I. SUMMARY OF PROPOSED RULE

Eastern Kern Air Pollution Control District (EKAPCD) proposes a new rule in the source category of Aerospace Assembly and Coating Operations. The rule is intended to regulate the aerospace coating and adhesive industry in the areas of manufacturing, assembling, coating, masking, bonding, paint stripping, surface cleaning and coating equipping cleaning. The rule will consists of three major parts, coating and adhesive VOC emission limitations, equipment requirements and provisions for administrative requirements for recording and measuring emissions.

II. BACKGROUND

The Eastern Kern Air Pollution Control District (EKAPCD or District) and other air pollution control districts are required by the federal Clean Air Act to adopt reasonably available control technology (RACT) for all stationary sources of Ozone. The proposal for RACT must be included in a submittal to the District's 8-hour Ozone State Implementation Plan (8-Hour SIP). RACT is the lowest emission limitation that a source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. The US Environmental Protection Agency developed a list of potential RACT known as Control Technique Guidelines or CTGs and Alternative Control Technology or ACT. California was also provided with further guidance from US EPA Region IX in a letter dated April 4, 2006 from Andrew Steckel, the Chief of Region IX's Rulemaking office to Kurt Karperos, the Chief of the Air Quality and Transportation Branch of the Air Resources Board.

EKAPCD's staff has reviewed the District's rules, forecasted and current emission inventories and surrounding District rules and have identified a RACT deficiency in the source category of aerospace coatings. Other districts located near EKAPCD have already adopted an aerospace coatings rule, such as the San Joaquin Valley Air Pollution Control District (SJVAPCD), Antelope Valley Air Quality Management District (AVAQMD) and South Coast Air Quality Management District (SCAQMD). Mojave Desert Air Quality Management District (MDAQMD) will be implementing an aerospace rule as part of their RACT SIP submittal. Two of the District's major stationary sources, Edwards Air Force Base and the Naval Air Weapons Station, are military bases, which are a source of aerospace coating emissions. Several aerospace companies using aerospace coatings are also located in the District's jurisdiction due to the proximity of the military bases. New stationary sources of aerospace coatings are also expected in the future due to the growing industry at the Mojave Spaceport, specifically in the area of aerospace research and development.

EKAPCD currently does not have a rule regulating aerospace coating operations, except for an adoption by reference cited in District Rule 423, National Emission Standards for Hazardous Air Pollutants for Aerospace Manufacturing and Rework Operations (Aerospace NESHAP). Currently, new and modified stationary sources are required to comply with Rule 210.1, New Source Review (NSR) and are therefore subject to Best Available Control Technology (BACT). The District Aerospace BACT requirements were written as a policy and not a rule. A policy cannot be submitted to the SIP. Therefore, our aerospace BACT policy is not federally enforceable, or formally applicable to the major stationary sources. EKAPCD also cannot get

RACT-credit for a District BACT policy. Since EKAPCD does not have a SIP-approved rule for aerospace, the only applicable and enforceable rule becomes our metal parts and products rule, which exempts aerospace.

De-painting operations and particulate matter emission controls were also included the Aerospace NESHAP. Rule 432 will deal primarily with the control of volatile organic compounds (VOC) and not particulate matter.

III. DISCUSSION

Several criteria were used to determine a model aerospace coating rule. Comparison was based on the state's Identification of Performance Standards for Existing Stationary Sources for aerospace coatings (Aerospace IPS), which compares several Districts' requirements and the federal NESHAP standards. San Joaquin Valley Air Pollution Control District Rule 4605 (SJVAPCD 4605) was found to have an appropriate framework for EKAPCD Rule 432. Some of the other rules presented in the Aerospace IPS have not been modified in some time and were less stringent that EKAPCD's current Aerospace BACT. Other rules were more stringent and EKAPCD is not required to adopt the most stringent emission-reducing coatings and technologies available for the RACT SIP.

Existing definitions in SJVAPCD 4605 will be used in Rule 432 and some definitions were added for clarification: aerospace vehicle, aircraft, electrostatic discharge protection, exempt compounds, stenciling and touch-up operations. Electrostatic discharge protection was added to definition section of the rule since the coating is referenced in emission limit table but not defined. Aerospace vehicle and aircraft definitions were added to rule based on previous discussions with the Air Force and requirements of further clarification of substrates. A definition of "exempted compounds" was also added to the rule since the item was omitted from SJVAPCD Rule 4605. Definition of "exempted compounds" references District Rule 102 and provides for an exemption of compounds not included in District Rules but formally approved by the US Environmental Protection Agency. Stenciling and touch-up operation definitions were also added to list of definitions since operations are exempted from requirements of rule.

The current Aerospace BACT provides for exemption for two types of scenarios, limited usage and touchup. An exemption from SJVAPCD Rule 4605 was changed from utilization of four gallons (equivalent to 1,460 gallons per year) of VOC-containing compounds per day to fifty gallons per year, which is consistent with the District's Aerospace BACT Policy. Other districts exempt facilities from their aerospace rule requirements if usage is less than three gallons per day (equivalent to 1,095 gallons per year). In order to avoid the lessening of stringency of the current informal policy, an exemption level of fifty gallons per year will be retained as formal District policy. Exemption will also be allowed for facilities emitting less than 15 pounds per day of VOC or lesser amount prescribed by EKAPCD Rule 410.4, Surface Coating of Metal Parts and Products. An exemption of 15 pounds per day will provide for consistency with current EKAPCD Rule 410.4. Touch-up operations will continue to be allowed an unlimited exemption. Stenciling operations are equivalent to touch-up operations in that application of coatings is limited to a relatively small surface area so an unlimited exemption is also allowed for stenciling operations.

An exemption for research and development referenced in SJVAPCD Rule 4605 was not used for EKAPCD Rule 432. Enforcement of the exemption would be difficult to apply to current sources

that are subject to District requirements and possibly decrease the amount of restrictions on certain facilities.

Exemption for aerosol coating usage was changed from an unlimited exemption to utilization of no greater than 2560 ounces (20 gallons) per stationary source as documented by purchase records. A threshold of 20 gallons per year is also allowed for specialty coatings that exceed the VOC emission limitations listed in Table 1. Any operation exceeding the usage exemption will be required to comply with applicable rule requirements and keep more detailed records of coating information. Any operation not exceeding the usage exemption will be required to document usage by means of purchase records for aerosol products or request approval and notify District of specialty coatings. Usage of specialty coating is typically relatively low so the impact to air quality from the exemption and the impact to the aerospace industry is expected to be minor.

All VOC limitations listed in SJVAPCD Rule 4605 will be used in Rule 432. Most of the emission limits were the same as the current Aerospace BACT Policy with the exception of clear topcoat, dry lubricative materials, flight test coatings, and fastener manufacturing solid film lubricants. The product category of adhesive bonding primers is substantially different from the Aerospace BACT policy since that the rule distinguishes more types of adhesion bonding primers and the category does not use any specific temperature as a distinction between types. Table 1 summarized the previous and proposed emission limitations prescribed by Rule Aerospace BACT and proposed Rule 432, respectively.

Table 1

Limits, Grams of VOC per Liter of Coating, Less Water and Exempt Compounds

Product (VOC Containing Material)	**grams/liter**	
	Aerospace BACT	**Rule 432**
Adhesion Promoter	850	850
Adhesives		
Non-structural	250	250
Structural		
Autoclavable	50	50
Non-autoclavable	850	850
Adhesion Bonding Primers		
Above 250°F Curing Temperature	250	Not Listed
250°F or Less Curing Temperature	250	Not Listed
New Commercial Aircraft	Not Listed	250
All Military Aircraft	Not Listed	805
Remanufactured Commercial Aircraft Parts	Not Listed	805
Sonic and Acoustic Applications	Not Listed	805
Long Term	Not Listed	250
Short Term	Not Listed	250
Antichafe Coatings	600	600
Barrier Topcoat	420	420
Clear Topcoat	750	520
Conformal Coating	750	750
Dry Lubricative Materials		
Fastener Manufacturing	250	120

Table 1		
Limits, Grams of VOC per Liter of Coating, Less Water and Exempt Compounds		
Product (VOC Containing Material)	**grams/liter**	
	Aerospace BACT	**Rule 432**
Nonfastener Manufacturing	880	675
Electric/Radiation Effect Coatings	800	800
Fastener Sealants	675	675
Fire Resistant Coatings		
Civilian (Interior)	650	650
Flight Test Coatings Used on		
Missiles or Single-Use Target Craft	420	420
All others	840	600
Fuel Tank Coatings		
General	420	420
Epoxy	Not Listed	420
Fuel Tank Adhesives	Not Listed	620
High Temperature Coating	850	850
Impact Resistant Coating	420	420
Maskants - Chemical Milling	250	250
Optical Anti-Reflective Coating	700	700
Pretreatment Coatings	780	780
Primers		
General	Not Listed	350
Commercial Exterior Aerodynamic Structure	Not Listed	350
Rain Erosion Resistant Coating	800	800
Scale Inhibitor	880	880
Sealant	600	600
Solid Film Lubricants		
Fastener Manufacturing	250	250
Fastener Installation	880	880
Nonfastener Manufacturing	880	880
Space Vehicle Coatings		
Electrostatic Discharge Protection	800	800
Other Space Vehicle Coatings	1000	1000
Adhesives	800	800
Temporary Protective Coatings	250	250
Topcoats	420	420
Unicoats (Self Priming Topcoats)	420	420
Wing Coating	750	750
Wire Coatings		
Electronic	725	420
Anti-Wicking	420	420
Pre-Bonding Etching	420	420
Phosphate Ester Resistant Ink	925	925

Cleaning requirements were also retained in rule, including application equipment requirements and VOC emission limits for cleaning solvents. The section from the Aerospace BACT policy covering allowed cleaning operations techniques, i.e. non-atomized cleaning operations, was added to rule for consistency.

IV. RULE DEVELOPMENT PROCESS

Notice of draft rule will be published in a local newspaper. Copies of this draft staff report will be available for review upon request and a copy is available on EKAPCD's website. Written comments will be received by District for a total of thirty days after the notice is published. A public workshop will also be held to discuss the draft rule. All comments will be considered and addressed in final staff report. Rule will not be adopted until final approval of the District Board of Directors. Affected facilities will be required to comply with all new requirements

V. ENVIRONMENTAL IMPACT ANALYSIS

The California Environmental Quality Act (CEQA) requires agencies to consider and disclose the environmental implications of decisions that may have a significant effect on the environment. Because the draft rule will not have a significant adverse impact on the environment and will provide a benefit to air quality, these amendments are categorically exempt from CEQA requirements pursuant to California Code of Regulations, Title 14, Article 19 Section 15308. Exemption consists of actions taken by regulatory agencies, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment where the regulatory process involves procedures for protection of the environment. Proposal of draft rule is for the purposes of addressing RACT for the 8-Hour SIP, as required by the federal Clean Air Act.

VI. RULE CONSISTENCY ANALYSIS

Pursuant to the California Health and Safety Code Section 40727.2 (g), a rule consistency analysis for aerospace coatings in tabular form was performed for the California Air Resources Board and was documented in the Identification of Performance Standards for Existing Stationary Sources for aerospace coatings (Aerospace IPS). Only the District rule summary table will be used for this staff report. The District has incorporated the summary table of the Aerospace IPS by reference. No other analysis is required to be performed.

APPENDIX A
Eastern Kern Air Pollution Control District

EKAPCD Draft Rule 432
Aerospace Assembly and Coating Operations
Adopted XXXXXXXX, 2010

EASTERN KERN AIR POLLUTION CONTROL DISTRICT
RULE 432 -- AEROSPACE ASSEMBLY AND COATING OPERATIONS
(Adopted XXXXXXXX)

I. Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from aerospace coatings and adhesives, from the organic solvent cleaning, and the storage and disposal of solvents and waste solvent materials associated with the use of aerospace coatings and adhesives and to provide the administrative requirements for recording and measuring the emissions.

II. Applicability

This rule shall apply to the assembling, coating, masking, bonding, paint stripping, surface cleaning, service, and maintenance of aerospace components, the cleanup of equipment, and the storage and disposal of solvents and waste solvent materials associated with these operations.

III. Definitions

A. Adhesion Promoter: a coating applied to a substrate in a monomolecular thickness to promote wetting and form a chemical bond with the subsequently applied material.
B. Adhesive: a substance that is used to bond one surface to another.
C. Adhesive Bonding Primer: a coating applied in a very thin film to aerospace adhesive bond detail components for corrosion inhibition and adhesion.
D. Aerosol Coating: a mixture of pigments, resins, and liquid and gaseous solvents and propellants packaged in a disposable container for hand-held application.
E. Aerospace Component: any raw material, partial or completed fabricated part, assembly of parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes.
F. Aerospace Material: any coating, primer, adhesive, sealant, maskant, lubricant, stripper or hand-wipe cleaning or clean-up solvent used during the manufacturing, assembly, refinishing, maintenance or service of an aerospace component.
G. Aerospace Vehicle: see Space Vehicle
H. Aircraft: any machine designed to travel throughout the air, without leaving the earth’s atmosphere, whether heavier or lighter than air, including airplanes, balloon, dirigibles, helicopters and missiles.
I. Antichafe Coating: a coating applied to areas of moving aerospace components which may rub during normal operation.
J. Anti-wicking Wire Coating: the outer coating of a wire which prevents fluid wicking into the insulation of the wire.
K. Barrier Coating: a coating applied in a thin film to fasteners to inhibit dissimilar metal corrosion and to prevent galling.
L. Brush Coating: manual application of coatings using brushes and rollers.
M. Chemical Milling: the removal of metal by chemical action of acids or alkalis.
N. Clear Topcoat: a clear or semi-transparent coating applied over a primer for purposes such as appearance, identification, or protection.

O. Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.
P. Commercial Exterior Aerodynamic Structure Primer: a primer utilized for the purpose of extended corrosion protection, which is only used on the exterior of passenger and cargo doors, supporting door structures, aerodynamic components, and structures of commercial aircraft which protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizer, vertical fins, wing-to-body fairings, antennae, landing gear and landing gear doors.
Q. 3.15 Conformal Coating: a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.
R. 3.16 Decorative Laminate Primer: an adhesive bonding primer which is applied to a substrate to enhance adhesion between the decorative laminate and the subsequently applied substrate, and is cured at a maximum temperature of 250°F.
S. Dip Coating: the process in which a substrate is immersed in a solution (or dispersion) containing the coating and then withdrawn.
T. Dry Lubricative Coating: a coating 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.
U. Electric-effect Coating: an electrically-conductive coating.
V. Electrodeposition: a dip coating application method where the paint solids are given an electrical charge which is then attracted to a substrate.
W. Electronic Wire Coating: the outer electrical insulation coating applied to tape insulation of a wire specifically formulated to smooth and fill edges.
X. Electrostatic Application: a sufficient charging or atomized paint droplets to cause deposition principally by electrostatic attraction. This application shall be operated at a minimum 60 KV power.
Y. Electrostatic Discharge Protection: coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy.
Z. Epoxy Based Fuel Tank Coating: a coating which contains epoxy resin that is applied to integral fuel tank components of aircraft to protect the fuel tank from corrosion and the by-products of bacterial growth.
AA. Epoxy-Phenolic Primer: a multipolymer adhesive bonding primer which is formulated with both epoxy resin and phenolic resin and used for metal to honeycomb core bonding with a 350°F cure adhesive system.
BB. Exempt compounds: As defined in Rule 102 or any other exempt compounds approved by the US EPA.
CC. Fastener Sealant: a sealant applied to a device used to join two or more parts together.
DD. Fire Resistant Coating - Civilian (interior): a cabin interior coating that passes Federal Aviation Administration standards using the Ohio State University Heat Release, Fire and Burn Tests.
EE. Flight Test Coating: a coating applied to an aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.
FF. Flow Coating: a coating application system where paint flows over the part and the excess coating drains back into a collection system.
GG. Fuel Tank Adhesive: an adhesive used to bond components continuously exposed to fuel and which must be compatible with and used with fuel tank coatings.

HH. Fuel Tank Coating: a coating applied to the interior of a fuel tank or areas of an aircraft that are continuously wetted by fuel to protect it from corrosion and/or bacterial growth.

II. Grams of VOC per Liter of Coating, Less Water and Exempt Compounds: the weight of VOC content per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material, less water and exempt compounds} = \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

where,
Ws = weight of volatile compounds (grams)
Ww = weight of water (grams)
Wec = weight of exempt compounds (grams)
Vm = volume of material (liters)
Vw = volume of water (liters)
Vec = volume of exempt compounds (liters)

JJ. Grams of VOC per Liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{Ws - Ww - Wec}{Vm}$$

where,
W_s = weight of volatile compounds (grams)
W_w = weight of water (grams)
W_{ec} = weight of exempt compounds (grams)
V_m = volume of material (liters)

KK. Hand Application Methods: the application of coatings, sealants, or adhesives, by nonmechanical hand-held equipment including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags and sponges.

LL. High Temperature Coating: a coating that must withstand temperatures of more than 350°F.

MM. High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure measured dynamically at the center of the air cap and at the air horns.

NN. Impact Resistant Coating: a flexible coating that protects aerospace components, such as aircraft landing gear, and landing gear compartments, and other surfaces subject to abrasive impacts from runway debris.

OO. Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

PP. Long Term Primer: an adhesive bonding primer used with a 350°F cure adhesive system for metal to honeycomb core bonding. The long term primer must provide shear values in excess of 2000 psi upon initial testing and upon 6000 hour testing. This definition shall expire on April 30, 2003.

QQ. Long Term Primer (Metal to Structural Core Bonding): an adhesive bonding primer that has met the aircraft manufacturers' required performance characteristics following 6000 hours testing, used for metal to structural core bonding, and with an adhesive that is specified to be cured at 350oF ± 10°F. This definition shall be effective on and after May 1, 2003.

RR. Maskant for Chemical Milling: a coating applied directly to an aerospace component to protect surface areas when chemical milling such component.

SS. Metal to Metal, Metal to Honeycomb Core Bonding Primer: an adhesive bonding primer used on commercial aircraft to bond a metal component to another metal component or a metal component to a honeycomb core with a 250°F cure adhesive system.

TT. Military Primer: an adhesive bonding primer cured at or below 450°F for bonding either an aluminum and/or titanium part for aircraft produced for the military or any spare part used for all aircraft produced for the military with a prototype in production prior to January 1, 1997.

UU. Nitrile Phenolic Primer: a multipolymer adhesive bonding primer formulated with nitrile rubber and phenolic resins used for metal to metal bonding in sonic and acoustic applications with a 350°F cure adhesive system.

VV. Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

WW. Non-Leaking Container: a container without liquid leak.

XX. Non-Structural Adhesive: an adhesive that bonds non-load carrying aircraft component in noncritical applications.

YY. Optical Anti-Reflective Coating: 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.

ZZ. Organic Solvent: the same as "Solvent."

AAA. Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

BBB. Phosphate Ester Resistant Wire Ink Coating: a coating that is used for surface identification or mark on aerospace wire or cable and which inhibits the corrosion caused by contact with phosphate ester type hydraulic fluids.

CCC. Pretreatment Coating: a coating which contains no more than 12 percent solids by weight, and at least one-half (0.5) percent acid, by weight, to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

DDD. Primer: a coating applied directly to an aerospace component for purposes of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings, adhesives, or sealants.

EEE. Radiation-Effect Coating: a coating which helps in the prevention of radar detection.

FFF. Rain Erosion Resistant Coating: a coating that protects leading edges, flaps, stabilizers, and engine inlet lips against erosion caused by rain during flight.

GGG. Remanufactured Aircraft Part: an aerospace component that is built as a spare part or replacement part subject to an existing commercial aircraft specification. This definition shall be effective on and after May 1, 2003.

HHH. Roll Coating: application of coatings from a paint trough to a flat surface by mechanical series of rollers.

III. Scale Inhibitor: a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of tenacious scale.

JJJ. Sealant: a viscous semisolid material that fills voids in order to seal out water, fuel, and other liquids and solids, and in some cases air movement, and is applied with a syringe, caulking gun, or spatula.

KKK. Short Term Primer (Metal to Structural Core Bonding): an adhesive bonding primer that has met the manufacturers' required performance characteristics following 1000 hours testing, used for metal to metal and metal to structural core bonding, and with an adhesive which is specified to be cured at a temperature of 350oF ± 10°F. This definition shall be effective on and after May 1, 2003.

LLL. Solid Film Lubricant: a very thin coating consisting of a binder system containing as its chief pigment material one (1) or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between closely-fitting surfaces.

MMM. Solvent: as defined in Rule 410 (Organic Solvents).

NNN. Sonic and Acoustic Applications: the use of aerospace materials on aerospace components that are subject to mechanical vibration and/or sound wave cavitation. This definition shall be effective on and after May 1, 2003.

OOO. Space Vehicle Coating: a coating applied to vehicles designed to travel beyond earth's atmosphere.

PPP. Stencil Operation: Ink or coating that is rolled, sprayed with an airbrush or touch-up gun, or brushed while using a template to add identifying letters and/or numbers to an aerospace component

QQQ. Stripper: a volatile liquid applied to remove a maskant for chemical processing, cured or dried paint, cured or dried paint residue or temporary protective coating.

RRR. Structural Adhesive - Autoclavable: an adhesive used to bond load-carrying aircraft components and is cured by heat and pressure in an autoclave.

SSS. Structural Adhesive - Nonautoclavable: an adhesive cured under ambient conditions and is used to bond load-carrying aircraft components or other critical functions, such as nonstructural bonding near engines.

TTT. Surface Cleaning: any method of cleaning outside of a degreaser, including but not limited to:

1.) Wipe cleaning.
2.) Equipment flushing.

UUU. Temporary Protective Coating: a coating applied to an aerospace component to protect it from mechanical and environmental damage during manufacturing or shipping.

VVV. Topcoat: a coating applied over a primer for purposes such as appearance, identification, or protection.

WWW. Touch-up: application of coating by brush, airbrush, detail HVLP spray equipment or hand-held, non-refillable aerosol cans to repair minor surface damage and imperfections after main coating process not exceeding nine square feet per unit per year.

XXX. Transfer Efficiency: the ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids used in the application process, expressed as a percentage.

YYY. Unicoat: a coating that is applied directly to an aerospace component for purposes of corrosion protection, environmental protection and functional fluid resistance that is not subsequently topcoated. A unicoat is used in lieu of the application of a primer and a topcoat.

ZZZ. Volatile Organic Compounds (VOCs): refer to Rule 102 (Definitions).

AAAA. Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

BBBB. Wing Coating: a coating that is corrosion resistant and is resilient enough to withstand the flexing of wings.

CCCC. Wire Prebonding Etchant: a nonadditive surface treatment process to provide bondability of aerospace wire coatings to the underlying insulation layer.

IV. Exemption:

A. The requirements of Section V shall not apply to aerospace assembly and component coating operations using not more than fifty (50) gallons of products containing VOCs per year. Solvent-containing materials used in operations subject to Rule 410.3, (Organic Solvent Degreasing Operations), shall not be included in this determination.

B. Except for the provisions of Section 6.0, Section 5.0 shall not apply to laboratories which apply coatings, solvents, and adhesives to test specimens for purpose of research, development, quality control, and testing for production-related operations. Any person claiming this exemption shall provide operational records, data and calculations, as determined by the APCO to be necessary, to substantiate this claim.

C. Requirements of this Rule shall not apply to application of coatings to automobiles, light duty trucks, marine vessels, cans, coils, or magnetic wire or to powder coatings.

D. Requirements of this Rule shall not apply to touch-up operations or stenciling coatings

E. Requirements of this Rule shall not apply to non-touch-up aerosol coating operations using less than 2560 ounces (20 gallons) or less in any calendar year per stationary source as documented by purchase records

F. The provisions of Section 5.1 of this rule shall not apply to:

1.) Coatings or aerosols with separate formulations that are used in volumes of less than one (1) gallon on any day or 20 gallons in any calendar year at an aerospace assembly and component coating stationary source, or

2.) Adhesives with separate formulations that are used in volumes of less than one half (0.5) gallon on any day or ten (10) gallons in any calendar year at an aerospace assembly and component coating stationary source.

3.) Any person seeking to claim the exemption in Section IV.F shall notify the APCO in writing that substitute complying coatings are not available.

G. The provisions of Section V.E shall not apply to the application of coatings that:

1.) Contain less than 20 grams of VOC per liter of coating less water and exempt compounds,

2.) Are dispensed from hand-held aerosol cans, or

H. For existing stationary sources, if an incineration device is added or modified for the sole purpose of complying with the requirements of this rule, such a device shall be exempt from the Best Available Control Technology and the Offset requirements of Rule 2201 (New and Modified Stationary Source Review Rule) provided that:

1.) The proposed project will not result in an increase in capacity utilization of the unit being controlled.

2.) The operator demonstrates to the satisfaction of the APCO that the proposed project is environmentally beneficial and will not cause or contribute to any violation of a national ambient air quality standard (NAAQS), prevention of significant deterioration (PSD) increment, or air quality related value (AQRV) in a class I area.

V. Requirements

A. Aerospace Coatings and Adhesives: After the applicable effective date indicated in Table 1, no person shall apply to any aerospace component any coating, aerosol or adhesive with a VOC content, less water and exempt compounds, as applied, in excess of the limits in Table 1.

Table 1

Limits, Grams of VOC per Liter of Coating, Less Water and Exempt Compounds

Product (VOC Containing Material)	grams/liter
Adhesion Promoter	850
Adhesives	
Non-structural	250
Structural	
Autoclavable	50
Non-autoclavable	850
Adhesion Bonding Primers	
New Commercial Aircraft	250
All Military Aircraft	805
Remanufactured Commercial Aircraft Parts	805
Sonic and Acoustic Applications	805
Long Term	250
Short Term	250
Antichafe Coatings	600
Barrier Topcoat	420
Clear Topcoat	520
Conformal Coating	750
Dry Lubricative Materials	
Fastener Manufacturing	120
Nonfastener Manufacturing	675
Electric/Radiation Effect Coatings	800
Fastener Sealants	675
Fire Resistant Coatings	
Civilian (Interior)	650
Flight Test Coatings Used on	
Missiles or Single-Use Target Craft	420
All others	600
Fuel Tank Coatings	
General	420
Epoxy	420
Fuel Tank Adhesives	620
High Temperature Coating	850
Impact Resistant Coating	420
Maskants - Chemical Milling	250
Optical Anti-Reflective Coating	700
Pretreatment Coatings	780
Primers	
General	350
Commercial Exterior Aerodynamic Structure	350

Rain Erosion Resistant Coating	800
Scale Inhibitor	880
Sealant	600
Solid Film Lubricants	
Fastener Manufacturing	250
Fastener Installation	880
Nonfastener Manufacturing	880
Space Vehicle Coatings	
Electrostatic Discharge Protection	800
Other Space Vehicle Coatings	1000
Adhesives	800
Temporary Protective Coatings	250
Topcoats	420
Unicoats (Self Priming Topcoats)	420
Wing Coating	750
Wire Coatings	
Electronic	420
Anti-Wicking	420
Pre-Bonding Etching	420
Phosphate Ester Resistant Ink	925

1.) Surface Cleaning: No person shall use a solvent for surface cleaning, cleanup, not exempt under Section 4.0 of this rule, excluding stripping coatings or cleaning coating application equipment, unless:
    1. the solvent contains less than 200 grams of VOC per liter (1.67 lb/gal) of material, as applied; or
    2. the VOC composite vapor pressure of the solvent is less than or equal to 45 mm Hg (0.87 psia) at a temperature of 68°F.

2.) Cleaning operations using VOC containing material shall utilize one or more of the following:
    1. Wipe cleaning;
    2. Spray bottles or containers with a maximum capacity of 16 fluid ounces from which solvents are applied without a propellant-induced force;
    3. Cleaning equipment in a solvent container closed during cleaning operations, except when depositing and removing objects to be cleaned, and closed during non-operation except during maintenance and repair of the cleaning equipment itself;
    4. Remote reservoir cold cleaner operated in conformance with Rule 410.3;
    5. Enclosed system totally enclosing spray guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures;
    6. Non-atomized solvent flow method collecting cleaning solvent in a container or a collection system closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or
    7. Solvent flushing method discharging cleaning solvent into a container closed except for solvent collection openings, and, if necessary, openings to avoid an excessive pressure build-up inside

the container. Discharged solvent from such equipment shall be collected into containers without atomizing into the open air. Solvent may be flushed through the system by air or hydraulic pressure, or by pumping.

3.) Coating Application Equipment Cleaning:
Effective January 1, 1992, no person shall use materials containing VOC for the cleaning of equipment used in coating operations unless an enclosed system or enclosed gun washer is used according to the manufacturer's recommendations and is closed when not in use. Section 5.2.2 shall remain in effect through November 14, 2002.

4.) Coating Application Equipment Cleaning:
Effective on and after November 15, 2002, an owner or operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

C. Coating Strippers: Effective January 1, 1992, no person shall use or specify for use within the District a coating stripper unless it contains less than 300 grams of VOC per liter (2.5 lb/gal), as applied, or unless it has a VOC composite vapor pressure of 9.5 mm Hg (0.18 psia) or less at 68°F.

