and if that volume represents South Coat AQMD or California

In total, three aerospace materials manufacturers responded to the survey distributed as part of the PAR 1124 rule development process. Rule 1124 currently includes eight main categories encompassing 55 subcategories, covering topcoats, primers, adhesives, sealants, lubricants, maskants, and cleaning solvents. The following summarizes the major findings of the survey:

- A total of 329 aerospace products were reported to be sold within the South Coast AQMD jurisdiction. The table below summarizes the main product categories identified in the survey and the number of products reported within each category.

Table 2-2: Summary of the Number of Products Reported in Survey

Category	# of Products Reported
Primer	27,122
Topcoats	418
Sealants	9,922
Adhesives	154

- Three of the eight aerospace material categories were reported to contain pCBtF and/or t-BAc including primers, topcoats, and sealants. After the survey deadline, staff was contacted by a maskant manufacturer, who reported that certain maskant formulations also contain pCBtF expanding the number to four main categories.

- pCBtF was present in three of these main categories; primers, topcoats, and sealants, while t-BAc was reported only in topcoats.

- Within the primer category, both general primers and adhesion promoters were reported to contain pCBtF and no t-BAc. Approximately 51 percent of general primers contained pCBtF, representing the largest reported sales volume among all subcategories, while adhesion promoters were sold in low volumes but also relied on pCBtF to meet VOC limits. The figure below compares the sales volume of products containing pCBtF to those formulated without this solvent.

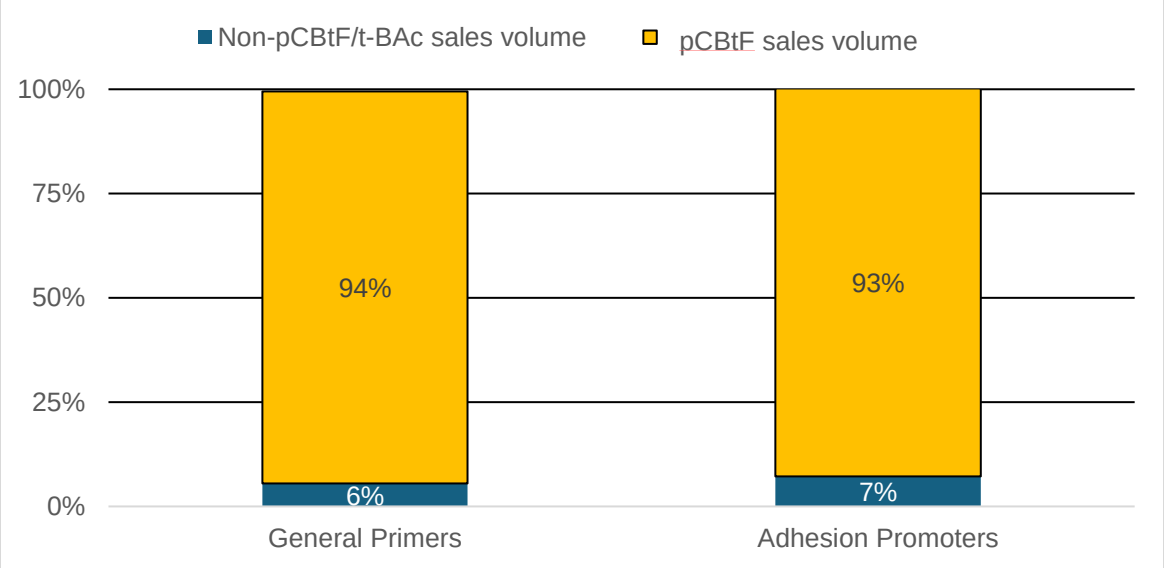

Figure 2-1 Sales Volume Percentage of pCBtF and non-pCBtF Products for Primer Category

For topcoats, approximately 71 percent of the reported products contained pCBtF, and 22 percent contained t-BAc. pCBtF was reported as the predominant exempt solvent in topcoat formulations. The chart below compares the products that contain pCBtF versus the ones that do not contain this solvent by sales volume.

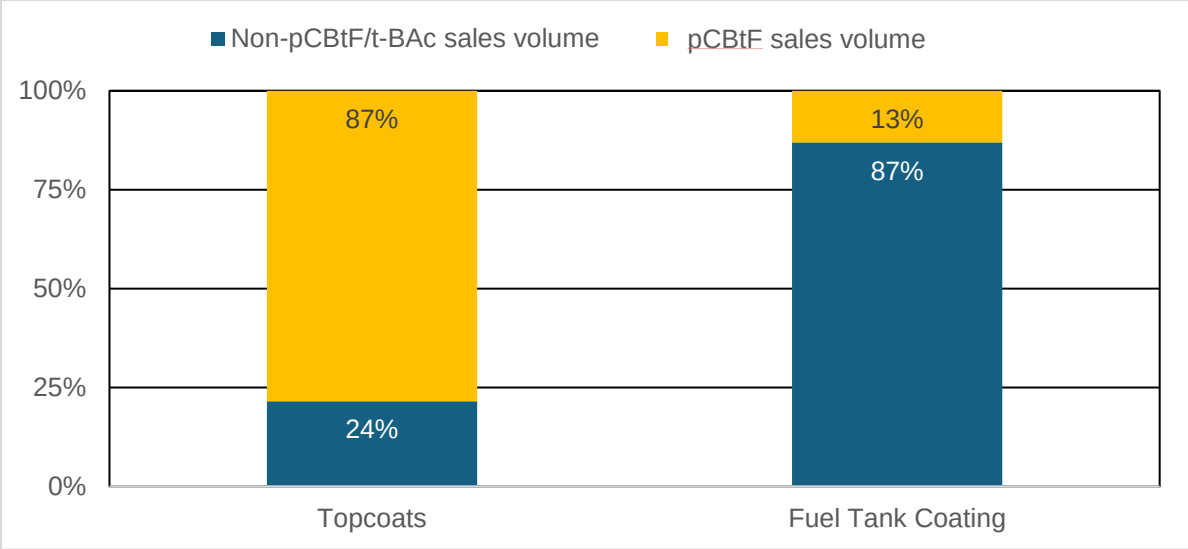

Figure 2-2 Sales Volume Percentage of pCBtF and non-pCBtF Products for Topcoat Category

- Sealants (extrudable, rollable, and brushable types) showed limited use of pCBtF (about 2 percent of products) and no use of t-BAc.

- Adhesives (structural and non-structural) were reported to contain neither pCBtF nor t-BAc.

- Maskants, lubricants, and cleaning solvents were not represented in the original survey responses; however, a maskant manufacturer later informed staff that certain maskant formulations also contain pCBtF.

To provide a clearer understanding of the distribution of pCBtF across categories, the aggregate results are summarized in Table 2-3 below.

Table 2-3: pCBtF Usage Reported by Aerospace Material Category

Category	Volume Sold (gal)	Range of wt% pCBtF	Average pCBtF
General Primer	27,122	4.4-42	~ 21
Adhesion Promoter	418	31-96.3	~ 70
Topcoats	9,922	0.7-26.7	~ 9.1
Sealants	154	0.5-10.8	~ 5.5

As shown in Table 2-3, general primers accounted for the largest reported sales volume, representing more than 70 percent of the total, while topcoats accounted for approximately 25 percent. Adhesion promoters, though sold in smaller volumes, contained the highest average pCBtF concentration (nearly 70 percent). Sealants showed minimal overall sales and limited pCBtF content.

Survey participants indicated that pCBtF is used to meet performance and durability requirements established under military, and OEM specifications. By contrast, t-BAc use is limited due to narrower formulation compatibility in aerospace systems.

Industry stakeholders emphasized that transitioning away from pCBtF will require extensive reformulation, requalification, and certification testing. Reformulation challenges are particularly acute for materials subject to military specifications, which undergo rigorous, multi-stage qualification testing before field approval, significantly extending the time and resources required for substitution.

Overall, the survey results indicate that pCBtF is the most prevalently used exempt solvent in aerospace materials regulated under Rule 1124, particularly in primer and topcoat formulations, while t-BAc use remains minimal and confined to a few specialty applications. Manufacturers and end users emphasized that transitioning away from pCBtF would require extensive reformulation, requalification, and certification testing due to the rigorous verification processes mandated under military and OEM specifications. Consequently, reformulation timelines are expected to be lengthy, often spanning decades according to the coating manufacturers, and for main coating categories (e.g., primers and topcoats) there are not compliant, pCBtF-free alternatives.