D. Cleaning of polyester resin application equipment:
   1.) Solvent shall have a VOC content of 200 grams or less of VOC per liter of material; or
   2.) Solvent shall have a VOC content of 1100 grams or less of VOC per liter of material and a VOC composite partial pressure of 1.0 mm Hg or less at 20°C (68°F);

E. Cleaning of coating and adhesives application equipment:
   1.) Solvent shall have a VOC content of 950 grams or less of VOC per liter of material; and
   2.) Solvent shall have a VOC composite partial pressure of 35 mm Hg or less at 20°C (68°F);

F. Storage and Disposal of VOC Containing Materials: An owner or operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, nonabsorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

G. Application Equipment Requirements: Effective January 1, 1992, no person shall apply coatings subject to the provisions of this rule unless one (1) of the following methods is used:
   1.) Electrostatic application;
   2.) Electrodeposition;
   3.) High-Volume, Low- Pressure (HVLP) spray,
      1. High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.
      2. For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the form of

manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

3. A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in section 3.0.

4.) Flow coating;
5.) Roll coating;
6.) Dip coating;
7.) Brush coating.

H. Add-on Control Equipment Option: As an alternative to meeting the requirements of Section 5.1 or Section 5.2, a person may install pollution control equipment provided that:
   1.) The control device shall reduce organic emissions from an emission collection system by at least 95 percent, by weight, and
   2.) The control system shall capture at least 90 percent, by weight, of all the organic emissions from the source to the control device, and
   3.) Authority to Construct for such equipment is received from the APCO, and
   4.) In no case shall compliance through the use of Section 5.6 result in VOC emissions in excess of the VOC emissions which would result from compliance with Section 5.1. The minimum required control efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by using the following equation:

$$CE = \left[1 - \left(\frac{VOC_{LWc}}{VOC_{LWn,\,Max}}\right) \times \frac{1 - \left(VOC_{LWn,\,Max}/D_{n,\,Max}\right)}{1 - \left(VOC_{LWc}/D_c\right)}\right] \times 100$$

Where:

CE = Control Efficiency, percent

VOC_{LWc} = VOC Limit, less water and exempt compounds

$VOC_{LWn,Max}$ = Maximum VOC content of noncompliant coating used in conjunction with a control device, less water and exempt compounds

$D_{n,Max}$ = Density of solvent, reducer, or thinner contained in the noncompliant coating, containing the maximum VOC content of the multi-component coating

Dc = Density of corresponding solvent, reducer, or thinner used in the compliant coating system.

I. Prohibition of Solicitation: After the effective date of this rule, no person shall solicit, specify or require any other person to use in the District any coating, solvent, spray equipment, or control equipment that does not meet the limits or requirements of this rule.

VI. Administrative Requirements

A. Recordkeeping
   1.) Any person subject to the requirements of this rule shall have coating manufacturer's specifications, either listed on the coating container, product data sheet, or on Material Safety Data Sheets (MSDS), available for review

and shall maintain daily records which show the following information as applicable:

VI.A.1.i. manufacturer name and type for each coating, solvent, thinner, reducer or stripper used,

VI.A.1.ii. mix ratio, by volume, of components added to the original material prior to application,

VI.A.1.iii. grams of VOC per liter of each coating, solvent, thinner, reducer or stripper, less water and exempt compounds, as applied,

VI.A.1.iv. grams of VOC per liter of each solvent, thinner, reducer, or stripper,

VI.A.1.v. volume and method of application of each coating, solvent, thinner, reducer or stripper applied, and

VI.A.1.vi. vapor pressure of solvents used.

2.) Owners shall maintain records to support that the following coatings have been specified for their intended application.

VI.A.2.i. adhesion promoter.

VI.A.2.ii. antichafe coating.

VI.A.2.iii. electric/radiation effect.

VI.A.2.iv. fuel tank adhesive.

VI.A.2.v. high temperature coating.

VI.A.2.vi. impact resistant coating.

VI.A.2.vii. optical anti-reflective coating.

VI.A.2.viii. rain erosion resistant wing coating.

3.) Any person subject to the requirements of this rule shall maintain purchase records identifying the type or name and the volume of material purchased for each VOC-containing material.

4.) Any person using an add-on emission control system as a means of complying with the provisions in Section 5.6 shall maintain daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

5.) Records shall be maintained for a minimum of two (2) years and shall be available for inspection by the APCO. A longer period of time for record retention may be specified by a permit condition.

6.) Effective on and after November 15, 2002, all records shall be retained for a period of five (5) years and shall be made available for inspection by the APCO upon request.

B. Test Methods

1.) Coating VOC content and solvent VOC content shall be determined using EPA Reference Method 24 or its constituent methods. The VOC content of coatings or solvents containing exempt compounds shall be determined by ARB Test Method 432.

2.) The solid content of pretreatment coatings shall be determined using EPA Reference Method 24. The acid content of pretreatment coatings shall be determined using ASTM Method D1613-91.

3.) The test method for determining the fire resistance of an interior coating shall be Federal Aviation Administration required Ohio State University Heat Release, Fire and Burn Tests.

4.) The VOC composite vapor pressure of a blended solvent shall be determined by quantifying the amount of each organic compound in the blend using gas chromatographic analysis (ASTM 2306-81) and by calculating the VOC composite vapor pressure of the solvent by summing the product of the vapor pressure of each pure component and its molar fraction. For the purpose of this calculation, the blend shall be assumed to be an ideal solution where Raoult's Law applies. The vapor pressure of each pure component shall be obtained from published reference manuals or handbooks.

5.) The VOC emissions from enclosed systems used to clean coating application equipment shall be determined by the manufacturer using the South Coast Air Quality Management District General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems.

6.) The control device efficiency of any air pollution control equipment shall be determined using EPA Methods 2, 2A, 2C, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring the total gaseous organic concentrations at the inlet and outlet of the control device. The calculation of control device efficiency shall be determined only during periods of continuous coating operations and shall be averaged over the duration of the coating operation not to exceed 24 hours.

7.) Capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995. An equivalent alternate test method for determination of capture efficiency may be used provided it has been approved in writing by the APCO, California Air Resources Board, and the U.S. Environmental Protection Agency.

APPENDIX B
San Joaquin Valley Air Pollution Control District

Rule 4605
Aerospace Assembly and Coating Operations
Amended December 20, 2001
US Environmental Protection Agency Direct and Final Approval
November 14, 2003

RULE 4605 -- AEROSPACE ASSEMBLY AND COMPONENT COATING OPERATIONS

(Adopted December 19, 1991; Amended May 21, 1992; Amended December 17, 1992; Amended March 31, 1993; Amended February 17, 1994; Amended December 19, 1996; Amended December 20, 2001)

1.0 Purpose

The purpose of this rule is to limit the emissions of volatile organic compounds (VOCs) from aerospace coatings and adhesives, from the organic solvent cleaning, and the storage and disposal of solvents and waste solvent materials associated with the use of aerospace coatings and adhesives and to provide the administrative requirements for recording and measuring the emissions.

2.0 Applicability

This rule shall apply to the manufacturing, assembling, coating, masking, bonding, paint stripping, surface cleaning, service, and maintenance of aerospace components, the cleanup of equipment, and the storage and disposal of solvents and waste solvent materials associated with these operations.

3.0 Definitions

3.1 Adhesion Promoter: a coating applied to a substrate in a monomolecular thickness to promote wetting and form a chemical bond with the subsequently applied material.

3.2 Adhesive: a substance that is used to bond one surface to another.

3.3 Adhesive Bonding Primer: a coating applied in a very thin film to aerospace adhesive bond detail components for corrosion inhibition and adhesion.

3.4 Aerosol Coating: a mixture of pigments, resins, and liquid and gaseous solvents and propellants packaged in a disposable container for hand-held application.

3.5 Aerospace Component: any raw material, partial or completed fabricated part, assembly of parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes.

3.6 Aerospace Material: any coating, primer, adhesive, sealant, maskant, lubricant, stripper or hand-wipe cleaning or clean-up solvent used during the manufacturing, assembly, refinishing, maintenance or service of an aerospace component. This definition shall be effective on and after May 1, 2003.

3.7 Antichafe Coating: a coating applied to areas of moving aerospace components which may rub during normal operation.

3.8 Anti-wicking Wire Coating: the outer coating of a wire which prevents fluid wicking into the insulation of the wire.

3.9 Barrier Coating: a coating applied in a thin film to fasteners to inhibit dissimilar metal corrosion and to prevent galling.

3.10 Brush Coating: manual application of coatings using brushes and rollers.

3.11 Chemical Milling: the removal of metal by chemical action of acids or alkalis.

3.12 Clear Topcoat: a clear or semi-transparent coating applied over a primer for purposes such as appearance, identification, or protection.

3.13 Coating: a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealers, and stains.

3.14 Commercial Exterior Aerodynamic Structure Primer: a primer utilized for the purpose of extended corrosion protection, which is only used on the exterior of passenger and cargo doors, supporting door structures, aerodynamic components, and structures of commercial aircraft which protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizer, vertical fins, wing-to-body fairings, antennae, landing gear and landing gear doors.

3.15 Conformal Coating: a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.

3.16 Decorative Laminate Primer: an adhesive bonding primer which is applied to a substrate to enhance adhesion between the decorative laminate and the subsequently applied substrate, and is cured at a maximum temperature of 250°F.

3.17 Dip Coating: the process in which a substrate is immersed in a solution (or dispersion) containing the coating and then withdrawn.

3.18 Dry Lubricative Coating: a coating 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.

3.19 Electric-effect Coating: an electrically-conductive coating.

3.20 Electrodeposition: a dip coating application method where the paint solids are given an electrical charge which is then attracted to a substrate.

3.21 Electronic Wire Coating: the outer electrical insulation coating applied to tape insulation of a wire specifically formulated to smooth and fill edges.

3.22 Electrostatic Application: a sufficient charging or atomized paint droplets to cause deposition principally by electrostatic attraction. This application shall be operated at a minimum 60 KV power.

3.23 Epoxy Based Fuel Tank Coating: a coating which contains epoxy resin that is applied to integral fuel tank components of aircraft to protect the fuel tank from corrosion and the by-products of bacterial growth.

3.24 Epoxy-Phenolic Primer: a multipolymer adhesive bonding primer which is formulated with both epoxy resin and phenolic resin and used for metal to honeycomb core bonding with a 350°F cure adhesive system.

3.25 Fastener Sealant: a sealant applied to a device used to join two or more parts together.

3.26 Fire Resistant Coating - Civilian (interior): a cabin interior coating that passes Federal Aviation Administration standards using the Ohio State University Heat Release, Fire and Burn Tests.

3.27 Flight Test Coating: a coating applied to an aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

3.28 Flow Coating: a coating application system where paint flows over the part and the excess coating drains back into a collection system.

3.29 Fuel Tank Adhesive: an adhesive used to bond components continuously exposed to fuel and which must be compatible with and used with fuel tank coatings.

3.30 Fuel Tank Coating: a coating applied to the interior of a fuel tank or areas of an aircraft that are continuously wetted by fuel to protect it from corrosion and/or bacterial growth.

3.31 Grams of VOC per Liter of Coating, Less Water and Exempt Compounds: the weight of VOC content per combined volume of VOC and coating solids and can be calculated by the following equation:

$$\text{Grams of VOC per liter of coating, less water and exempt compounds} = \frac{Ws - Ww - Wec}{Vm - Vw - Vec}$$

where,

Ws	=	weight of volatile compounds (grams)
Ww	=	weight of water (grams)
Wec	=	weight of exempt compounds (grams)
Vm	=	volume of material (liters)
Vw	=	volume of water (liters)
Vec	=	volume of exempt compounds (liters)

3.32 Grams of VOC per Liter of Material: the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{Ws - Ww - Wec}{Vm}$$

where,

Ws	=	weight of volatile compounds (grams)
Ww	=	weight of water (grams)
Wec	=	weight of exempt compounds (grams)
Vm	=	volume of material (liters)

3.33 Hand Application Methods: the application of coatings, sealants, or adhesives, by nonmechanical hand-held equipment including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags and sponges.

3.34 High Temperature Coating: a coating that must withstand temperatures of more than 350°F.

3.35 High-Volume, Low-Pressure (HVLP) Spray Equipment: equipment used to apply materials by means of a spray gun which is designed and intended to be operated, and which is operated, between 0.1 and 10.0 psig of air atomizing pressure measured dynamically at the center of the air cap and at the air horns.

3.36 Impact Resistant Coating: a flexible coating that protects aerospace components, such as aircraft landing gear, and landing gear compartments, and other surfaces subject to abrasive impacts from runway debris.

3.37 Liquid Leak: a visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.

3.38 Long Term Primer: an adhesive bonding primer used with a 350°F cure adhesive system for metal to honeycomb core bonding. The long term primer must provide shear values in excess of 2000 psi upon initial testing and upon 6000 hour testing. This definition shall expire on April 30, 2003.

3.39 Long Term Primer (Metal to Structural Core Bonding): an adhesive bonding primer that has met the aircraft manufacturers' required performance characteristics following 6000 hours testing, used for metal to structural core bonding, and with an adhesive that is specified to be cured at $350^{o}F \pm 10°F$. This definition shall be effective on and after May 1, 2003.

3.40 Maskant for Chemical Milling: a coating applied directly to an aerospace component to protect surface areas when chemical milling such component.

3.41 Metal to Metal, Metal to Honeycomb Core Bonding Primer: an adhesive bonding primer used on commercial aircraft to bond a metal component to another metal component or a metal component to a honeycomb core with a 250°F cure adhesive system.

3.42 Military Primer: an adhesive bonding primer cured at or below 450°F for bonding either an aluminum and/or titanium part for aircraft produced for the military or any spare part used for all aircraft produced for the military with a prototype in production prior to January 1, 1997.

3.43 Nitrile Phenolic Primer: a multipolymer adhesive bonding primer formulated with nitrile rubber and phenolic resins used for metal to metal bonding in sonic and acoustic applications with a 350°F cure adhesive system.

3.44 Non-Absorbent Container: a container made of non-porous material that does not allow the migration of solvents through it.

3.45 Non-Leaking Container: a container without liquid leak.

3.46 Non-Structural Adhesive: an adhesive that bonds non-load carrying aircraft component in noncritical applications.

3.47 Optical Anti-Reflective Coating: 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.

3.48 Organic Solvent: the same as "Solvent."

3.49 Organic Solvent Cleaning: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.50 Phosphate Ester Resistant Wire Ink Coating: a coating that is used for surface identification or mark on aerospace wire or cable and which inhibits the corrosion caused by contact with phosphate ester type hydraulic fluids.

3.51 Pretreatment Coating: a coating which contains no more than 12 percent solids by weight, and at least one-half (0.5) percent acid, by weight, to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

3.52 Primer: a coating applied directly to an aerospace component for purposes of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings, adhesives, or sealants.

3.53 Radiation-Effect Coating: a coating which helps in the prevention of radar detection.

3.54 Rain Erosion Resistant Coating: a coating that protects leading edges, flaps, stabilizers, and engine inlet lips against erosion caused by rain during flight.