Aerospace Materials and Use of pCBtF and t-BAc

Following the results of the manufacturer survey and discussions with industry stakeholders, staff determined that the use of pCBtF and t-BAc across aerospace materials subject to Rule 1124 varies substantially by category and product type.

The survey revealed that pCBtF use is most prevalent in general primers, adhesion promoters, and topcoats, with average pCBtF concentrations of approximately 21 percent, 70 percent, and 9 percent, respectively. These materials also represent the highest reported sales volumes within the South Coast Air Basin. In contrast, sealants contained low concentrations of pCBtF (~5 percent), while adhesives, lubricants, and cleaning solvents were reported to contain none.

Following the survey, additional stakeholder input revealed that certain maskant formulations, particularly those used for chemical milling and etching, also contain pCBtF. Although maskants were not represented in the original survey responses, manufacturers later confirmed that pCBtF is used as a solvent component in some formulations to achieve desired viscosity, film integrity, and peel performance.

Industry stakeholders emphasized that for topcoats, and primers subject to military, OEM, or aerospace material specifications, reformulation is not a straightforward substitution process. The extensive qualification, requalification, and recertification requirements for these materials make reformulation cycles long and resource intensive. These constraints make a phase out of pCBtF and t-BAc infeasible for certain primers and topcoats, especially when used for military aircraft.

To protect public health and reduce exposure to pCBtF and t-BAc, staff developed a two-level regulatory framework that phases out the use of pCBtF and t-BAc in some aerospace materials

while providing feasible compliance pathways for specific material categories. This structure prioritizes risk reduction and exposure prevention ensuring that the most pCBtF-reliant materials transition through enforceable mechanisms, such as add-on controls, phase-out schedules, or low-risk exemptions. The two-level approach reflects the urgency to eliminate toxic exempt solvents from widespread use and the practical realities of reformulation in highly regulated aerospace applications.

Level I and Level II Materials

The two-level structure separates aerospace materials into categories based on their readiness to transition away from pCBtF or t-BAc:

- Level I Materials: Aerospace materials that either do not rely on pCBtF or t-BAc to meet current VOC limits or have readily available alternative formulations that can be adopted without extensive qualification testing.
- Level II Materials: Aerospace materials that rely on pCBtF or t-BAc, particularly those subject to military or OEM performance specifications requiring multi-year requalification.

Level I Materials

Level I materials include categories identified as having little or no dependance on pCBtF or t-BAc or for which non-toxic alternatives are already available. Table 2-5 outlines which categories and subcategories were identified as Level I materials.

Table 2-4: Categories and Subcategories in Level I Materials

Category	Subcategory
Primers	• Adhesion Promoter
Adhesives	• Non-Structural Adhesive • Structural Adhesive (Autoclavable and Non-Autoclavable) • Space vehicle Adhesive • Fuel Tank Adhesive
Sealants	• Fastener Sealant • Extrudable, Rollable, or Brushable Sealant • Other
Maskants	• For Chemical Processing • For Chemical Milling (Type I and Type II) • Photolithographic • Touch-up, Line Sealer Maskants

Category	Subcategory
Lubricants	• Fastener Installation (Solid-Film Lubricant and Dry Lubricative Materials) • Fastener-Lubricative Coatings, Fastener Manufacturing (Solid Film Lubricant Dry Lubricative Materials and Barrier Coating) • Non-Fastener Lubricative Coatings, Fastener Manufacturing (Solid-Film Lubricant and Dry Lubricative Materials)
Cleaning Solvents and Strippers	

For these aerospace materials, staff is proposing a prohibition for pCBtF and t-BAc that includes sell-through and use-through periods for materials already in the supply chain to address stranded assets associated with existing inventory. The sell-through and use-through is for any materials that are manufactured prior to the proposed prohibition date of May 6, 2026. The following table provides a summary of the proposal for Level I Materials:

Table 2-5: Level I Materials pCBtF and t-BAc Prohibition Schedule

Categories and Applicable Subcategories	Prohibition Date	Sell-Through Date	Use-Through Date
Adhesives	May 6, 2026	May 6, 2027	May 6, 2028
Sealants			
Lubricants			
Cleaning Solvents			
Strippers			
Adhesion Promoters			
Maskants	March 6, 2028	March 6, 2029	March 6, 2030

This approach mirrors existing South Coast AQMD rules such as, Rule 1151 - Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations and Rule 1171 – Solvent Cleaning Operations, where categories with viable reformulated options are transitioned providing reductions in pCBtF and t-BAc emissions.

Adhesion Promoters

Adhesion promoters are coatings applied directly to uncoated or previously coated plastic, composite, or metallic surfaces to enhance the bond strength of subsequently applied primers or topcoats. They are typically low-solids, single-component coatings formulated applied at low film thickness to improve surface wetting and film uniformity.

Survey results show that adhesion promoters are formulated with very high concentrations of pCBtF, often exceeding 70 percent by weight. These materials are sold and used in very low volumes, primarily as specialty products for surface-preparation or bonding applications.

Currently, these coatings achieve the 250 g/L VOC limit using pCBtF as an exempt solvent. To facilitate a feasible transition away from pCBtF while ensuring product performance, staff is proposing to increase the VOC content limit for adhesion promoters from 250 g/L to 750 g/L, similar to the recent phase-out approach adopted under Rule 1151.

Also, similarly to Rule 1151, PAR 1124 also includes an alternative Product-Weighted Maximum Incremental Reactivity (PW-MIR) VOC limit of 2.00 g O3/g product for adhesion promoters. Traditional mass-based VOC limits treat all VOCs equal, other than water and exempt compounds which are excluded. However, research has shown that different solvents have varying potentials to form ground-level ozone. The MIR scale measures the relative ozone-forming potential of VOCs, offering a more nuanced approach than traditional mass-based limits. By using a PW-MIR VOC limit, one can account for the differences in reactivity, ensuring that products with more reactive VOCs are more strictly regulated, while less reactive VOCs are afforded some flexibility. The California Air Resources Board (CARB) published MIR values for various VOCs, which have been instrumental in developing the limit.

The proposed PW-MIR limit is designed to achieve equal or greater reductions in ground-level ozone compared to traditional mass-based VOC limits because manufacturers can limit solvents with higher ozone forming potential rather than treating each solvent equally, offering more flexibility in product reformulation. Additionally, PW-MIR limits are particularly beneficial for coatings with low solids content. For these coatings, there are limited options to reduce VOC content, especially when compounds such as pCBtF and t-BAc are no longer allowed for use.

Level II Materials

Level II Materials are aerospace materials that rely on pCBtF or t-BAc to achieve existing VOC limits and for which compliant alternative formulations are not available and will be very challenging to formulate. The two primary categories and their subcategories for Level II materials are summarized on the table below.

Table 2-6: Categories and Subcategories in Level II Materials

Category	Subcategory
Primers	• General Primer • Low-Solids Corrosion Resistant Primer • Pretreatment Primer • Rain Erosion-Resistant Coating Compatible Primer • Adhesive Bonding Primer (New Commercial Aircraft, All Military Aircraft, Remanufactured Commercial Aircraft Parts, Sonic and Acoustic Applications) • Adhesive Bonding Primer (Long and Short Term)

Category	Subcategory
Topcoats	• General Topcoat • Clear Topcoat • Wing Coating • Impact Resistant Coating • High-Temperature Coating • Antichafe Coating • Rain Erosion-Resistant Coating • Conformal Coating • Optical Anti-Reflective Coating • Scale Inhibitor • Metallized Epoxy Coating • Electric or Radiation Effect Coating • Temporary Protective Coating • Fuel Tank Coatings • Mold Release Coatings • Flight Test Coatings (Used on Missile or Single Use Target Craft, and all other) • Fire Resistant Coatings (Commercial and Military) • Wire Coatings (Phosphate Ester Resistant Ink and other) • Space Vehicle Coatings (Electrostatic Discharge Protection coating and other)

To ensure any continued use of pCBtF or t-BAc containing materials can be used in a manner that protects public health, staff analyzed and developed three compliance pathways for Level II materials. summarized in the table below:

Table 2-7: Summary of different Compliance Pathways for Level II Materials

Compliance Pathway	Description
Option 1 – Air Pollution Control System	Allows continued usage of pCBtF or t-BAc containing Level II materials if spray booth, curing oven or application area is vented to an approved air pollution control device
Option 2 – Phase out of pCBtF or t-BAc	Facility-level phase out where the facility opts to only apply materials that do not contain pCBtF or t-BAc
Option 3 – Low-Use	Facility limits use of pCBtF and t-BAc containing coatings to levels that are health protective

These options are meant to allow facilities to select the most appropriate approach based on operational needs while protecting public health.