3.55 Remanufactured Aircraft Part: an aerospace component that is built as a spare part or replacement part subject to an existing commercial aircraft specification. This definition shall be effective on and after May 1, 2003.

3.56 Roll Coating: application of coatings from a paint trough to a flat surface by mechanical series of rollers.

3.57 Scale Inhibitor: a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of tenacious scale.

3.58 Sealant: a viscous semisolid material that fills voids in order to seal out water, fuel, and other liquids and solids, and in some cases air movement, and is applied with a syringe, caulking gun, or spatula.

3.59 Short Term Primer (Metal to Structural Core Bonding): an adhesive bonding primer that has met the manufacturers' required performance characteristics following 1000 hours testing, used for metal to metal and metal to structural core bonding, and with an adhesive which is specified to be cured at a temperature of $350^{o}F \pm 10°F$. This definition shall be effective on and after May 1, 2003.

3.60 Solid Film Lubricant: a very thin coating consisting of a binder system containing as its chief pigment material one (1) or more of the following: molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE) or other solids that act as a dry lubricant between closely-fitting surfaces.

3.61 Solvent: as defined in Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).

3.62 Sonic and Acoustic Applications: the use of aerospace materials on aerospace components that are subject to mechanical vibration and/or sound wave cavitation. This definition shall be effective on and after May 1, 2003.

3.63 Space Vehicle Coating: a coating applied to vehicles designed to travel beyond earth's atmosphere.

3.64 Stripper: a volatile liquid applied to remove a maskant for chemical processing, cured or dried paint, cured or dried paint residue or temporary protective coating.

3.65 Structural Adhesive - Autoclavable: an adhesive used to bond load-carrying aircraft components and is cured by heat and pressure in an autoclave.

3.66 Structural Adhesive - Nonautoclavable: an adhesive cured under ambient conditions and is used to bond load-carrying aircraft components or other critical functions, such as nonstructural bonding near engines.

3.67 Surface Cleaning: any method of cleaning outside of a degreaser, including but not limited to:

3.67.1 Wipe cleaning.

3.67.2 Equipment flushing.

3.68 Temporary Protective Coating: a coating applied to an aerospace component to protect it from mechanical and environmental damage during manufacturing or shipping.

3.69 Topcoat: a coating applied over a primer for purposes such as appearance, identification, or protection.

3.70 Transfer Efficiency: the ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids used in the application process, expressed as a percentage.

3.71 Unicoat: a coating that is applied directly to an aerospace component for purposes of corrosion protection, environmental protection and functional fluid resistance that is not subsequently topcoated. A unicoat is used in lieu of the application of a primer and a topcoat.

3.72 Volatile Organic Compounds (VOCs): refer to Rule 1020 (Definitions).

3.73 Waste Solvent Material: any solvent which may contain dirt, oil, metal particles, sludge, and/or waste products, or wiping material containing VOCs including, but not limited to, paper, cloth, sponge, rag, or cotton swab used in organic solvent cleaning.

3.74 Wing Coating: a coating that is corrosion resistant and is resilient enough to withstand the flexing of wings.

3.75 Wire Prebonding Etchant: a nonadditive surface treatment process to provide bondability of aerospace wire coatings to the underlying insulation layer.

4.0 Exemptions

4.1 Until January 1, 1994, the requirements of Section 5.0 of this rule shall not apply to jet engine or rocket engine gas path cleaning or flushing operations using trichloroethylene which are carried out in accordance with procedures approved by the APCO. Jet engine or rocket engine flushing operations using any solvent other than trichloroethylene shall remain exempt from this rule.

4.2 The requirements of Section 5.0 shall not apply to aerospace assembly and component coating operations using not more than four (4) gallons of products containing VOCs per day. Solvent-containing materials used in operations subject to Rule 4662, (Organic Solvent Degreasing Operations), shall not be included in this determination.

4.3 Except for the provisions of Section 6.0, Section 5.0 shall not apply to laboratories which apply coatings, solvents, and adhesives to test specimens for purpose of research, development, quality control, and testing for production-related operations. Any person claiming this exemption shall provide operational records, data and calculations, as determined by the APCO to be necessary, to substantiate this claim.

4.4 The provisions of Section 5.1 of this rule shall not apply to:

4.4.1 Coatings or aerosols with separate formulations that are used in volumes of less than one (1) gallon on any day or 20 gallons in any calendar year at an aerospace assembly and component coating stationary source, or

4.4.2 Adhesives with separate formulations that are used in volumes of less than one half (0.5) gallon on any day or ten (10) gallons in any calendar year at an aerospace assembly and component coating stationary source.

Any person seeking to claim the exemption in Section 4.4 shall notify the APCO in writing that substitute complying coatings are not available.

4.5 The provisions of Section 5.5 shall not apply to the application of coatings that:

4.5.1 Contain less than 20 grams of VOC per liter of coating less water and exempt compounds, or

4.5.2 Are dispensed from hand-held aerosol cans.

4.6 For existing stationary sources, if an incineration device is added or modified for the sole purpose of complying with the requirements of this rule, such a device shall be exempt from the Best Available Control Technology and the Offset requirements of Rule 2201 (New and Modified Stationary Source Review Rule) provided that:

4.6.1 The proposed project will not result in an increase in capacity utilization of the unit being controlled.

4.6.2 The operator demonstrates to the satisfaction of the APCO that the proposed project is environmentally beneficial and will not cause or contribute to any violation of a national ambient air quality standard (NAAQS), prevention of significant deterioration (PSD) increment, or air quality related value (AQRV) in a class I area.

5.0 Requirements

5.1 Aerospace Coatings and Adhesives: After the applicable effective date indicated in Table 1, no person shall apply to any aerospace component any coating, aerosol or adhesive with a VOC content, less water and exempt compounds, as applied, in excess of the limits in Table 1.

Table 1
Limits (Grams of VOC Per Liter of Coating, Less Water and Exempt Compound)
and Effective Dates

Product (VOC Containing Material)	5/1/00	5/1/03
Adhesion Promoter	850	850
Adhesives		
Non-Structural	250	250
Structural		
Autoclavable	50	50
Nonautoclavable	850	850
Adhesive Bonding Primers		
General	250	(1)
Decorative Laminating	800	(1)
Epoxy-Phenolic (for Metal to Honeycomb Core Bonding)	800	(1)
Long Term (for Metal to Honeycomb Core Bonding)	250	(1)
Metal to Metal, Metal to Honeycomb Core Bonding	800	(1)
Military	700	(1)
Nitrile Phenolic (for Metal to Metal)	800	(1)
New Commercial Aircraft		250 (2)
All Military Aircraft		805 (2)
Remanufactured Commercial Aircraft Parts		805 (2)
Sonic and Acoustic Applications		805 (2)
Long Term		250 (2)
Short Term		250 (2)
Antichafe Coatings	600	600
Barrier Topcoat	420	420
Clear Topcoat	520	520
Conformal Coating	750	750
Dry Lubricative Materials		
Fastener Manufacturing	120	120
Nonfastener Manufacturing	675	675
Electric/Radiation Effect Coatings	800	800
Fastener Sealants	675	675
Fire Resistant Coatings		
Civilian (Interior)	650	650
Flight Test Coatings Used on		
Missiles or Single-Use Target Craft	420	420
All others	600	600
Fuel Tank Coatings		
General	420	420
Epoxy	420	420
Fuel Tank Adhesives	620	620
High Temperature Coating	850	850
Impact Resistant Coating	420	420
Maskants - Chemical Milling	250	250

Table 1
Limits (Grams of VOC Per Liter of Coating, Less Water and Exempt Compound) and Effective Dates

Product (VOC Containing Material)	5/1/00	5/1/03
Optical Anti-Reflective Coating	700	700
Pretreatment Coatings	780	780
Primers		
General	350	350
Commercial Exterior Aerodynamic Structure	350	350
Rain Erosion Resistant Coating	800	800
Scale Inhibitor	880	880
Sealant	600	600
Solid Film Lubricants		
Fastener Manufacturing	250	250
Fastener Installation	880	880
Nonfastener Manufacturing	880	880
Space Vehicle Coatings		
Electrostatic Discharge Protection	800	800
Other Space Vehicle Coatings	1000	1000
Adhesives	800	800
Temporary Protective Coatings	250	250
Topcoats	420	420
Unicoats (Self Priming Topcoats)	420	420
Wing Coating	750	750
Wire Coatings		
Electronic	420	420
Anti-Wicking	420	420
Pre-Bonding Etching	420	420
Phosphate Ester Resistant Ink	925	925

(1) These existing categories shall be replaced with new categories (2) to be effective on and after 5/1/03.

5.2 Evaporative Loss Minimization:

5.2.1 Surface Cleaning: No person shall use a solvent for surface cleaning, clean-up, or jet engine or rocket engine gas path cleaning or flushing, not exempt under Section 4.0 of this rule, excluding stripping coatings or cleaning coating application equipment, unless:

5.2.1.1 the solvent contains less than 200 grams of VOC per liter (1.67 lb/gal) of material, as applied; or

5.2.1.2 the VOC composite vapor pressure of the solvent is less than or equal to 45 mm Hg (0.87 psia) at a temperature of 68°F.

5.2.2 Coating Application Equipment Cleaning:

Effective January 1, 1992, no person shall use materials containing VOC for the cleaning of equipment used in coating operations unless an enclosed system or enclosed gun washer is used according to the manufacturer's recommendations and is closed when not in use. Section 5.2.2 shall remain in effect through November 14, 2002.

5.2.3 Coating Application Equipment Cleaning:

Effective on and after November 15, 2002, an owner or operator shall not use VOC-containing materials to clean spray equipment used for the application of coatings, adhesives, or ink, unless an enclosed system or equipment that is proven to be equally effective at controlling emissions is used for cleaning. If an enclosed system is used, it must totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing and draining procedures, and it must be used according to the manufacturer's recommendations and must be closed when not in use.

5.3 Coating Strippers: Effective January 1, 1992, no person shall use or specify for use within the District a coating stripper unless it contains less than 300 grams of VOC per liter (2.5 lb/gal), as applied, or unless it has a VOC composite vapor pressure of 9.5 mm Hg (0.18 psia) or less at 68°F.

5.4 Storage and Disposal of VOC Containing Materials: An owner or operator shall store or dispose of fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in closed, non-absorbent and non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.

5.5 Application Equipment Requirements: Effective January 1, 1992, no person shall apply coatings subject to the provisions of this rule unless one (1) of the following methods is used:

5.5.1 Electrostatic application;

5.5.2 Electrodeposition;

5.5.3 High-Volume, Low- Pressure (HVLP) spray,

5.5.3.1 High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.

5.5.3.2 For HVLP spray guns manufactured prior to January 1, 1996, the end user shall demonstrate that the gun meets HVLP spray equipment standards. Satisfactory proof will be either in the

form of manufacturer's published technical material or by a demonstration using a certified air pressure tip gauge, measuring the air atomizing pressure dynamically at the center of the air cap and at the air horns.

5.5.3.3 A person shall not sell or offer for sale for use within the District any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in section 3.0.

5.5.3.4 Sections 5.5.3.1, 5.5.3.2, and 5.5.3.3 shall be effective on and after November 15, 2002;

5.5.4 Flow coating;

5.5.5 Roll coating;

5.5.6 Dip coating;

5.5.7 Brush coating.

5.6 Add-on Control Equipment Option: As an alternative to meeting the requirements of Section 5.1 or Section 5.2, a person may install pollution control equipment provided that:

5.6.1 The control device shall reduce organic emissions from an emission collection system by at least 95 percent, by weight, and

5.6.2 The control system shall capture at least 90 percent, by weight, of all the organic emissions from the source to the control device, and

5.6.3 Authority to Construct for such equipment is received from the APCO, and

5.6.4 In no case shall compliance through the use of Section 5.6 result in VOC emissions in excess of the VOC emissions which would result from compliance with Section 5.1. The minimum required control efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by using the following equation:

$$CE = \left[1 - \left(\frac{VOC_{LWc}}{VOC_{LWn,\mathrm{Max}}} \, x \, \frac{1 - (VOC_{LWn,\mathrm{Max}} / D_{n,\mathrm{Max}})}{1 - (VOC_{LWc} / D_c)} \right) \right] x \, 100$$

Where:

CE = Control Efficiency, percent

VOC_{LWc} = VOC Limit, less water and exempt compounds

$VOC_{LWn,Max}$ = Maximum VOC content of noncompliant coating used in conjunction with a control device, less water and exempt compounds

$D_{n,Max}$ = Density of solvent, reducer, or thinner contained in the noncompliant coating, containing the maximum VOC content of the multi-component coating

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant coating system.

5.7 Prohibition of Solicitation: After the effective date of this rule, no person shall solicit, specify or require any other person to use in the District any coating, solvent, spray equipment, or control equipment that does not meet the limits or requirements of this rule.

6.0 Administrative Requirements

6.1 Recordkeeping

6.1.1 Any person subject to the requirements of this rule shall have coating manufacturer's specifications, either listed on the coating container, product data sheet, or on Material Safety Data Sheets (MSDS), available for review and shall maintain daily records which show the following information as applicable:

6.1.1.1 manufacturer name and type for each coating, solvent, thinner, reducer or stripper used,

6.1.1.2 mix ratio, by volume, of components added to the original material prior to application,

6.1.1.3 grams of VOC per liter of each coating, solvent, thinner, reducer or stripper, less water and exempt compounds, as applied,

6.1.1.4 grams of VOC per liter of each solvent, thinner, reducer, or stripper,

6.1.1.5 volume and method of application of each coating, solvent, thinner, reducer or stripper applied, and

6.1.1.6 vapor pressure of solvents used.

6.1.2 Owners shall maintain records to support that the following coatings have been specified for their intended application.

6.1.2.1 adhesion promoter.
6.1.2.2 antichafe coating.
6.1.2.3 electric/radiation effect.
6.1.2.4 fuel tank adhesive.

6.1.2.5 high temperature coating.
6.1.2.6 impact resistant coating.
6.1.2.7 optical anti-reflective coating.
6.1.2.8 rain erosion resistant wing coating.

6.1.3 Any person using an add-on emission control system as a means of complying with the provisions in Section 5.6 shall maintain daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

6.1.4 Records shall be maintained for a minimum of two (2) years and shall be available for inspection by the APCO. A longer period of time for record retention may be specified by a permit condition.

6.1.5 Effective on and after November 15, 2002, all records shall be retained for a period of five (5) years and shall be made available for inspection by the APCO upon request.

6.2 Test Methods

6.2.1 Coating VOC content and solvent VOC content shall be determined using EPA Reference Method 24 or its constituent methods. The VOC content of coatings or solvents containing exempt compounds shall be determined by ARB Test Method 432.

6.2.2 The solid content of pretreatment coatings shall be determined using EPA Reference Method 24. The acid content of pretreatment coatings shall be determined using ASTM Method D1613-91.

6.2.3 The test method for determining the fire resistance of an interior coating shall be Federal Aviation Administration required Ohio State University Heat Release, Fire and Burn Tests.

6.2.4 The VOC composite vapor pressure of a blended solvent shall be determined by quantifying the amount of each organic compound in the blend using gas chromatographic analysis (ASTM 2306-81) and by calculating the VOC composite vapor pressure of the solvent by summing the product of the vapor pressure of each pure component and its molar fraction. For the purpose of this calculation, the blend shall be assumed to be an ideal solution where Raoult's Law applies. The vapor pressure of each pure component shall be obtained from published reference manuals or handbooks.

6.2.5 The VOC emissions from enclosed systems used to clean coating application equipment shall be determined by the manufacturer using the South Coast

Air Quality Management District General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems.

6.2.6 The control device efficiency of any air pollution control equipment shall be determined using EPA Methods 2, 2A, 2C, or 2D for measuring flow rates and EPA Methods 25, 25A, or 25B for measuring the total gaseous organic concentrations at the inlet and outlet of the control device. The calculation of control device efficiency shall be determined only during periods of continuous coating operations and shall be averaged over the duration of the coating operation not to exceed 24 hours.

6.2.7 Capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995. An equivalent alternate test method for determination of capture efficiency may be used provided it has been approved in writing by the APCO, California Air Resources Board, and the U.S. Environmental Protection Agency.

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APPENDIX C
Eastern Kern Air Pollution Control District
Best Available Control Technology (BACT)

BACT for
Aerospace Assembly and Coating Operations
Policy 95-01

KERN COUNTY APCD

TITLE:	**BACT for Aerospace Assembly and Component Manufacturing Operations**	**ADOPTED:**	**02/01/95**
POLICY:	**95-01**	**REVISED:**	**06/14/99**
RECOMMENDED BY:	**Mary Flynn, AQEII**		
APPROVED BY:	**Thomas Paxson, P.E., APCO**		

PURPOSE OF POLICY:

To set forth Best Available Control Technology (BACT) requirements for Aerospace Assembly and Component Manufacturing Operations.

APPLICABILITY:

Manufacturing, assembling, coating, masking, bonding, paint stripping, and surface cleaning of aerospace components and cleanup of equipment associated with these operations.

EXEMPTIONS:

Touch-up defined as application of coating by brush, airbrush, detail HVLP spray equipment or hand-held, non-refillable aerosol cans to repair minor surface damage and imperfections after main coating process not exceeding nine square feet per unit.

Facilities applying less than 50 gallons per year of coatings.

BACKGROUND:

Rule 210.1, Section III requires an applicant to provide BACT for all affected pollutants expected to be emitted from a new emissions unit, or increased from a modified existing emissions unit.

KCAPCD Rule 210.1, Section II defines BACT as the most stringent emission limitation or control technique:

1. Achieved in practice for such emission unit and class of source; or

2. Contained in any State Implementation Plan approved by the U.S. EPA for such emissions unit category and class of source (provided the limitation or control technique is currently available); or

3. Any other emission limitation, control device, alternate basic equipment, or different process found to be technologically feasible for a specific source, and cost effective as determined by District Policy #92-01.

DEFINITIONS:

Aerospace Component — any raw material, partial or complete fabricated part, assembly of parts, or completed unit or any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes.

Touch-up — application of coating by brush, airbrush, detail HVLP spray equipment or hand-held, non-refillable aerosol cans to repair minor surface damage and imperfections after main coating process not exceeding nine square feet per unit.

BACT REQUIREMENTS:

Control technologies for Volatile Organic Compounds appear on the following list in order or most stringent to least stringent. An applicant shall evaluate the most stringent control technique first. If this control technique is not proposed, a cost effectiveness analysis of this technique shall be provided pursuant to District Policy #92-01. To determine cost effectiveness, the following must be provided: manufacturer's estimate of capital cost of listed control equipment, installation costs, and annual operating costs of the control equipment. Cost effectiveness will be affected by amount of emissions to be generated; therefore, it is necessary to submit volatile organic compound (VOC) content as used/applied of all solvents and coatings with anticipated maximum daily and maximum annual usage of each coating/solvent.

In no case can the proposed control technique be less stringent than BACT achieved in practice for such emission unit and class of source already found to meet criteria of Policy #92-01.

1. **BACT for Volatile Organic Compounds**

   A. Use of coatings with solvent content less than or equal to those specified on attached table and VOC emissions collection system with at least 90% capture efficiency followed by afterburner or carbon adsorber achieving greater than or equal to 95% control efficiency; or

   B. VOC collection system with at least 90% capture efficiency followed by afterburner or carbon adsorber achieving greater than or equal to 95% control efficiency; or

   C. Use of coatings with solvent content less than or equal to those specified in attached

table. (This level of control meets all three BACT definition criteria and this is the minimum approveable control technology for all new and modified operations involved in aerospace and assembly and component manufacturing).

2. **BACT for Particulate Matter**

The following levels of control are Achieved in Practice in Kern County APCD, and are the minimum approveable control technologies for all new and modified aerospace assembly and component manufacturing operations.

A. Use of one or more "ultra high" transfer efficiency techniques, e.g., brush, roll, dip, flow, or hand application; or

B. Use of High Volume, Low Pressure (HVLP) or electrostatic spray gun within an enclosure with a particulate filter having capture efficiency of greater than or equal to 90% and control efficiency greater than or equal to 95% , (or alternate process yielding greater than or equal to 90% overall particulate control).

3. **BACT for Cleanup**

The following levels of control are Achieved in Practice in Kern County APCD, and are the minimum approveable control technologies for all new and modified aerospace assembly and component manufacturing operations.

A. VOC-containing material used for surface cleaning or clean-up, excluding coating stripping and equipment cleaning, shall satisfy the following:

1. Shall contain 200 grams or less of VOC per liter of material; or

2. Composite vapor pressure of the VOC shall be 45 mm Hg or less at a temperature of 20˚C (68˚F).

B. VOC-containing material used for stripping of aerospace components shall satisfy the following:

1. Stripper shall contain less than 300 grams of VOC per liter of material; or

2. Composite vapor pressure of the VOC shall be 9.5 mm Hg (0.18 psia) or less at a temperature of 20˚C (68˚F).

C. VOC-containing material for equipment cleaning shall satisfy the following:

1. If used for cleaning of polyester resin application equipment:

a. Solvent shall have a VOC content of 200 grams or less of VOC per liter of material; or

b. Solvent shall have a VOC content of 1100 grams or less of VOC per liter of material and a VOC composite partial pressure of 1.0 mm Hg or less at 20°C (68°F);

2. If used for cleaning of coatings and adhesives application equipment:

a. Solvent shall have a VOC content of 950 grams or less of VOC per liter of material; and

b. Solvent shall have a VOC composite partial pressure of 35 mm Hg or less at 20°C (68°F);

D. Cleaning operations using VOC-containing material shall utilize one of the following:

1. Wipe cleaning;

2. Spray bottles or containers with a maximum capacity of 16 fluid ounces from which solvents are applied without a propellant-induced force;

3. Cleaning equipment in a solvent container closed during cleaning operations, except when depositing and removing objects to be cleaned, and closed during non-operation except during maintenance and repair of the cleaning equipment itself;

4. Remote reservoir cold cleaner operated in conformance with Rule 410.3;

5. Enclosed system totally enclosing spray guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures;

6. Non-atomized solvent flow method collecting cleaning solvent in a container or a collection system closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or

7. Solvent flushing method discharging cleaning solvent into a container closed except for solvent collection openings, and, if necessary, openings to avoid an excessive pressure build-up inside the container. Discharged solvent from such equipment shall be collected into containers without atomizing into the open air. Solvent may be flushed through the system by air or hydraulic pressure, or by pumping.

E. Cleaning operations using VOC-containing material shall not atomize any solvent into open air.

APPENDIX D
California Air Resources Board
Identification of Performance Standards
for Existing Stationary Sources

Aerospace Coating Appendix

Aerospace Coatings

Notes: Several districts have adopted aerospace coating rules that establish VOC content limitations for specific coatings. Determining which rule is the most stringent is difficult because: 1) some rules define specific limits for specific types of coatings that are not defined in other districts, 2) some rules define coating categories generically while others have many coating specialty subcategories, and 3) different rules exempt different VOC compounds. Therefore, it is important to provide the districts flexibility when selecting the best "combination" of requirements and not always the "most stringent" requirement. Each rule should be looked at as a system of emission limits and performance requirements designed to meet the requirements of a specific district's program.

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date											
		BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating Operations 12/29/95		SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96		SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97		VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96		U.S. EPA Aerospace Manufacturing and Rework Operations [b] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*	
		Performance Standard											
VOC	VOC ROC	X	Reg 1 does not exempt PCE		Rule 102 exempts PCE		Rule 2 exempts PCE	X	Rule 2 ROC does not exempt PCE	X	CTG exempts PCE *NESHAP does not exempt PCE, TCA, MeCl*
adhesives and coating application, general solvent limit	VOC			X	reduce organic material emissions from organic solvent or materials containing organic solvent by 85% Rule 442						
spray coating equipment, general	VOC HAP			X	must be operated in a controlled enclosure except: spraying catalyzed epoxy or polyurethane primers or coating that can not fit in an enclosure or completed vehicles Rule 481					X	*primers & topcoats, with inorganic HAP emissions: all sources apply coatings in a booth or hangar in which air flow is directed downward onto or across the part or assembly being coated.* (9-1-98)
ablative coating	VOC				650 fire resistant, civilian						600 (9-1-99)
ablative coating military	VOC			X	970 fire-resistant, military						

Table I (1 of 2)
Identification of Performance Standards
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		Performance Standard									
adhesive, commercial interior	VOC				805 250 (1/1/02) adhesive bonding primer					X	760 (9-1-99)
adhesive, cyanoacrylate	VOC			X	805 250 (1/1/02) adhesive bonding primer						1020 (9-1-99)
adhesive, elastomeric	VOC			X	805 1/1/98 250 (1/1/02) adhesive bonding primer		850				
adhesive, fuel tank	VOC			X	620	X	620				620 (9-1-99)
adhesive, promotor	VOC ROC			X	805 250 (1/1/02) adhesive bonding primer				850		
adhesive, rocket motor bonding	VOC										890 (9-1-99)
adhesive, rubber-based	VOC			X	805						850 (9-1-99)

Table I (1 of 2)
Identification of Performance Standards
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		Performance Standard									
					250 (1/1/02) adhesive bonding primer						
adhesive, non-structural	VOC ROC			X	250			X	250		360 (9-1-99)
adhesive, structural epoxy	VOC					X	50 epoxy				
adhesive, structural autoclavable	VOC ROC		exempt Reg. 8 Rule 4 see adhesive bonding primer	X	50	X	50	X	50		60 (9-1-99)
adhesive, structural non-autoclavable	VOC ROC				850	X	250		850 NO SOURCES 12/97		850 (9-1-99) cure <250°F
adhesive, all other	VOC				adhesives exempt from all or part of Rule 1124 are subject to Rule 442	X	250 all other				

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

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		Performance Standard									
adhesive bonding primer	VOC ROC		850 exempt high-temp-cure >325°F see Reg 8 Rule 4, section 8-4-301 exempts operations using heat if <2.5 tpy VOC	X	805 250 (1/1/02) <350°F		850	X	780 NO SOURCES 12/97		850 <250°F (9-1-99) 1030 >250°F (9-1-99)
adhesive bonding primer, elastomer or elastomeric	VOC			X	805 250 (1/1/02) adhesive bonding primer		850				
adhesive bonding primer, epoxy-phenolic (metal to honeycomb) >350°F	VOC										

Table I (1 of 2)
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		Performance Standard									
adhesive bonding primer, long term metal to structural core bonding	VOC				800 250 (1/1/00) >350^{O}F		850 structural				1030 (9-1-99)
adhesive bonding primer, short term metal to structural core bonding	VOC			X	250 >350^{O}F		850 all other				1030 (9-1-99)
adhesive bonding primer, decorative laminating	VOC										
adhesive bonding primer, military	VOC										
adhesive bonding primer, nitrile phenolic (metal to metal)	VOC										
adhesive bonding primer, all other	VOC										
antichafe	VOC			X	600	X	600	X	600		660 (9-1-99)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

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		Performance Standard									
barrier a.k.a. fastener lubricative, barrier coating	VOC ROC							X	420		
bearing	VOC			X	420 fastener, lubricative, barrier coating		620				
caulking and smoothing compounds	VOC					X	850				
chemical agent-resistant (CARC)	VOC			X	420 topcoat						550 (9-1-99)
commercial exterior aerodynamic structural primer	VOC			X	650 low solids corrosion resistant primer						650 (9-1-99)
conformal	VOC ROC				750		750		750		
corrosion prevention compound	VOC			X	780 pretreatment coating						780 (9-1-99)

Table I (1 of 2)
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		Performance Standard									
cryogenic flexible primer	VOC			X	350 general primer						645 (9-1-99)
cryoprotective coating	VOC			X	420 topcoat						600 (9-1-99)
electric or radiation effect coating	VOC ROC		800		800		800		675 NO SOURCES 12/97		800 (9-1-99)
elevated temperature skydrol resistant commercial primer	VOC			X	805 250 (1/1/02) adhesive bonding primer					X	740 (9-1-99)
extreme performance interior coating, barrier	VOC	X	420	X	420 topcoat						
fastener, installation, solid-film lubricant	VOC ROC			X	880			X	880		
fastener, installation, dry lubricative material	VOC			X	675						

Table I (1 of 2)
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Source Category: Aerospace Coatings [a]

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		Performance Standard									
fastener, lubricative, solid-film lubricant	VOC ROC			X	250			X	250 mfg 1 SOURCE USING AFTERBURNER 12/97		
fastener, lubricative, dry lubricative material	VOC ROC			X	120		250 9/1/92		250 mfg		
fastener, lubricative, barrier coating	VOC ROC			X	420			X	420 barrier		
non-fastener lubricative, solid film lubricant	VOC ROC			X	880			X	880		
non-fastener lubricative, dry lubricative material	VOC ROC			X	675		880		880		
fastener, wet installation coating	VOC			X	250 fastener, lubricative, solid-film lubricant						850 (9-1-99)
fire insulation coating, interior fire-resistant, civilian	VOC ROC	X	600		650				650		800 (9-1-99)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

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		Performance Standard									
fire-resistant, military	VOC			X	970						
flight-test coating, missiles or single use target	VOC ROC			X	420			X	420		420 (9-1-99)
flight-test coating, all other	VOC ROC				840			X	600 NO SOURCES 12/97		840 (9-1-99)
fuel tank coating	VOC ROC		720	X	420		720	X	420		720 (9-1-99)
fuel tank coating, epoxy	VOC ROC			X	680 420 (1/1/99)			X	620 NO SOURCES 12/97		780 (9-1-99) compatible substrate, epoxy or adhesive primer surfaces that contain fuel (not fuel tank coating)
fuel tank coating, rubber	VOC				680 420 (1/1/02)						
high-temperature coating, >350°F	VOC ROC		720		850		850		850 NO SOURCES 12/97		850 (9-1-99)