Option 1 – Air Pollution Control Devices

The objective of this option is to reduce pCBtF and t-BAc exposure to sensitive receptors while providing flexibility when coating reformulation is not feasible. Under this compliance pathway, facilities may continue using pCBtF and t-BAc-containing Level II materials, provided that emissions are captured and controlled through an approved air pollution control system. This option supports compliance through a health-protective engineering control that achieves meaningful reductions in toxic emissions while allowing continued use of critical aerospace materials.

Air pollution control systems are already used for certain aerospace coating operations, such as spray booths equipped with dry filters designed to capture and remove particulate matter, including overspray solids. However, dry filters are not effective for capturing or destroying gaseous toxic compounds like pCBtF, which remain in the vapor phase after coating application. To address this limitation, staff evaluated control technologies capable of achieving high control efficiency. Two technologies were analyzed and evaluated for applicability to aerospace coating operations: Carbon Adsorption Systems and Thermal Oxidizers.

1. Carbon Adsorption Systems

Carbon adsorption systems utilize beds of activated carbon to capture and remove VOCs and toxic air contaminants from process exhaust streams. Through physical adsorption, organic vapors adhere to the porous surface of the carbon media, removing gaseous pollutants prior to discharge to the atmosphere.

To evaluate the feasibility of these systems for aerospace coating operations, staff consulted with a carbon adsorber manufacturer and conducted a site visit at a local facility currently operating such a system. The manufacturer confirmed that their systems can achieve 95 percent or greater control efficiency for pCBtF, t-BAc, and similar organic compounds, provided the system is properly designed, maintained, and operated within its design parameters.

Carbon adsorbers can be configured as fixed-bed or dual-bed systems and are available in capacities of up to 40,000 cubic feet per minute (CFM). Key design parameters include airflow rate, compound concentration, humidity, and exhaust temperature, all of which influence adsorption efficiency and carbon media life. Systems can also be equipped with sampling ports to facilitate source testing and mist eliminators to address humidity or particulate loading and can be fitted depending in space restrictions of the facility.

A typical system designed for a 20,000 CFM exhaust flow would have an approximate diameter of 12 to 24 feet and a height of 10 to 20 feet, containing up to 45,000 pounds of activated carbon. The estimated capital cost for such system ranges from $80,000 to $150,000, depending on design configuration and integration requirements. However, carbon replacement represents the most significant ongoing cost, as spent carbon must be managed as hazardous waste. Replacement and disposal costs can reach up to $200,000 per changeout, depending on carbon loading and solvent concentration.

Staff evaluated a conservative replacement scenario assuming a spray booth with a VOC emission limit of 25 pounds per day, operating continuously (24 hours per day, 365 days per year). Under

this assumption, annual carbon replacement would likely be necessary to maintain performance and prevent breakthrough. Actual replacement frequency will vary depending on throughput, exhaust flow, and the concentration of organics in the air stream.

In addition, as part of this evaluation, staff visited a local aerospace coating facility operating a carbon adsorption system controlling perchloroethylene emissions from a 16,666-gallon enclosed dip tank used for maskant application. The process tank is fully enclosed, and all exhaust gases are routed to the carbon adsorption unit. The system has been in continuous operation for over 25 years, demonstrating long-term reliability and effectiveness in controlling emissions.

The carbon adsorber manufacturer also confirmed another installation at a military aerospace coating facility in the Bay Area, where a spray booth is equipped with a similar carbon adsorption system for VOC and toxic air contaminant control. These examples demonstrate that carbon adsorption is a technically feasible, field-proven, and reliable control technology for aerospace coating operations.

2. Thermal Oxidizers

Thermal Oxidizers are combustion devices that control VOC, and volatile toxics air contaminant emissions by combusting them to carbon dioxide and water. Thermal oxidizers are similar to catalytic oxidizers (catalytic oxidizers use a catalyst to promote the oxidation reaction). Important design factors include temperature (a temperature high enough to ignite the organic constituents in the waste stream), residence time (sufficient time for the combustion reaction to occur), and turbulence or mixing of the combustion air with the waste gas. Thermal Oxidizers can achieve destruction efficiencies exceeding 98 percent and some configurations are used to achieve similar control efficiencies at lower temperatures.

While technically feasible for aerospace coating operations, the application of thermal oxidizers for pCBtF and t-BAc emissions control presents challenges. The biggest concern is that pCBtF is a chlorinated and fluorinated compound, thermal oxidation of this compound produces acidic byproducts, including hydrochloric acid (HCl) and hydrofluoric acid (HF). To comply with emission standards and prevent corrosion, thermal oxidizer systems would require the addition of a scrubber to neutralize acid gases before release, further increasing system complexity, cost, and operational requirements.

Given these factors, thermal oxidizers, while technically capable of destruction of pCBtF and t-BAc emissions, are not the most practical or sustainable control option for most aerospace coating operations subject to Rule 1124.

In contrast, carbon adsorption systems offer a more adaptable and scalable solution for typical aerospace coating application in the South Coast AQMD, where emissions are variable, and coating operations occur intermittently. Carbon adsorbers provide similar toxic compound removal efficiency without generating secondary combustion emissions and are more readily integrated into existing spray booth or enclosure systems.

Health Risk and Usage Modeling

To support the development of usage-based limits for facilities electing Option 1, staff conducted health risk assessments (HRA) using conservative assumptions representative of aerospace coating operations and evaluated emissions using the South Coast AQMD Health Risk Assessment Tool.

The modeling was based on a Tier 2 assessment using a primer formulation containing 20 weight-percent pCBtF, which reflects the average pCBtF content reported for the primer category, as reported in the manufacturer survey. Emission rates were calculated assuming a continuous operation scenario where the exhaust stream is captured in an air pollution control system operating at 95 percent control efficiency.

Meteorological data from KHHR – Northrop Field was used because many facilities subject to PAR 1124 are located in the vicinity of this station. The remaining parameters and assumptions used in the modeling are listed below.

- Control Factor: 95 percent
- Meteorological Data: KHHR – Northrop Field
- Spray Booth: Without burner; stack height between 16 and 24 feet
- Operating Hours: 24 hours/day, 7 days/week, 52 weeks/yea
- Toxic Air Contaminant Emission Rates: Variable, modeled at 20 percent by weight pCBtF
- Sensitive Receptor Distance: Variable

These inputs intentionally use conservative assumptions to ensure that resulting usage thresholds remain health-protective under a wide range of real-world conditions.

Based on these assumptions, staff developed receptor-based annual usage limits that scale with the distance to the nearest sensitive receptor. These limits form the basis of the enforceable usage restrictions for facilities using Option 1. The proposed usage limits are shown below:

Table 2-8: Usage Limits for Level II Materials Option 1

Sensitive Receptor Distance (meter)	Annual Usage Limits (Gallons Per Year)
0 to 25	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
151to 175	6,000
176 or Greater	10,000

Usage limits increase with distance and are structured to ensure emissions remain controlled when routed through a properly operated 95-percent efficient air pollution control system. These limits apply per air pollution control system and are enforceable through facility permit conditions.

Overall, the modeling demonstrated that when a 95 percent efficient air pollution control system is combined with enforceable usage limits, facilities can continue limited use of Level II materials containing pCBtF and t-BAc. This approach allows facilities with limited options to transition to non-pCBtF/t-Bac materials to continue to operate.

Option 1 - Timeline

Under Option 1, facilities choosing to continue using Level II materials must install and operate an approved air pollution control system according to a defined implementation schedule. Facilities using pCBtF/t-BAc containing coatings are required to submit a complete South Coast AQMD permit application within six months of rule adoption, to establish permit condition(s) ensuring at least 95 percent control efficiency, and enforceable annual usage limits based on the distance from the stack to the sensitive receptor, or the conservative default allowance of 250 gallons per year per control system. Once the permit-to-construct is issued, facilities must begin operating the air pollution control system within 12 months, unless an extension is approved by the Executive Officer. To ensure timely compliance, any facility that elects Option 1 but does not obtain a Permit to Operate for the air pollution control device within four years of submitting a complete application will be required to cease the use of any Level II materials. This phased schedule ensures that facilities have a feasible period to permit, install, and demonstrate compliance while maintaining health-protective emission controls.

The rule also contains a pathway for option 1 for a facility that opts to use pCBtF/t-BAc coatings in the future. In that scenario, the facility cannot use the coatings until the air pollution control system is permitted, installed, and in operation.

Option 2 – Phase-out pCBtF and t-BAc

Option 2 provides a compliance pathway for facilities that can fully eliminate the use of pCBtF and t-BAc in Level II materials. This option applies to facilities that either do not perform work requiring coatings formulated with pCBtF or t-BAc or have transitioned or will transition to compliant, reformulated products that no longer contain these compounds.

Under Option 2, affected materials will be subject to a phased prohibition of pCBtF and t-BAc use, sale, and distribution, consistent with the timelines established for Level II materials. This structured approach ensures an orderly transition while preventing stranded inventory and providing adequate time for reformulation, qualification, and certification of alternative products.

Similar to Level I materials, a use-through provision will apply for any materials manufactured prior to the effective prohibition date. These provisions ensure supply continuity during the transition period while maintaining progress toward the complete elimination of toxic exempt solvents from aerospace coating operations. The proposed schedule for the Level II materials phase-out is shown below.

Table 2-9: Level II Materials, Option 2 pCBtF and t-BAc Prohibition Schedule

Prohibition Date	Use-Through Date
March 6, 2027	March 6, 2028

Facilities electing this compliance pathway must ensure that no pCBtF or t-BAc containing products are applied, possessed, or stored on-site after the applicable use-through date. Unless a facility has applied for compliance under Option 1 (Air Pollution Control Device) or Option 3 (Low-Use Exemption), the facility will default to Option 2 and must comply with the prohibition schedule provided in Table 2-11.

Option 3 – Low-Use

Option 3 provides a compliance pathway for facilities that use very limited quantities of topcoats and primers. This option is intended to provide flexibility for smaller facilities or those performing infrequent specialty work that cannot feasibly reformulate or justify the installation of an air pollution control system.

Under this option, a facility may continue to use Level II materials containing pCBtF or t-BAc only if total annual usage remains below enforceable, health-based limits. Facilities electing Option 3 must either comply with the 1.25 gallons a year limit demonstrated through recordkeeping or submit a complete permit application no later than six months after rule adoption (or prior to the use of any Level II materials after that date). The permit includes conditions that cap the facility's annual usage of Level II materials to receptor-based usage limits shown in the table below:

Table 2-10: Usage limits for Level II Materials, Option 3

Sensitive Receptor Distance (m)	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

To develop these usage limits, staff conducted a similar evaluation to the analysis used for option 1. This assessment evaluated the relationship between usage and potential off-site exposure using conservative assumptions. Inputs included continuous operation, an uncontrolled spray booth without a burner, and meteorological data from KHHR – Northrop Field, reflecting conditions present in areas where many affected aerospace facilities are located. These assumptions ensure that the resulting usage limits remain health-protective across a wide range of operating conditions.

The analysis assumed no other toxic air contaminants were present and calculated emissions on an hourly basis. For example, a facility using 10 gallons per year of a primer containing 20 wt% pCBtF would emit approximately 0.00392 pounds of pCBtF per hour. You can see the example calculation below:

$$\left[\frac{10\ gallons\ of\ primer}{year}\right] * \left[\frac{11.45\ lbs\ of\ primer}{gallon\ of\ primer}\right] * \left[\frac{0.20\ lb\ of\ pCBtF}{1\ lb\ of\ primer}\right] = \frac{22.9\ lb\ of\ pCBtF}{year}$$

$$\left[\frac{22.9\ lb\ of\ pCBtF}{year}\right] * \left[\frac{1\ year}{8760\ hours}\right] = .0026\ \frac{lb\ of\ pCBtF}{hour}$$

The resulting receptor-based usage limits establishes progressively higher allowable annual usage at greater distances from sensitive receptors. This structure ensures that low-use facilities can continue to conduct limited coating operations while maintaining health-protective outcomes. Facilities located closer to receptors are limited to the lowest usage levels, while those situated farther away may be permitted higher annual volumes consistent with Table 2-10.

Facilities electing Option 3 must operate in full compliance with the usage limits specified in their permit beginning on the date the Permit to Operate is issued. Ongoing recordkeeping and usage tracking are required to verify compliance, and records must be made available to South Coast AQMD upon request.

Overall, Option 3 provides a flexible compliance pathway for facilities with minimal usage of Level II materials, allowing continued operations without installing an air pollution control system or transitioning immediately to reformulated products.

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CHAPTER 3 : SUMMARY OF PROPOSALS

Introduction

The main objective of the proposed amendments to Rule 1124 is to phase out the use of pCBtF and t-BAc as solvents in aerospace materials, as directed by the South Coast AQMD's Stationary Source Committee, due to toxicity concerns.

Staff is proposing the following amendments to Rule 1124. The proposed amendments primarily pertain to the prohibition of pCBtF and t-BAc use in the regulated products and the introduction of alternative compliance pathways, including the installation of air pollution control systems and a low-use risk-based exemption. Some other amendments are for the purpose of rule clarification or streamlining. The proposed revised rule structure and key provisions are discussed in the following sections.

Proposed Amended Rule Structure

(a) Purpose
(b) Applicability
(c) Definitions
(d) Requirements
(e) Alternative Compliance Options
(f) Prohibition of Possession, Specification, Sale or Use
(g) Administrative Requirements
(h) Source Testing
(i) Test Methods
(j) Rule 442 Applicability
(k) Exemptions
Attachment A

Proposed Amended Rule 1124

Purpose [Subdivision (a)]

The purpose of this rule is to reduce VOC emissions from aerospace assembly and component manufacturing operations.

No significant revisions were made to this subdivision. The subdivision previously combined with the following Applicability subdivision; however, staff separated the two into separate subdivisions to be consistent with the structure of similar rules. Staff capitalized defined terms to indicate that definitions for the associated terms can be found in the Definitions subdivision.

Applicability [Subdivision (b)]

Subdivision (b) updates the applicability section to align with the structure and terminology used in other South Coast AQMD VOC rules. The revisions clarify that PAR 1124 applies to any person 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 owner or operator of a facility who uses, applies, or solicits the use or application of such materials.

Staff updated applicability for consistency across other VOC rules. Staff also capitalized defined terms to indicate that definitions for the associated terms can be found in the definition's subdivision.

Definitions [Subdivision (c)]

To provide clarity, definitions are used in the proposed amended rule as a proper noun to better distinguish defined terms from common terms. Refer to PAR 1124 for a complete list of definitions.

The following are new definitions for Proposed Amended Rule 1124. For all definitions, refer to the preliminary draft rule of PAR 1124 released with the staff report. The following definitions will be added:

AIR POLLUTION CONTROL DEVICE in paragraph (c)(8), which means:

"is equipment installed for the purpose of reducing VOC and/or toxic emissions."

AIR POLLUTION CONTROL DEVICE EFFICIENCY in paragraph (c)(9), which means:

"in percent, is the ratio of the weight of the VOC removed by the control device from the effluent stream entering the control device to the weight of VOC in the effluent stream entering the control device, both measured simultaneously, and can be calculated by the following equation:

$$Control\ Device\ Efficiency \quad = \quad \frac{W_c - W_a}{W_c} \quad x \quad 100$$

Where: W_c = *Weight of VOC entering control device*

W_a = *Weight of VOC discharged from the control device"*

AIR POLLUTION CONTROL SYSTEM in paragraph (c)(10), which means:

"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."

CHEMICAL ABSTRACTS SERVICE REGISTRATION NUMBER (CAS RN) in paragraph (c)(13), which means:

"is a unique numerical identifier, assigned to a single chemical substance, to ensure unambiguous identification."

CLEANING SOLVENT in paragraph (c)(15), which means:

"is a VOC-containing liquid substance used to perform solvent cleaning."