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		Performance Standard									
impact resistant	VOC ROC			X	420			X	420		780 (9-1-99) compatible substrate, epoxy
insulation covering, applied to foam insulation	VOC			X	420 topcoat						740 (9-1-99)
lacquer	VOC										830 (9-1-99) Note: California pigmented lacquer may be considered topcoats (320 g/L) while non-pigmented lacquer may be considered clear topcoats (520 g/L)
metallized epoxy coating	VOC			X	700						740 (9-1-99)
mold release	VOC										780 (9-1-99)
optical anti-reflective	VOC ROC			X	700			X	700		750 (9-1-99)
part marking	VOC										850 (9-1-99)

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		Performance Standard									
pretreatment wash primer, 0.5% acid	VOC ROC	X	420		780 pretreatment coating		780		780		780 (9-1-99)
primer, general	VOC ROC HAP	X	350	X	350	X	350	X	350 phosphate		*350 (2.9 lb/gal)* (9-1-98)
primer, flexible	VOC			X	350 primer general						640 (9-1-99)
primer, low solids corrosion resistant	VOC			X	650 see commercial exterior aerodynamic structural primer					X	650 (9-1-99)
primer, not resistant to phosphate esters	VOC ROC			X	350 primer general			X	350		
primer, resistant to phosphate esters	VOC ROC			X	350 primer general			X	350		
primer, compatible w/ rain resistant coating	VOC			X	850						

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
		BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating Operations 12/29/95		SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96		SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97		VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96		U.S. EPA Aerospace Manufacturing and Rework Operations [b] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*	
		Performance Standard									
rain erosion-resistant	VOC ROC				800			X	420 NO SOURCES 12/97		850 (9-1-99)
rain erosion resistant, fluoroelastomer	VOC										
rocket motor nozzle	VOC									X	660 (9-1-99)
sealant	VOC ROC	X	600	X	600	X	600	X	600		600 (9-1-99) sealant, spray
sealant, extrudable/rollable/brushable	VOC			X	600 sealant					X	280 (9-1-99)
self-priming topcoat, unicoat	VOC ROC HAP	X	420	X	420	X	420	X	420		*420 (3.5 lb/gal)* (9-1-98)
sealant bonding primer, used before silicone sealant	VOC		720	X	350 primer general						
silicone insulation material	VOC									X	850 (9-1-99)
scale inhibitor	VOC ROC			X	880			X	880		880 (9-1-99)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
screen print ink	VOC										840 (9-1-99) Note: California Graphic Art or Screen Printing Rules contain limits (300-800 g/L)
space-vehicle, adhesive	VOC ROC			X	800	X	800	X	800		
space-vehicle coating, electrostatic discharge protective coating	VOC ROC			X	800	X	800	X	800		800 (9-1-99)
space-vehicle coating, thermocontrol	VOC ROC										
space-vehicle coating, other	VOC ROC			X	1000	X	1000	X	1000		
temporary protective coating	VOC ROC	X	250			X	250	X	250		320 (9-1-99)
thermal control	VOC					X	600				800 (9-1-99)
thermal expansion release	VOC										
topcoat, general	VOC ROC	X	320		420		420		420		*420 (3.5 lb/gal)*

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
	HAP										(9-1-98)
topcoat, clear	VOC ROC			X	520			X	520		720 (9-1-99) clear coating
topcoat, epoxy polyamide	VOC ROC									X	660 (9-1-99)
topcoat, interior	VOC ROC	X	340		420 topcoat, general		420 topcoat, general		420 topcoat, general		
topcoat, acrylic lacquer for F-111	VOC										
wing	VOC ROC			X	750			X	420 NO SOURCES 12/97		850 (9-1-99)
wire, electronic	VOC ROC			X	420			X	420		
wire, anti-wicking	VOC ROC			X	420			X	420		

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
wire, pre-bonding etchant	VOC ROC			X	420			X	420		
phosphate ester resistant ink	VOC ROC			X	925			X	925		
all other or general coating	VOC			X	350		420				

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
primer & topcoats, inorganic HAP emissions	HAP					*all sources:* *apply coatings in a booth or hangar in which air flow is directed downward onto or across the part or assembly being coated.* (9-1-98) *existing (constructed before 6-6-94):* *- control, 2 stage dry particulate filter* (9-1-98) *for new source constructed between 6/6/94 and 10/29/96:* *- control, 2 stage dry particulate filter or* *-waterwash* *new source constructed between 6/6/94 and 10/29/96 with chromium or cadmium:*

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
		BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating Operations 12/29/95		SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96		SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97		VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96		U.S. EPA Aerospace Manufacturing and Rework Operations [b] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*	
		Performance Standard									
											-control , 3 stage dry particulate filter or -HEPA filter *new source constructed after 10/29/96: -control, 3 stage dry particulate filter*
maskant, chemical processing	VOC	X	600 does not exempt PCE	X	250 exempts PCE	X	250 exempts PCE <u>or</u> dip tank controls				
maskant, chemical milling	VOC ROC HAP	X	600 does not exempt PCE (included above in chemical processing)		250 exempts PCE	X	160 type II others 250 <u>or</u> type I dip tank controls exempts PCE	X	250 does not exempt PCE	X	*622 type I (9-1-98) 160 type II (9-1-98) does not exempt PCE*

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
		BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating Operations 12/29/95		SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96		SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97		VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96		U.S. EPA Aerospace Manufacturing and Rework Operations [b] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*	
		Performance Standard									
maskant, photolithographic	VOC			X	850						
maskant, touch-up, liner-sealer	VOC			X	750						
maskant, bonding	VOC			X	250 maskant processing exempts PCE						1230 (9-1-99)
maskant, critical use an line sealer	VOC			X	250 maskant processing exempts PCE						1020 (9-1-99)
maskant, seal coat	VOC			X	250 maskant processing exempts PCE						1230 (9-1-99)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
		BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating Operations 12/29/95		SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96		SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97		VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96		U.S. EPA Aerospace Manufacturing and Rework Operations [b] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*	
		Performance Standard									
solvent use, surface preparation, clean up or mixing	VOC ROC HAP				- ≤ 200 g/l or - composite partial pressure ≤ 45 mm Hg or less at 20°C	X	- ≤ 200 g/l or - ≤ 45 mm Hg or less at 20°C or - initial boiling point ≤ 190°C or greater at 760 mm Hg total pressure - enclosed cleaning material which is opened only when accessing part or adding surface cleaning material	X	- ≤ 200 g/l or - ROC ≤ 25 mm Hg at 20°C	X	*- aqueous cleaning solvent with ≥ 80 % water, a flashpoint > 93°C (200°F), and miscible with water, or - hydrocarbon cleaner with a max. VP ≤ 7 mm Hg at 20°C (3.75 in H_2O at 68°F) and contain no HAP or ozone depleting compounds, or - composite partial pressure ≤ 45 mm Hg or less at 20°C* (9-1-98)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
solvent use, storage or disposal of coating or stripper containing organic solvent	VOC ROC HAP	minimize solvent evaporative loss: - closed containers for storage or disposal of cloth or paper - closed container when not in use 8/4/82	- solvent non-adsorbent, no-leaking container kept closed - recommended cloth and paper be stored the same Rule 1171	- can't use coating equipment to dispose of . . . into the air	- closed containers	*- place solvent-laden cloth, paper, or any other absorbent applicators used for cleaning in bags or other closed containers designed as to contain vapors upon completing their use.* *- keep closed when not in use* (9-1-98)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
solvent use, cleaning equipment	VOC ROC HAP	X	shall not use organic compounds for the cleanup of spray equipment including paint lines unless equipment for collecting the cleaning compounds and minimizing their evaporation to the atm is used. 2/3/93		- closed during cleaning operations; - remote reservoir; - non-atomized solvent flow w/ collection system closed; - flushing into closed container Rule 1171	X	- ≤ 200 g/l or - ≤ 20 mm Hg or less at 20°C or - initial boiling point ≤ 190°C or greater at 760 mm Hg total pressure - closed during cleaning - cleaned equipment or part is drained until dripping ceases - totally encloses component part during washing, rinsing and draining		-enclosed gun washer or low emission spray gun cleaner approved by APCO and -ROC composite partial pressure of organic solvent used is less than 45 mm Hg at 20°C		*- enclosed system;* *- non-atomized cleaning;* *- disassemble and clean in a vat;* *- atomized into a container designed to capture emissions* (9-1-98)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date											
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		Performance Standard											
stripper, organic emissions	VOC ROC HAP	X	- ≤ 400 g/l or - ≤ 10 mm Hg (0.19 psia) true VP at actual usage temperature	X	- ≤ 300 g/l or - ≤ 9.5 mm Hg (0.18 psia) composite partial pressure at 20°C		- ≤ 400 g/l or - ≤ 9.5 mm Hg (0.18 psia) composite partial pressure less at 20°C	X	- ≤ 300 g/l ROC or - ROC composite partial pressure ≤ 9.5 mm Hg or less at 20°C	X	*Option 1 -non-HAP chemical strippers no control* (9-1-98) *Option 2 - nonchemical based equipment: operate & maintain the equipment according to the mfg. specification.* (9-1-98) *Option 3 - organic HAP chemical stripper with add-on control:* *- existing sources constructed before 9-1-95 reduce the organic HAP emissions ≥ 81%* (9-1-98) *- new sources constructed on or after 9-1-95 reduce the organic HAP ≥ 95%*
stripper,	HAP									X	*inorganic emission using*

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Identification of Performance Standards
Source Category: Aerospace Coatings [a]

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		Performance Standard				
inorganic HAP emissions						*nonchemical based equipment:* *- all sources perform stripping in an enclosed area or use a closed-cycle stripping system* (9-1-98) *- existing sources constructed before 9-1-95 2-stage dry particulate filter; bag house; or waterwash system* (9-1-98) *- new sources constructed on or before 9-1-95 3-state particulate filter or bag house*

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Identification of Performance Standards
Source Category: Aerospace Coatings [a]

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		Performance Standard									
spray application equipment transfer equipment	VOC ROC HAP	X	- HVLP electrostatic spray, or detailing gun - alternative = see exemptions	X	- electrostatic, flow, roll, dip, HVLP, hand - alternative =		- electrostatic, flow, dip, hand, HVLP or equivalent - airless for maskants and temporary protective coating,	X	- electrostatic at min 60 kV, flow coat, dip coat, hand application methods, HVLP, or - alternative 65 %		*- flow, dip, roll, brush, cotton-tipped swab, electrodeposition dip, HVLP, electrostatic spray* (9-1-98) *- alternative = electrostatic or HVLP 30 day demonstration*
control equipment, capture efficiency	VOC ROC HAP		control to an equivalent level by air pollution abatement device of at least 85 %	X	collection ≥ 90 %, by weight or output of the air pollution control device is < 50 PPM calculated as carbon with no dilution		combined capture and control 85 % by weight and approval by APCO		combined capture and control 85 % by weight and approval by APCO		add-on control system that reduces *HAP* and VOC emissions 81% overall efficiency (9-1-98)
control equipment, control efficiency	VOC ROC HAP		control to an equivalent level by air pollution abatement device of at least 85 %	X	control device efficiency at least 95 % by weight (combined 85.5 %)		combined capture and control 85 % by weight and approval by APCO				add-on control system that reduces *HAP* and VOC emissions 81% overall efficiency (9-1-98)

Table I (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
averaging or an alternative emission control plan (AECP)	VOC ROC HAP	Rule 100 AECP	Rule 108 AECP - daily RK - 24-hour average - 20 % reduction from baseline NO SOURCES	Rule 67.1 AECP - daily RK - daily compliance - 20 % reduction form baseline	no	- daily RK w/ monthly volume- weighted average of HAP and VOC - uncontrolled primer - uncontrolled topcoat - uncontrolled maskant (9-1-98)
labeling or seller information requirements	VOC ROC	label or data sheet			label or data sheet	

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Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, data	VOC ROC HAP	mfg. compliance statement via container or data sheet: - VOC g/L or #/gal - max. thinning ratio to maintain compliance w/ VOC limit - coating stripper, catalyst & reducer used - VOC content of coating & stripper	MSDS, mfg. data sheet, calculate, or test to determine VOC composition Exempts: solvent with water content 98% by weight or VOC composite pressure $\leq$ 0.1 mm Hg at 20° C or VOC with > 12 carbon atoms Rule 109	see below	label or data sheet ROC - content - ROC composite partial pressure of cleaning material - recommendated mixing with other ROC - ROC cleaning material ROC content	manufacturer data or test to determine HAP and VOC content

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Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, usage coating	VOC ROC HAP	weekly: - coating & mix ratio as applied - quantity of each coating applied	daily records: - applicable district Rule 109 - list of permit units involved using adhesives, coatings, solvents - method of application & substrate type - amount & type in each permit unit or dispensing station - VOC content - amount (including exempt compounds) used and VOC content of each -oven temperature	coating list: - uses - allowable VOC content - type and/or category - mfg. ID - mix ratio - VOC content per volume - multi-stage maskants mfg. ID of the component monthly: - materials not applied by dip coating, amount of each coating, stripper, & thinner used - material added to coating dip tanks	mfg. specification sheet such as MSDS - type - ROC g/L - mix ratio - daily volume - method of application	- name & content mass or organic HAP or VOC per volume - data, calculation, test results monthly: - volume (gal) of each coating formulation (9-1-98)

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Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, usage solvent	VOC ROC HAP	monthly: - type - amount	daily records: - applicable district Rule 109 - list of permit units involved using adhesives, coatings, solvents - method of application & substrate type - amount & type in each permit unit or dispensing station - VOC content - amount (including exempt compounds) used and VOC content of each - vapor pressure of solvents used as surface cleaners	coating list: - uses - allowable VOC content - type and/or category - mfg. ID - mix ratio - VOC content per volume of material, vapor pressure, or initial boiling point monthly: - inventory of solvents used for equipment cleaning and surface cleaning	mfg. specifications sheet - type - ROC g/L - daily volume of solvent & stripper - ROC composite partial pressure	- name of solvent - composition, data & calculation - annual volume based upon purchase records - composite vapor pressure (9-1-98)

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Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, usage stripper	VOC ROC HAP	monthly: - amount - amount added to tank-type stripper	same as solvent above	same as solvent above	same as solvent above	*chemical:* *- name* *- monthly volume of each organic HAP stripper* (9-1-98) *nonchemical:* *- name* *- type of nonchemical based equipment* (9-1-98)
recordkeeping, alternative allowed	VOC ROC HAP	yes	yes Rule 108 AECP	yes Rule 67.1 AECP	no	yes, only uncontrolled primer or topcoats or maskants