CURING in paragraph (c)(19), which means:

"the process of drying and hardening of an Aerospace Material

EXECUTIVE OFFICER in paragraph (c)(25), which means:

"is as defined in Rule 102 – Definition of Terms (Rule 102)."

INK JET MARKING SYSTEM in paragraph (c)(39), which means:

"a non-contact, computer-controlled ink-jet system used to apply Stencil Coatings onto coated or uncoated aerospace parts."

LEVEL I MATERIALS in paragraph (c)(40), which means:

"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 where the use of para-chlorobenzotrifluoride (pCBtF, CAS RN, 98-56-6) and tert-butyl acetate (t-BAc; CAS RN: 540-88-5) will be phased out."

LEVEL II MATERIALS in paragraph (c)(41), which means:

"are Aerospace Materials identified in Table 1 or Table 2 as Level II Materials where the use of pCBtF and t-BAc will conditionally allowed."

MAXIMUM INCREMENTAL REACTIVITY (MIR) in paragraph (c)(48), which 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."

PERMANENT TOTAL ENCLOSURE in paragraph (c)(53), which means:

"a permanent building or containment structure, enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-off) that has limited openings to allow access for people and vehicles, that is free of breaks or deterioration that could cause or result in fugitive emissions, and has been evaluated to meet the design requirements set forth in U.S. EPA Method 204, or other design approved by the Executive Officer."

PERSON in paragraph (c)(54), which means:

"is as defined in Rule 102."

PRODUCT-WEIGHTED MIR (PW-MIR) in paragraph (c)(60), which means:

"the sum of all weighted-MIR for all ingredients in a Reducer or Thinner. 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,

$$PW\text{-}MIR = (Wtd\text{-}MIR)_1 + (Wtd\text{-}MIR)_2 + \ldots + (WtdMIR)_n$$

Where,

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

REACTIVE DILUENT in paragraph (c)(62), which means:

"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."

SCHOOL in paragraph (c)(69), which means:

"any public or private school, including juvenile detention facilities with classrooms, used for the education of more than 12 children at the school in kindergarten through grade 12. School also means an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as preschools, Early Head Start, Head Start, First Five, and Child Development Centers. A school does not include any private school in which education is primarily conducted in private homes. The term includes any building or structure, playground, athletic field, or other area of school property

SENSITIVE RECEPTOR in paragraph (c)(71), which means:

"any residence including private homes, condominiums, apartments, and living quarters; Schools as defined in paragraph (c)(69); daycare centers; and health care facilities such as hospitals or retirement and nursing homes. Sensitive Receptor includes long term care hospitals, hospices, prisons, and dormitories or similar live-in housing."

SOUTH COAST AQMD TEST METHOD in paragraph (c)(75), which 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)."

Requirements [Subdivision (d)]

This subdivision contains the provisions for any person or facility that applies any aerospace material to any operation associated with manufacturing and assembling products for Aircraft and Space-Vehicles.

Paragraph (d)(1) – VOC Content of Aerospace Materials

In paragraph (d)(1), PAR 1124 establishes VOC content limits for aerospace materials by category and subcategories, as summarized in PAR 1124 Table 1 – Table of Standards. Staff is not proposing to modify the existing VOC content limits for most categories; however, an amendment is proposed for the adhesion promoter's subcategory to facilitate the phase-out of pCBtF from 250 g/L to 750 g/L.

All other aerospace material categories will retain their current VOC content limits but will be subject to new prohibitions on pCBtF and t-BAc. Depending on whether materials are classified as Level I or Level II, different prohibition schedules will apply. Under this framework, products formulated to comply with existing VOC limits will no longer be permitted to contain these compounds after the applicable prohibition dates pursuant to subdivision (f) – Prohibition of Possession, Specification, Sale or Use.

Paragraph (d)(1) also removes references to Unicoat requirements, as no applications of these materials were identified during the rule development process. In conjunction with this revision, the associated VOC limit of 420 g/L has been removed from Table 1. These updates streamline

the rule by eliminating provisions for materials that are not currently used within the South Coast AQMD.

Additionally, the coatings category has been renamed topcoats for consistency with other South Coast AQMD coating rules. The table below summarize the VOC limits for each category and subcategory under PAR 1124, as well as their corresponding Level I or Level II classification.

Lastly, the column previously labeled "VOC Limit" has been renamed "Regulatory VOC g/L-Coating" to clarify that the limits apply to the regulatory VOC content of materials, as opposed to actual VOC content.

Table 3-1: Summary of the Regulatory VOC Content Limits and Material Level Consideration

Categories	Regulatory VOC g/L-Coating	Level I	Level II
Primers			
General Primer	350		✓
Pretreatment Wash Primer	780		✓
Rain Erosion-Resistant Coating Compatible Primer	850		✓
Adhesion Promoter	750	✓	
Adhesive Bonding Primer			
New Commercial Aircraft	250		✓
All Military Aircraft	805		✓
Remanufactured Commercial Aircraft Parts	805		✓
Sonic and Acoustic Applications	805		✓
Adhesive Bonding Primer			
Long Term	250		✓
Short Term	250		✓
Topcoats			
General Topcoat	420		✓
Clear Topcoat	520		✓
Wing Coating	750		✓
Impact Resistant Coating	420		✓
High-Temperature Coating	850		✓

Categories	Regulatory VOC g/L-Coating	Level I	Level II
Antichafe Coating	420		✓
Rain Erosion-Resistant Coating	800		✓
Conformal Coating	750		✓
Optical Anti-Reflective Coating	700		✓
Scale Inhibitor	880		✓
Metallized Epoxy Coating	700		✓
Electric or Radiation Effect Coating	800		✓
Temporary Protective Coating	250		✓
Fuel Tank Coatings	420		✓
Mold Release Coatings	780		✓
Flight-Test Coatings			
Used on Missiles or Single Use Target Craft	420		✓
All Other	840		✓
Fired Resistant Coatings			
Commercial	650		✓
Military	800		✓
Wire Coatings			
Phosphate Ester Resistant Ink	925		✓
Other	420		✓
Space-Vehicle Coatings			
Electrostatic Discharge Protection Coating	800		✓
Other	1000		✓
Adhesives			
Non-Structural Adhesive	250	✓	
Structural Adhesive			
Autoclavable	50	✓	

Categories	Regulatory VOC g/L-Coating	Level I	Level II
Non-Autoclavable	850	✓	
Space-Vehicle Adhesive	800	✓	
Fuel Tank Adhesive	620	✓	
Sealants			
Fastener Sealant	675	✓	
Extrudable, Rollable, or Brushable Sealant	280	✓	
Other	600	✓	
Maskants			
For Chemical Processing	250	✓	
For Chemical Milling			
Type I	250	✓	
Type II	160	✓	
Photolithographic	850	✓	
Touch-up, Line Sealer Maskants	750	✓	
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	✓	

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

Paragraph (d)(2) is a new paragraph that consolidates the VOC requirements for low-solids materials, cleaning solvents, and strippers into a single section to clarify that these categories are subject to Actual VOC limits rather than regulatory VOC limits. This paragraph also incorporates the alternative VOC composite vapor pressure limits for cleaning solvents and strippers. The intent of this reorganization is to improve readability and to clearly distinguish low-solids material requirements from other coating categories.

Table 3-2 Summary of Compliance Limits and Material Level Consideration for cleaning Solvents, Strippers, and Low-Solids Materials

Categories	Actual VOC Limit		Level I Materials	Level II Materials
	g/L-Material	mmHg		
Low-Solids Solvents				
Cleaning Solvents	200	45	✓	
Strippers	300	9.5	✓	
Low-Solids Coatings				
Adhesives, Coatings, Primers or Sealants	120	N/A	✓	
Corrosion Resistant Primer	350	N/A	✓	

Paragraph (d)(3) – Solvent Cleaning Operations, Storage, and Disposal

Paragraph (d)(3) replaces former paragraph (c)(2) and updates the solvent-cleaning provisions by revising rule references and clarifying applicability. Rule 1124 is intended to regulate cleaning activities associated with the preparation and cleaning of aerospace parts or components subject to coating under this rule. Cleaning of material application equipment, general work surfaces, and other ancillary operations is subject to Rule 1171. This paragraph also clarifies that cleaning solvents shall not be atomized unless the activity is vented to an approved Air Pollution Control Device.

Paragraph (d)(4) – Transfer Efficiency

Paragraph (d)(4) replaces former paragraph (c)(3) and retains the same provisions. It updates language to reflect revised rule references and numbering to ensure consistency to other South Coast AQMD Rules. Additionally, it adds ink jet marking system to the methods that need to comply with the provisions in paragraph (d)(4).

Paragraph (d)(5) – Air Pollution Control Device to Control VOC Emissions

Paragraph (d)(5) replaces former paragraph (c)(4) and updates the language to reflect revised rule references and numbering for consistency with the reorganized structure of the rule. This paragraph clarifies the requirements for facilities choosing to comply with the VOC limits in Table

1, Table 2, and/or the transfer efficiency requirements in subparagraph (d)(4) through the use of an approved Air Pollution Control Device. Specifically, it revises the enclosure requirement by specifying that emissions must be collected from a permanent total enclosure that satisfies the requirements of EPA Method 204, replacing the previous requirement to collect 90 percent of emissions by weight.

Alternative Compliance Options [Subdivision (e)]

Subdivision (e) reorganizes the provisions that were in formerly subdivision (i) – Alternative Emission Plans and consolidates the requirements related to compliance flexibility for regulated facilities. This subdivision also establishes the alternative compliance options available for Level II Materials. The reorganization improves clarity and flow by grouping all Level II Material compliance provisions into a single subdivision.

Paragraph (e)(1)

Paragraph (e)(1) contains the provisions for any person or facility that elects to comply with the requirements of paragraphs (d)(1) and/or (d)(2) through the use of an approved air pollution control system. This paragraph replaces former subdivision (i) – Alternative Emission Plans and retains the same substantive requirements, with updates limited to revised rule references and numbering for consistency with the reorganized structure of the rule.

Paragraph (e)(2) – Air Pollution Control Systems for Level II Materials

Paragraph (e)(2) establishes an alternative compliance option for facilities that elect to continue using Level II materials by installing an approved Air Pollution Control Device in lieu of complying with the prohibition in paragraph (f)(3). Facilities must submit a complete South Coast AQMD permit application no later than six months after the date of rule adoption. The permit must include conditions requiring: (1) an Air Pollution Control Device efficiency of at least 95 percent removal of VOC emissions, or equivalent mass emissions calculated as carbon with no dilution, as demonstrated through source testing pursuant to subdivision (h); and (2) the use or curing of Level II materials to be conducted within a permanent total enclosure fully vented to an Air Pollution Control System.

Upon issuance of the Permit to Operate, facilities must limit annual usage of Level II materials in each Air Pollution Control System to one of the following: (A) 250 gallons per year; (B) the receptor-based annual usage limits specified in Table A-1 in Attachment A of the rule; or (C) an alternative annual usage limit demonstrated through a facility-wide Health Risk Assessment (HRA) approved by the South Coast AQMD. For this last option, the HRA must be prepared:

- In accordance with Rule 1401– New Source Review of Toxic Air Contaminants (Rule 1401) and the most current version of the "South Coast AQMD Risk Assessment Procedures for Rules 1401, 1401.1, and 212;" and
- Must use the toxic air contaminants according to Rule 1402 – Control of Toxic Air Contaminants from Existing Sources (Rule 1402) and the most current version of the "Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments" which references the consolidated OEHHA/ARB table[2] of approved health values in effect at the time the permit application is deemed complete.

[2] *https://ww2.arb.ca.gov/sites/default/files/classic/toxics/healthval/contable09252025.pdf*

The HRA must account for all facility emissions using potential to emit for all permitted and unpermitted equipment. Facilities electing this option must submit a complete permit application and supporting HRA for South Coast AQMD review and approval.

Upon issuance of the Permit to Operate, all Level II material usage must be routed through the approved Air Pollution Control System, and facilities must operate in compliance with the permitted usage limits within 12 months of the Permit to Construct issuance, unless an extension is approved by the Executive Officer. Continued compliance with maintenance and recordkeeping requirements pursuant to paragraph (g)(4) is also required.

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

Paragraph (e)(3) establishes a compliance deadline for facilities electing to install an air pollution control device under paragraphs (e)(2) or (e)(4). Facilities that have not obtained a Permit to Operate for the approved control system within four years of submitting a complete permit application will no longer be permitted to use Level II materials. This provision ensures timely implementation of control measures and prevents indefinite reliance on pending. Facilities that do not meet this deadline may submit a new permit application in accordance with applicable rule requirements prior to the use of Level II materials.

Paragraph (e)(4) – Future Effective Timeline for Air Pollution Control Devices for Level II Materials

Paragraph (e)(4) provides an additional compliance pathway for facilities that elect to install an air pollution control device after the initial six-month permit application window. This provision allows facilities to transition to the control-based option at a later date, provided that no Level II materials are used until a complete permit application is submitted and approved. Paragraph (e)(4) mirrors the requirements of paragraph (e)(2), including control efficiency, capture, and usage-limit provisions, and differs only in the timing of when the permit application must be submitted.

Paragraph (e)(5) – Low-Use Provision for Level II Materials

Paragraph (e)(5) establishes a low-use compliance option for facilities that use very limited quantities of Level II materials. This provision allows facilities to continue using Level II materials containing pCBtF or t-BAc under one of two pathways: (1) limiting total facility usage to no more than 1.25 gallons per year and maintaining records pursuant to paragraph (g)(5), or (2) obtaining South Coast AQMD permit conditions that cap annual usage based on the receptor-based limits specified in Table A-2 – Annual Usage Limits for Facilities without an air pollution control system. Facilities electing pathway must submit a complete permit application within six months of rule adoption (or prior to the use of any Level II materials after that date) and must operate in full compliance with the permitted usage limits upon issuance of the Permit to Operate. This option provides flexibility for small-volume users and facilities conducting infrequent specialty work.

Paragraph (e)(6) – Low-Use Provision for Level II Materials

Paragraph (e)(6) establishes a mechanism to address a facility that exceeds the low-use limits in paragraph (e)(5). If a facility is discovered to be exceeded the low-use levels, they will have to cease using the Level II materials or install air pollution control devices pursuant to (e)(4).

Prohibition of Possession, Specification, Sale or Use [Subdivision (f)]

This subdivision contains the provisions for any person or facility that applies, possesses, solicits the use or application of, supplies, sells, offers for sale, markets, blends, packages, repackages or distributes aerospace materials for use within the South Coast AQMD for Level I and Level II materials.

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

Paragraph (f)(1) prohibits the manufacture, sale, distribution, possession, and use of Level I materials containing more than 0.01 percent by weight of pCBtF or t-BAc that were manufactured after the applicable prohibition dates specified in Table 4 – Level I Materials pCBtF and t-BAc Prohibition Schedule in PAR 1124. This prohibition applies to all Level I aerospace material categories listed in Table 1 and Table 2.

The provision ensures that all Level I materials supplied or used within the South Coast AQMD transition to non-toxic formulations by the specified effective dates, eliminating pCBtF and t-BAc from product formulations where viable alternatives exist.

Paragraph (f)(2) – Level I Material Sell-Through and Use-Through

Paragraph (f)(2) provides sell-through and use-through allowances for Level I materials containing more than 0.01 percent by weight of pCBtF or t-BAc that were manufactured prior to the applicable prohibition dates listed in Table 4 – Level I Materials pCBtF and t-BAc Prohibition Schedule.

This provision allows such materials to be sold, supplied, or offered for sale until the corresponding sell-through date, and used until the applicable use-through date specified in Table 4. These allowances are intended to prevent stranded inventory and facilitate the transition to compliant materials. The prohibition, sell-through, and use-through schedule are shown in the table below.