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Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, control equipment	VOC ROC HAP	daily: - coating usage - key system operating parameters	permit conditions	- same as coating, solvent & strippers above and O & M plan: - ID all key system operating parameters e.g., temperature, pressure, flow rate. - inspection schedules, anticipated ongoing maintenance, & proposed RK	daily records - key system operating and maintenance procedures which will demonstrate continuous operation & compliance - key system operating parameters	RK for carbon adsorber or other control

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Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
retention of records	VOC ROC HAP	5 years for Title V source; 2 years H&SC 42705	5 years for Title V source; 2 years H&SC 42705 Rule 109 2 years	5 years for Title V source; 2 years H&SC 42705 3 years Rule 67.9	5 years for Title V source; 2 years H&SC 42705 2 years Rule 74.13	5 years for Title V source
methylene chloride reduction plan	exempt VOC	by 1/1/95				
qualification acceptance testing progress report	VOC		6 month progress report on coatings with future compliance dates - amount used - cost			
compliance statement required	VOC ROC HAP				yes	yes

(a) performance standard is grams of volatile organic compounds (VOC) per liter, less exempt compounds, less water, applied unless otherwise indicated

(b) CTG final dated December 1997; released 3/27/98 63FR15006, effective date 9-1-98 for solvent cleaning; effective dated 9-1-99 for speciality coatings, application equipment & add-on control
NESHAP/CTG final 9/15/95 60FR45948, amended 2/9/96 61FR04903, 12/17/96 61FR66227, 3/27/98 63FR15006,
effective date 9/15/95; compliance for existing sources 9/1/98; compliance for new sources 6-6-94 or starup, (contains HAP & VOC emission limits)

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
		More stringent limits only M AQMD Rule 1118 10/28/96		More stringent limits only ICAPCD Rule 425 3/3/92 *currently under revision*		More stringent limits only SBCAPCD Rule 337 10/20/94		More stringent limits only SJUAPCD Rule 423 12/19/96		More stringent limits only SMAQMD Rule 456 9/5/96 *5/98 draft revision*	
		Performance Standard									
VOC	VOC ROC		exempts PCE	X	ROC does not exempt PCE	X	Rule 102 does not exempt PCE	X	Rule 2 does not exempt PCE		Rule 101 exempts PCE
adhesives and coating application, general solvent limit	VOC	X	reduce organic solvent or materials containing organic solvent by 85% Rule 442								
spray coating equipment, general	VOC HAP										
ablative coating	VOC			X	600					X	600
ablative coating military	VOC										
adhesive, commercial interior	VOC										
adhesive, cyanoacrylate	VOC										
adhesive, elastomeric	VOC				850						
adhesive, fuel tank	VOC							X	620		
adhesive, promotor	VOC ROC								850		890
adhesive, rocket motor bonding	VOC										

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
		More stringent limits only M AQMD Rule 1118 10/28/96		More stringent limits only ICAPCD Rule 425 3/3/92 *currently under revision*		More stringent limits only SBCAPCD Rule 337 10/20/94		More stringent limits only SJUAPCD Rule 423 12/19/96		More stringent limits only SMAQMD Rule 456 9/5/96 *5/98 draft revision*	
		Performance Standard									
adhesive, rubber-based	VOC										
adhesive, non-structural	VOC ROC	X	250					X	250		
adhesive, structural epoxy	VOC			X	50 UNDEFINED SEE SD; UNDER REVISION						
adhesive, structural autoclavable	VOC ROC	X	50	X	50			X	50		
adhesive, structural non-autoclavable	VOC ROC		700	X	250				850		
adhesive, all other	VOC										
adhesive bonding primer	VOC ROC	X	250 NO SOURCES	X	250 CURRENTLY UNDER REVISION	X	250 NO SOURCES	X	250		
adhesive bonding primer, elastomeric	VOC										
adhesive bonding primer, epoxy-phenolic (metal to honeycomb) >350°F	VOC							X	800 250 (5/1/02)		

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
adhesive bonding primer, long term metal to structural core bonding	VOC							X	250		
adhesive bonding primer, short term metal to structural core bonding	VOC								800 250 (5/1/02)		
adhesive bonding primer, decorative laminating	VOC							X	800		
adhesive bonding primer, military	VOC							X	700 250 (5/1/02)		
adhesive bonding primer, nitrile phenolic (metal to metal)	VOC							X	800 250 (5/1/02)		
adhesive bonding primer, all others	VOC			X	350 CURRENTLY UNDER REVISION						
antichafe	VOC							X	600		

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
barrier a.k.a. fastener lubricative, barrier coating	VOC ROC										
bearing	VOC										
caulking and smoothing compounds	VOC										
chemical agent-resistant (CARC)	VOC		500								
commercial exterior aerodynamic structural primer	VOC							X	650		
conformal	VOC ROC								750	X	600 available & in-use
corrosion prevention compound	VOC										
cryogenic flexible primer	VOC										
cryoprotective coating	VOC										
electric or radiation effect coating	VOC ROC		800				800		800	X	600 CHECKING IF AVAILABLE & IN USE

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
elevated temperature skydrol resistant commercial primer	VOC										
extreme performance interior coating, barrier	VOC	X	420								
fastener, <u>installation</u>, solid-film lubricant	VOC ROC							X	880		
fastener, <u>installation</u>, dry lubricative material	VOC							X	675		
fastener, <u>lubricative,</u> solid-film lubricant	VOC ROC			X	250 CURRENTLY UNDER REVISION				800		
fastener, <u>lubricative</u>, dry lubricative material	VOC ROC							X	120		
fastener, <u>lubricative</u>, barrier coating	VOC ROC							X	420		
<u>non-fastener lubricative</u>, solid film lubricant	VOC ROC			X	880			X	880	X	880
<u>non-fastener lubricative</u>, dry lubricative material	VOC ROC							X	675		

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
fastener, wet installation coating	VOC										600 wet seal primer
fire insulation coating, interior fire-resistant, civilian	VOC ROC		650			X	600		650		
fire-resistant, military	VOC	X	970								
flight-test coating, missiles or single use target	VOC ROC			X	420			X	420		
flight-test coating, all other	VOC ROC							X	600		
fuel tank coating	VOC ROC		720	X	420			X	420		
fuel tank coating, epoxy	VOC ROC							X	420		

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
fuel tank coating, rubber	VOC										
high-temperature coating, >350°F	VOC ROC		720				720			X	420 available & in-use
impact resistant	VOC ROC							X	420		
insulation covering, applied to foam insulation	VOC										
lacquer	VOC										
metallized epoxy coating	VOC										
mold release	VOC									X	*762 available & in-use proposed 1-22-98*
optical anti-reflective	VOC ROC							X	700		
part marking	VOC									X	*850 (12-31-98)*
pretreatment wash primer, 0.5% acid	VOC ROC		780			X	400 NO SOURCES		780		

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
primer	VOC ROC HAP	X	350			X	350	X	350		
primer, flexible	VOC										
primer, low solids corrosion resistant	VOC							X	650 commercial exterior aerodynamic structural primer		
primer, not resistant to phosphate esters	VOC ROC										
primer, resistant to phosphate esters	VOC ROC										
primer, compatible w/ rain resistant coating	VOC										
rain erosion-resistant	VOC ROC	X	600			X	600		800	X	600
rain erosion resistant, fluoroelastomer	VOC									X	800
rocket motor nozzle	VOC										

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
sealant	VOC ROC	X	600			X	600	X	600	X	600
sealant, extrudable/rollable/brushable	VOC										
self-priming topcoat, unicoat	VOC ROC HAP	X	420			X	420	X	420	X	420
sealant bonding primer, used before silicone sealant	VOC		720								
silicone insulation material	VOC										
scale inhibitor	VOC ROC							X	850 TYPO, WILL BE REVISED TO 880		
screen print ink	VOC										
space-vehicle, adhesive	VOC ROC							X	800		

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
space-vehicle coating, electrostatic discharge protective coating & other	VOC ROC	X	800	X	800	X	800	X	800		
space-vehicle coating, thermocontrol	VOC ROC			X	600 CURRENTLY UNDER REVISION						
space-vehicle coating, other	VOC ROC	X	1000			X	1000	X	1000	X	1000
temporary protective coating	VOC ROC	X	250	X	250	X	250	X	250	X	250
thermal control	VOC									X	600
thermal expansion release	VOC									X	*762*
topcoat, general	VOC ROC HAP		420								
topcoat, clear	VOC ROC							X	520		
topcoat, epoxy polyamide	VOC ROC										
topcoat, interior	VOC ROC	X	340			X	340				

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
topcoat, acrylic lacquer for F-111	VOC									X	780
wing	VOC ROC	X	750					X	750		
wire, electronic	VOC ROC							X	420		
wire, anti-wicking	VOC ROC							X	420		
wire, pre-bonding etchant	VOC ROC							X	420		
phosphate ester resistant ink	VOC ROC							X	925		
all other or general	VOC	X	350								
primer & topcoats, inorganic HAP emissions	HAP										
maskant, chemical processing	VOC		600 exempts PCE			X	600 does not exempt PCE				

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
maskant, chemical milling	VOC ROC HAP		622 type I 160 type II exempts PCE	X	250 does not exempt PCE CURRENTLY UNDER REVISION			X	250 does not exempt PCE		*622 type I (12-31-98)* *160 type II (12-31-98)* exempts PCE
maskant, photolithographic	VOC										
maskant, touch-up, liner-sealer	VOC										
maskant, bonding	VOC										
maskant, critical use an line sealer	VOC										
maskant, seal coat	VOC										
solvent use, surface preparation, clean up or mixing	VOC ROC HAP		≤ 45 mm Hg at 20°C or ≤ 200 g/L		≤ 200 g/L ROC or 45 mm Hg at 20°C composite VP				≤ 200 g/L or 45 mm Hg (0.87 psia) at 68°F (20°C)		proposed 2/98 ≤ 200 g/L or ≤ 45 mm Hg at 20°C

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
solvent use, storage/disposal of coating or stripper containing organic solvent	VOC ROC HAP	keep closed except during extraction or introduction of material for mixing, use or storage	- proposed 10/97 closed containers - transported to a permitted waste disposal facility in sealed metal or plastic molded drums with snap-on or screw-type lids	closed container	closed containers	-closed containers for disposal -containers closed when not in use -disposed in a manner that the VOC are not emitted into the atm
solvent use, cleaning spray equipment	VOC ROC HAP		- enclosed or sealed apparatus with 85 % of the ROC collected and properly disposed of such that they are not emitted to the atm - spray gun cleaning; enclosed gun cleaner		- enclosed system or enclosed gun washer	-except for electrostatic spray guns, shall not use VOC-containing materials for the cleaning of spray guns unless the spray gun is cleaned in an enclosed gun cleaner -proposed 2/98 spray gun nozzles may be soaked solvent-based materials for cleaning provided the container, $\leq$ 5 gallons, is keep closed except when accessing the container

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date									
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		Performance Standard									
stripper, organic	VOC ROC HAP		< 400 g/L	X	≤ 200 g/L ROC		≤ 400 g/L ROC or 10 mm Hg at actual use temperature	X	≤ 300 g/L or ≤ 9.5 mm Hg (0.18 psia) at 68°F (20°C)		
stripper, inorganic HAP emissions	HAP										
spray application equipment transfer equipment	VOC ROC HAP	X	- electrostatic, flow, dip, HVLP, electrodeposition, hand, detailing or touch-up gun - alternative =		- electrostatic, flow, dip, hand, HVLP - airless for maskants and temporary protective coating - alternative ≥ 65 %	X	- electrostatic, flow, dip, HVLP, electrodeposition, hand, detailing or touch-up guns - alternative 65 %	X	electrostatic, electrodeposition, HVLP, flow, roll, dip, brush	X	- hand, dip, flow, roll, electrodeposition, electrostatic, HVLP, LVLP - alternative =
control equipment, capture efficiency	VOC ROC HAP		≥ 85 % combined capture & control	X	proposed 10/97 ≥ 90 %	X	≥ 90 %	X	≥ 90 %	X	≥ 90 % proposed 2/98 85% overall system
control equipment, control efficiency	VOC ROC HAP		≥ 85 % combined capture & control	X	proposed 10/97 ≥ 95 %	X	≥ 95 %	X	≥ 95 %	X	≥ 95 % -proposed 2/98 85% overall system

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
averaging or an alternative emission control plan (AECP)	VOC ROC HAP	- daily RK - monthly volume weighted average - within coating class - uncontrolled only - facility-wide or process line	no	no	no	Rule 107 AECP
labeling or seller information requirements	VOC ROC	- date contents were mfg. or code - explanation if code is used - VOC content as applied -recommended thinning that does not exceed the VOC limits	proposed 10/97 - max ROC content after mixing or thinning as recommended - ROC g/L	- date or code content mfg - mfg recommendation thinning - max ROC g/L or lb/gal or VOC content		*deleted labeling req.* *added seller information req.:* *- material type by name/code/mfg* *- mixing or thinning recommendation* *- max VOC content g/L* *coating* *- max VOC as applied* *strippers, solvents:* *- VOC content g/L* *- composite vapor pressure*

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, data	VOC ROC HAP	VOC content via label, product information sheet or MSDS material list: - mfg. ID - application method - type& specific use instructions - specific mixing ratio - max. VOC content as applied (including thinning solvents) purchase records: - type & volume monthly: - exclusive coating formulations daily: - volume - VOC content - resulting VOC emissions - summarize	- list of material - name & mfg ID - mixing instruction - ROC content - weight % water - weight % exempt compounds - solvent composition & density - solids content, less water as applied	- name & mfg ID - application method - material type & specific use - max ROC content - current mfg specification sheet, MSDS, or air quality data sheet - purchase records ID type or name and volume - monthly volume, ROC content, ROC emissions of each material used - annual summary	coating mfg data listed, on label, product data sheet, or MSDS - mfg name & type - mix ration by volume - VOC - VOC less water, less exempt - volume & method of application - vapor pressure of solvents	*- list of material* *- material type name/code/mfg* *- VOC content* *- mixing ratio* *- id each material type exceeding the VOC limits of the rule* *- product information sheet provided by the seller*

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, usage coating	VOC ROC HAP	see data above	above data + - daily use - report annual of each coating amount with each application equip., method of application, amount of other solvent and exempt solvent used, ROC of each solvent, amount of ROC, solids content	see data above	data above + coatings have been specified for their intended application - adhesion promotor - antichafe coating - electric/radiation effect - fuel tank adhesive - high temperature - impact resistant - optical anti-reflective - rain erosion resistant wing	*see data above*
recordkeeping, usage solvent	VOC ROC HAP	see data above	above data - daily use - report annual of each coating amount with each application equip., method of application, amount of other solvent and exempt solvent used, ROC of each solvent	see data above	see data above	*- usage amounts monthly* *- usage amount for non-compliant material*