Table 3-3: Level I Materials pCBtF and t-BAc Prohibition Schedule

Categories and their Applicable Subcategories	Final Manufacture Date	Sell-Through Date	Use-Through Date
Adhesives	[*Six Months from Date of Rule Adoption*]	[*12 Months from Date of Rule Adoption*]	[*24 Months from Date of Rule Adoption*]
Sealants			
Lubricant			
Cleaning Solvents			
Strippers			
Adhesion Promoters	*[12 Month from Date of Rule Adoption]*	*[24 Months from Date of Rule Adoption]*	*[36 Months from Date of Rule Adoption]*

Maskants	[*24 Months from Date of Rule Adoption*]	[*36 Months from Date of Rule Adoption*]	[*48 Months from Date of Rule Adoption*]

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

Paragraph (f)(3) establishes a prohibition on the possession and use of Level II materials containing more than 0.01 percent by weight of pCBtF or t-BAc that were manufactured after [24 months after the date of rule adoption], unless an alternative compliance option pursuant to subdivision (e) has been approved by the Executive Officer. This provision applies to all Level II materials and ensures that facilities either transition to compliant, reformulated products or operate under an approved alternative compliance pathway.

Paragraph (f)(4) – Level II Material Use-Through

Paragraph (f)(4) provides a limited use-through allowance for Level II materials containing more than 0.01 percent by weight of pCBtF or t-BAc that were manufactured prior to [24 months after the date of rule adoption]. Such materials may continue to be possessed or applied until [36 months after the date of rule adoption]. This provision allows facilities additional time to use existing inventory and transition to compliant products or approved alternative compliance options.

Administrative and Recordkeeping Requirements [Subdivision (g)]

Subdivision (g) outlines the administrative requirements including maintaining records for VOC emissions pursuant to Rule 109 – Recordkeeping for Volatile Organic Compound Emissions, emission control systems, and for any person who supplies, sells, offers for sale, markets, blends, packages, repackages or distributes any aerospace materials for use within South Coast AQMD that do not meet the applicable VOC limits but are intended for use at a facility that utilizes an approved emission control system; a facility that operates in accordance with an approved alternative emissions control plan; or are exempt under subdivision (k).

This subdivision was restructured to streamline and better organize the rule provisions. Most of the changes are minor, defined terms were capitalized and the existing Rule 1124 reporting requirements subdivision (j) was moved and updated to paragraphs (g)(1) and (g)(2).

Source Testing [Subdivision (h)]

Subdivision (h) specifies the source testing requirements for owners or operators that elect to operate an air pollution control system pursuant to paragraph (e)(2) or (e)(4). These provisions establish the schedule, procedural requirements, and recordkeeping standards necessary to verify and maintain compliance with the applicable control efficiency requirements for systems controlling emissions of pCBtF and t-BAc.

Paragraph (h)(1) – Source Test Protocol

Paragraph (h)(1) establishes the procedural requirements for submitting and conducting source test protocols for facilities operating an air pollution control device pursuant to paragraph (h)(1). Owners or operators must submit a source test protocol to the Executive Officer for approval within 90 days of receiving a Permit to Construct and must provide written notice at least two weeks before conducting the scheduled test. All source tests must be performed in accordance with the approved protocol. Once the initial protocol has been approved, facilities are not required to

resubmit a revised protocol unless the air pollution control device has been modified in a way that necessitates a new permit application. This provision ensures consistency in testing procedures.

Paragraph (h)(3) – Source Test Schedule

Paragraph (h)(3) establishes the required schedule for conducting source tests for any facility operating an air pollution control device pursuant to paragraphs (e)(2) or (e)(4). Facilities must complete an initial source test within 180 days of beginning operation of the control device or within 30 days of receiving an approved source test protocol, whichever occurs later. Subsequent testing is required every 36 months to verify ongoing compliance with the applicable control efficiency requirements.

Test Methods [Subdivision (i)]

This provision specifies the approved test methods for determining the VOC content of aerospace materials, to quantify amounts of exempt perfluorocarbon compounds in aerospace materials, acid content of pretreatment wash primers, efficiency of emission control systems, transfer efficiency, VOC composite partial pressure, and establishes criteria for multiple test methods, and equivalent test methods.

This provision combines former subdivisions (i) and (j) and staff removed outdated test methods that are no longer used by the South Coast AQMD laboratory and corrected a separate referenced test method name. The structure and numbering have been amended and streamlined.

Rule 442 Applicability [Subdivision (j)]

This provision clarifies that any aerospace materials that is exempt from all or a portion of the VOC limits of subdivision (d), shall comply with Rule 442 – Usage of Solvents. This subdivision was not changed other than to capitalize defined terms and moved from subdivision (g) for consistency with other South Coast AQMD rules.

Exemptions [Subdivision (k)]

This provision provides conditional exemptions to various subdivisions of this rule. Staff is proposing the removal of paragraph (l)(16) as it no longer applicable, but no more removals are proposed. Staff updated the capitalize defined terms and updated rule's references

Former subdivision (k) – Air Toxics has been removed because it is outdated and no longer serves a functional regulatory purpose. The provision was originally added to address concerns identified during the 2001 amendment; however, it lacks sufficient specificity to be enforceable under current rule structure. Consistent with its removal, the associated definitions that applied exclusively to this subdivision have also been removed.

Paragraph (k)(10) – Laboratory Exemption

Paragraph (k)(10) specifies that the provisions of subdivisions (d) and (f) do not apply to laboratories that apply materials to test specimens for purposes of research, development, quality control, or testing related to production operations. This exemption was updated to address industry concerns related to ongoing research activities.

Paragraph (k)(16)

Paragraph (k)(16) clarifies facilities that are temporarily storing aerospace materials solely for off-site shipment, with no intent to use the materials on-site, are not subject to the paragraphs (f)(1),

(f)(3), and (f)(4). The materials need to be marked that they are to be used outside South Coast AQMD jurisdiction.

Attachment A – Usage Limits for Level II Materials

Attachment A provides the receptor-based annual usage limits that apply to facilities electing alternative compliance pathways under subdivision (e). These limits were developed to ensure that continued use of Level II materials remains within health-protective and enforceable thresholds based on proximity to the nearest sensitive receptor.

Table A-1 – Annual Usage Limits for Facilities with an Approved Air Pollution Control Device, establishes the allowable annual usage for facilities operating an approved air pollution control device pursuant to paragraph (e)(2) and (e)(4). Facilities with an operational system meeting the required control and capture efficiencies may use Level II materials up to the specified gallon-per-year limits, which increase with greater distance from the nearest sensitive receptor.

Table A-2 – Annual Usage Limits for Facilities without an Air Pollution Control Device, establishes the allowable annual usage for facilities electing the low-use option without an air pollution control device pursuant to paragraph (e)(5). These limits apply only to facilities operating under approved permit conditions or those limiting use to 1.25 gallons per year. The allowable usage increases with distance from the nearest sensitive receptor, providing additional flexibility for facilities located farther from sensitive receptors.

CHAPTER 4 : IMPACT ASSESSMENT

EMISSIONS IMPACT

COST-EFFECTIVENESS AND INCREMENTAL COST-EFFECTIVENESS

SOCIOECONOMIC IMPACT ASSESSMENT

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

COMPARATIVE ANALYSIS

Emission Impacts

PAR 1124 establishes a prohibition and compliance schedule for the phase out of pCBtF and t-BAc without changing current VOC limits for most aerospace material categories, except for adhesion promoters; therefore, no decrease in VOC emissions are expected. Manufacturer survey data indicated that adhesion promoters are heavily reliant on pCBtF or t-BAc to meet the current VOC limit of 250 g/L. The adhesion promoter category, on average, contains up to 70 percent pCBtF or t-BAc and some products can contain up to 96 percent by volume, so meeting the 250 g/L with the use of exempt compounds is not likely feasible. Staff is proposed to increase the VOC limit for adhesion promoters to 750 g/L to facilitate the elimination of pCBtF.

To estimate the potential VOC emission increase for the adhesion promoter category, staff used VOC content and sales data reported in the South Coast AQMD Coating Manufacturer Survey. From the survey, three manufacturers reported sales volume by product category into the South Coast AQMD along with the VOC content of each coating product sold. In addition to the survey, the aerospace industry also submitted a list of coatings products used at their facilities which showed that the three aerospace coating manufacturers that responded to South Coast AQMD Coating Manufacturer Survey account for a majority of the aerospace coatings sold within the South Coast AQMD. The annual volume of adhesion promoters reported sold is low and cannot be disclosed due to the limited number of manufacturers reporting sales per year is low. For the emissions calculations, the VOC of material or actual VOC was used; the VOC actual was estimated based on the survey data provided by the manufacturers. PAR 1124 has an estimated VOC emissions increase of approximately 0.004 tons per day.

PAR 1124 affects approximately 393 facilities; 374 non-Title V facilities and 19 Title V facilities. In order to estimate VOC emissions, staff relied on South Coast AQMD Coating Manufacturer Survey and facility reported usage to estimate VOC emissions. Staff used the sales weighted average for each category from the survey, reported sales volume from the survey, and facility usage volumes (where available) to estimate VOC emissions. The table below shows the estimated VOC emissions for each reported aerospace coating category used in South Coast AQMD.

Table 4-1: Estimated VOC Emissions by Category Reported in Manufacturer Survey

Category	Emissions (tpd)
Topcoat	0.05
Fuel Tank Coating	0.0006
High-Temperature Coating	0.0021
General Coating	0.10
Adhesion Promoter	0.0004
Structural Adhesive (Non-Autoclavable)	0.0005
Structural Adhesive (Autoclavable)	0.0005
Non-Structural	0.0012
Extrudable, Rollable, or Brushable	0.0005
Total	0.16
Adjusted VOC Emissions (tpd)	**0.2**

The baseline VOC emissions from PAR 1124 are estimated to be approximately 0.16 tons per day, however, not all manufacturers submitted survey responses. Based on staff's evaluation, facility site visits, and discussion with aerospace coating manufacturers, staff adjusted the emissions by 25 percent to capture potentially unreported volumes at used at smaller facilities engaging in aerospace coating operations. The adjusted baseline VOC emissions is approximately 0.2 tons per day. The maskants category was not included in the table because it was not reported in the submitted manufacturer survey. A maskant manufacturer reached out to staff and coordinate several site visits to local aerospace facilities to better understand maskant usage. Staff's evaluation of the maskants primarily used in South Coast AQMD indicated that maskants used contain up to 95 percent pCBtF by volume and contain a VOC content of zero grams per liter. Therefore, the VOC emissions contribution from the maskants category is negligible. Similarly, for other coating categories not reported in the survey or by aerospace facilities, staff assumed the usage and VOC emissions to be zero. Staff's evaluation of the 19 Title V facilities indicated an average annual usage per facility is approximately 150 gallons which equates to 2,850 gallons for all Title V facilities; the topcoats and general primers category accounting for the largest usage. Further evaluation showed that the average actual VOC content for the top coats and general primers category are approximately 379 g/L. The total VOC emissions from all 19 Title V facilities is approximately 0.012 tons per day

Control Technology Cost and Overall Emissions Impacts

Compliance with PAR 1124 is primarily expected to be met through manufacturers reformulating regulated products by substituting certain chemicals with other chemicals that contain less VOCs, less or no toxics, and no stratospheric ozone-depleting compounds. The manufacturers will have flexibility to use any compliant alternative reformulation to meet the VOC limits in PAR 1124. For certain categories, there are existing or alternative replacement products that meet the current or proposed VOC content limits; therefore, product reformulation is technically feasible. Some end-users, primarily large facilities, may comply with the rule using alternative options such as control devices (e.g., carbon adsorbers emission or thermal oxidizer). The latter options may have the highest cost for most facilities, so it is anticipated that most smaller facilities will comply using

alternative products that do not contain pCBtF or t-BAc in the future or obtain an annual usage limit specified in the rule.

Cost of Control Device

The primary focus of PAR 1124 is to control and reduce emissions of pCBtF and t-BAc which are considered toxic compounds and not criteria pollutants or their precursors, thus a cost-effectiveness analysis is not required. However, the 19 Title V facilities impacted by PAR 1124 are generally classified as large facilities and typically perform coating operations in a total enclosure such as a spray booth. Staff anticipates that these facilities will be primarily the ones installing controls and thus will have cost impacts associated with reducing pCBtF and t-BAc emissions. Of the two potential control device technologies staff evaluated, a carbon adsorption system is perhaps the most likely technology to be chosen by facilities due to the lower annual operating cost and high removal efficiency. Carbon adsorption systems remove all forms VOC emissions and not just specifically pCBtF and t-BAc. Carbon adsorption systems are typically customed designed based a facility's site-specific conditions. Staff estimates that a typical spray booth or total enclosure would have an exhaust flow rate of 20,000 CFM and require 45,000 pounds of activated carbon to achieve a 95 percent control efficiency. In addition to the bed of activated carbon, new ducting, flow meters, upgraded blower, and monitoring equipment will also be required. Based on estimates form control device manufacturer of actual real-world installations, the total installed cost for a typical carbon adsorption system is estimated to be approximately $80,000 to $150,000 depending on overall requirements. Larger carbon adsorption systems that require a new total enclosure can range approximately from $250,000 to $1 million. In addition, facilities will have to consider carbon replacement cost where the spent carbon must be treated as hazardous waste. Cost for carbon replacements can be as high as $200,000 per changeout. Based discussions with control technology manufacturers, staff assumed electricity and recurring source testing cost to be approximately five percent of the catalyst changeout cost which equates to approximately $10,000 annually.

Product Reformulation Cost

Certain aerospace material categories such as those categorized as maskants, primers, sealants, and topcoats will require coating manufactures to reformulate existing products if facilities do not elect to install pollution control. The reformulation process will require resource allocation towards research and development. Personnel time will need to be shifted to reformulation efforts, which will incur some associated costs. In addition, research time also includes specification and product requirements for the material and application. Reformulation also requires the necessary raw materials such as solvents, resins, and additives to support the development efforts. Based on manufacturer feedback, the cost for specialty solvents, such as pCBtF and t-BAc, exceed conventional solvent cost; therefore, the manufacturers may recover some cost based on the raw materials.

Overall Emissions Impact

The anticipated emissions increase from the increasing the VOC content limit for adhesion promoters to 750 g/L is approximately 0.004 tons per day. The baseline emissions from the 19 Title V facilities is approximately 0.0122 tons per day, but assuming all 19 Title V facilities install a carbon adsorption system, which can achieve 95% percent reduction, the VOC emission reduction will be approximately 0.012 tons per day from all 19 Title V facilities. Thus, the estimated overall net VOC emission impact in PAR 1124 will result in a VOC reduction of 0.008

tons per day. It is important to note that each Title V facility is unique in its operation, such as the number of existing spray booths, type of aerospace part being coated, and type of aerospace manufacturing contract, so the actual number of Title V facilities electing to install carbon adsorption control system will vary.

Socioeconomic Impact Assessment

A socioeconomic impact assessment will be conducted and released for public review and comment at least 30 days prior to the South Coast AQMD Governing Board Hearing on PAR 1124, which is scheduled for March 6, 2026 (subject to change).

California Environmental Quality Act (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) and South Coast AQMD's certified regulatory program (Public Resources Code Section 21080.5, CEQA Guidelines Section 15251(l) and South Coast AQMD Rule 110), the South Coast AQMD, as lead agency, is reviewing the proposed project (PAR 1124) to determine if it will result in any potential adverse environmental impacts. Appropriate CEQA documentation will be prepared based on the analysis.

Draft Findings Under The Health and Safety Code

Health and Safety Code Section 40727 requires that prior to adopting, amending, or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, nonduplication, and reference, as defined in that section, based on relevant information presented at the hearing, this written analysis, and the rulemaking record. The draft findings are as follows:

Necessity – A need exists based on the Stationary Source Committee's direction to address the toxic risk of currently exempt compounds pCBtF and t-BAc in existing operations.

Authority - The South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702 and 41508.

Clarity - Proposed Amended Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, is written and displayed so that the meaning can be easily understood by persons directly affected by it.

Consistency - Proposed Amended Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, or federal and state regulations.

Nonduplication - Proposed Amended Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, does not impose the same requirement as any existing state or federal regulation, and the proposed amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference - In amending this rule, the South Coast AQMD Governing Board references the following statutes which the South Coast AQMD hereby implements, interprets, or makes specific: Health and Safety Code Sections 40001, 40440, and 40702.

Comparative Analysis

Under Health and Safety Code Section 40727.2, the South Coast AQMD is required to perform a comparative analysis when adopting, amending, or repealing a rule or regulation. The comparative analysis is relative to existing federal requirements, existing or proposed South Coast AQMD rules and air pollution control requirements and guidelines which are applicable to VOC regulations for aerospace coatings. A comparative analysis will be prepared and released at least 30 days prior to the South Coast AQMD Governing Board Hearing on PAR 1124, which is anticipated to be heard on March 6, 2026.