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
recordkeeping, usage stripper	VOC ROC HAP	see data above	see solvent above	see data above	see data above	*see usage solvent above*
recordkeeping, alternative allowed	VOC ROC HAP	no	yes	no	no	yes Rule 107 AECP
recordkeeping, control equipment	VOC ROC HAP	daily key operating & maintenance procedures		data above + daily records of key operating and maintenance procedures	daily on key operating parameters & maintenance procedures	- daily usage amount - O & M plan
retention of records	VOC ROC HAP	5 years for Title V source; 2 years H&SC 42705 5 years	5 years for Title V source; 2 years H&SC 42705 2 years	5 years for Title V source; 2 years H&SC 42705 3 years	5 years for Title V source; 2 years H&SC 42705 2 years	5 years for Title V source; 2 years H&SC 42705 3 years
methylene chloride reduction plan	exempt VOC	>				
qualification acceptance testing progress report	VOC					

Table I (2 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings [a]

Regulated Component	Pollutant	Rule/Measure/Date				
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		Performance Standard				
compliance statement required	VOC ROC HAP				yes	

[a] performance standard is grams of volatile organic compounds (VOC) per liter, less exempt compounds, less water, applied unless otherwise indicated

Table II (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings

Rule/Measure	Rule/Measure				
	BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating 12/29/95	SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96	SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97	VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96	U.S. EPA Aerospace Manufacturing and Rework Operations [(a)] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*
Exemption, general	Exempt from rule: -aerosol cans subject to Reg 8 Rule 49 - electronic components 2/3/93 - assembled printed circuit boards 2/3/93 - paper-fabric-film coating which comply with Reg. 8 Rule 12 - stencil coatings subject to Reg 8 Rule 4 - solid film lubricant Reg 8 Rule 4 - test panels subject to Reg 8 Rule 4 - satellite coating subject Reg 8 Rule 4 - Reg 8, Rule 51 Adhesives and Sealants do not apply	Exempt from rule: - aerosol coating products Exempt from VOC limit, solvent use and stripping, solvent cleaning and storage, transfer & control equipment requirements: -laboratories with R& D, Q/C and testing for production-related operations - temporary making coatings Exempt from VOC limits: - translucent coating applied on clear or transparent substrates - recoating of assembled aircraft at rework facilities if original coating formulation is used	Exempt from VOC coating limits, application equip., stripping, cleaning, maskant dip, list of compliant coating used RK, volume of coating used RK, control equip. RK : - coatings applied using non-refillable aerosol spray containers - touch-up coating and stencil coatings - prepreg composite materials Exempt from rule: - surface cleaning or stripping of aerospace components in equipment subject to 67.6 (degreasers)	Exempt from rule: - aerosol products - coating or cleaning of metal parts, including but not limited to tooling operations that are subject to Rule 74.12 Surface Coating of Metal Parts and Products	Too numerous to list all exemptions. Examples that may be appropriate that are also included in the district rules. Exempt from rule: - aerosol products - touch-up of scratched surfaces or damaged paint or maskant - touch-up of trimmed edges - R&D, Q/C, laboratory testing activities - antique aerospace vehicles *NESHAP Exemptions:* *General: 63.741* *Cleaning: 63.744* *Primer & Topcoat: 63.745* *Stripping (depainting): 63.746*

Table II (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings

Rule/Measure	Rule/Measure				
	BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating 12/29/95	SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96	SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97	VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96	U.S. EPA Aerospace Manufacturing and Rework Operations [(a)] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*
	to aerospace; Dan Belik 2/10/98 - Reg 1, section 110.3 excludes Aircraft 11/3/93 Applies only to aircraft take off and landing per Dan Belik	Exempt from VOC limits & transfer efficiency: -incidental corrosion maintenance repair coating operations at military facilities			*Chemical Milling Maskants: 63.747* CTG Exemptions: Appendix B. Model Rule
Exemption, low use facility	Exempt from weekly RK: -< 20 gallons per calendar year		Exempt from VOC coating limits, application equip., stripping, cleaning, maskant dip, list of compliant coating used RK, volume of coating used RK, control equip. RK : - coatings that are used in volumes of < 200 gallons per consecutive 12-month period of coatings provided a total of not more than 200 gallons per consecutive 12-month period of all such coatings including touch-up and stencil coatings,	Exempt from rule: - stationary sources that emit ≤ 200 pounds or ROC during any rolling period of 12 consecutive calendar months from coatings, thinners, adhesives, stripper, substrate surface preparation, application equipment cleaning, or any other solvent uses associated with coating operations (emissions from degreasing units subject to Rule 74.6.1, 74.6.2 or 74.6.3, and aerosol	

Table II (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings

Rule/Measure	Rule/Measure				
	BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating 12/29/95	SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96	SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97	VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96	U.S. EPA Aerospace Manufacturing and Rework Operations [(a)] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*
			containers, and prepreg composite - coatings used exclusively for purposes of research and development, provided that the total is $\leq$ 50 gallons per consecutive 12-month period of all such non-compliant coatings	products are not included) - aerosol products	

Table II (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings

Rule/Measure	Rule/Measure				
	BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating 12/29/95	SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96	SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97	VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96	U.S. EPA Aerospace Manufacturing and Rework Operations [(a)] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*
Exemption, low use aerospace		Exempt from VOC limit, solvent use and stripping, solvent cleaning and storage, transfer & control equipment requirements: - < 3 gallons of VOC-containing coating and solvents from aerospace assemble and component coating operation on each and every day of operation	Exempt from VOC coating limits, application equip., stripping, cleaning, maskant dip, list of compliant coating used RK, volume of coating used RK, control equip. RK : - low usage < 50 gallons per consecutive 12-month period of aerospace coating used; does not include touch-up, non-refillable aerosol spray containers, and prepreg composite Exempt from application method: - $\leq$ 1 gallon per day of aerospace coating		

Table II (1 of 2)
Identification of Performance Standards
Source Category: Aerospace Coatings

Rule/Measure	Rule/Measure				
	BAAQMD Reg. 8 Rule 29 Aerospace Vehicle Parts & Products Coating 12/29/95	SCAQMD Rule 1124 Aerospace Assembly and Component Manufacturing Operations 12/13/96	SDCAPCD Rule 67.9 Aerospace Coating Operations 4/30/97	VCAPCD Rule 74.13 Aerospace Assembly and Component Mfg. Operations 9/10/96	U.S. EPA Aerospace Manufacturing and Rework Operations [(a)] CTG implementation 9/1/98 and 9/1/99 *NESHAP limits in italics implementation 9/15/98*
Exemption, individual coating formulation	Exempt from rule: - < 20 gallons per formulation provided that the total is < 200 gallons per year	Exempt from VOC limits: - < 20 gallons per year provided that the total is < 200 gallons per year - adhesives with separate formulation < 10 gallons per year		Exempt from coating limits: - formulations < 20 gallons per calendar year, or - adhesives with separate formulations < 10 gallons per year provided that the total volume of noncomplying coatings (excluding noncomplying adhesives) used does not exceed 200 gallons annually	Exempt from HAP and VOC limits: separate formulations in volumes < 50 gallons per year subject to a maximum exemption of 200 gallons total annually

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Exemption, composition	Exempt from reg 8 rule 51: - adhesive and /or sealants products < 20 g/L of VOC	Exempt from RK: - materials that contain < 20 g/L of VOC	Exempt from list of coating used RK, volume of coating used RK, and control equipment RK: - adhesives, sealants and caulking and smoothing compounds, which have a VOC content of < 250 g/L of coating, less water and less exempt compounds Exempt from some maskant dip tank equipment requirements - ≤ 20 gallons maskant used per consecutive 12-month period - maskant VOC content ≤ 10% by weight	Exempt from transfer efficiency: - coatings with > 20 g/L ROC	*Exempt primers, topcoats, chemical milling maskants, strippers, and cleaning solvents:* *- HAP and VOC noncarcinogens < 1.0% or* *HAP and VOC carcinogens < 0.1 %* *Exempt from detailed RK primers & topcoats:* *- HAP or VOC content ≤ 250 g/L*

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Exemption, adhesive & sealants	Exempt from rule: - adhesives that comply with Reg 8 Rule 4 - high-temperature-curing adhesive bonding primer cured >325°F , application is subject to Reg 8 Rule 4 -spray application equipment with limited access due to visual impairment which require 360° spray-gun nozzle extension, waterborn extreme performance interior top coating, adhesive bonding primers and pretreatment wash primers, textured finish coating Exempt from Reg 8 Rule		Exempt from list of coating used RK, volume of coating used RK, and control equipment RK: -adhesives and sealants which are applied outside application stations required to have a district permit - also see Exemption, content		

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	51: - adhesive and /or sealants products < 20 gallons per year				
Exemption, maskant			Exempt from some maskant dip tank equipment requirements - ≤ 20 gallons maskant used per consecutive 12-month period - maskant VOC content ≤ 10% by weight		
Exemption, surface cleaning		Exempt from VOC limit, solvent use and stripping, solvent cleaning and storage, transfer (application), & control requirements: - laboratories with R& D, Q/C and testing for production-related operations - temporary making coatings	Exempt from rule: - surface cleaning or or stripping of aerospace components in equipment subject to 67.6 (degreasers)	Exempt from surface cleaning: -cleaning of aerospace assembly and subassembly surfaces that are exposed to strong oxidizers or reducers such as nitrogen tetroxiode, liquid oxygen or hydrazine	Exempt from handwipe cleaning: - R&D, Q/C, laboratory testing activities - cleaning of aerospace assembly and subassembly surfaces that are exposed to strong oxidizers or reducers such as nitrogen tetroxiode, liquid oxygen or hydrazine

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		Exempt from solvent & striping limits: - surface cleaning of solar cells, fluid systems, avionic equipment, and laser optics			*Exempt from flush cleaning:* *- semi-aqueous cleaners with $\geq$ 60 % water*
Exemption, stripper	Exempt from rule: - Tank-type stripper employing a sealing fluid at least four inches in depth which floats on the stripper surface and which consist of water or a fluid with a true vapor pressure of < 10 mm Hg (0.19 psia) at actual temperature	- see exemption surface cleaning	Exempt from rule: - surface cleaning or stripping of aerospace components in equipment subject to 67.6 (degreasers)		

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Exemption, transfer efficiency	- surface areas with limited access due to visual impairment which require 360° spray-gun nozzle extension - waterborne extreme performance interior topcoats - adhesive bonding primers and pretreatment wash primers - textured finish coat	Exempt from VOC limits & transfer efficiency: - incidental corrosion maintenance repair coating operations at military facilities Exempt from transfer efficiency: - touch-up and stencil coatings - marking coatings - airbrush operations	Exempt from application method: - air brushes with a capacity of 3 ounces or less - ≤ 1 gallon per day of aerospace coating		
Applicability, general	surface preparation and coating of aerospace components and cleanup of aerospace coating equipment aerospace component is the fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle	any operation associated with the manufacturing and assembling products for aircraft and space vehicles affected industries include commercial and military aircraft, satellite, space shuttle and rock manufacturers and their subcontractors	coating, masking, bonding, and paint stripping of aerospace components in operations where aerospace coating are used, to surface cleaning related to these aerospace coating operations, and to the cleanup of application equipment associated with these operations	manufacturing, assembling, coating, masking, bonding, paint stripping, and surface cleaning of aerospace components and the cleanup of equipment. aerospace component means any raw material, partial or completed fabricated part, assembly of	aerospace facilities that manufacture or rework of commercial, civil, or military aerospace vehicles or components CTG: that are in areas of moderate, serious, or severe nonattainment that have the potential to emit greater than or equal to

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	including aerospace prototype or test model coating, solvent evaporative loss minimization, stripper, maskant for chemical processing (includes chemical milling, anodizing, aging, bonding, plating, etching, and other chemical operations) spray application equipment, control equipment alternative	maskant applicators, aircraft refinishers, aircraft fastener manufacturers, aircraft operators, and aircraft maintenance and service facilities aerospace component is the raw material, partial or completed fabricated part, assembly or parts, or completed unit of any aircraft or space vehicle and includes integral equipment such as models, mock-ups, prototype, molds, jigs, tooling, hardware jackets, and test compounds.	aerospace component means any raw material, partial or completed fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle, including mockups, test panels and prototypes	parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes	25 tons per year of VOCs or in extreme areas that have the potential to emit greater than or equal to 10 tons per year VOCs *NESHAP: that have the potential to emit 10 tons or more of any HAP or 25 tons or more of any combination of HAP* aerospace vehicle or component means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to ariplanes, helicopters, missiles, rockets, and space vechicles.

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Applicability	adhesive, coating, maskant, cleaning & stripping	adhesive, coating, maskant, surface cleaning, equipment cleaning, stripping, fastners	adhesive, coating, maskant, surface cleaning, equipment cleaning, stripping, fastners	adhesive, coating, maskant, surface cleaning, equipment cleaning, stripping, fastners	adhesive, coating, maskant, surface cleaning, equipment cleaning, stripping, fastners
Comments	VOC does not exempt PCE	VOC exempts PCE	VOC exempts PCE	ROC does not exempt PCE	*NESHAP HAP does not exempt VOCs such as PCE, MeCl, TCA*

[a] CTG final dated December 1997; released 3/27/98 63FR15006, effective date 9-1-98 for solvent cleaning; effective dated 9-1-99 for speciality coatings, application equipment & add-on control
NESHAP/CTG final 9/15/95 60FR45948, amended 2/9/96 61FR04903, 12/17/96 61FR66227, 3/27/98 63FR15006,
effective date 9/15/95; compliance for existing sources 9/1/98; compliance for new sources 6-6-94 or starup, (contains HAP & VOC emission limits)

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Identification of Performance Standards
Source Category: Aerospace Coatings

Rule/Measure	Rule/Measure				
	MDAQMD Rule 1118 10/28/96	ICAPCD Rule 425 3/3/92	SBCAPCD Rule 337 10/20/94	SJUAPCD Rule 423 12/19/96	SMAQMD Rule 456 9/5/96 *5/98 draft revision*
Exemption, general	Exempt from rule: - hand heal aerosol cans Exempt from coating limits: - recoating of assembled aircraft at rework facilities if the original coatings formulation is used - laboratories R&D, QC, testing of production-related operations - airbrush application for stenciling, lettering or other ID markings that cover less than 20 % of the vehicle, part or product's exterior surface	Exempt from rule except for RK: - touch-up - stencil - non-refillable hand held aerosol spray cans - prepreg composite materials	Exempt from rule: - non-refillable aerosol containers with capacities of $\leq$ 18 ounces	Exempt from rule: - jet engine or rocket engine flushing operations using any solvent other than trichloroethylene Exempt from requirements and administrative requirements including RK: - laboratories R & D, QC, testing for production-related operations (subject to operational records, data and calculations as determined by the APCO) Exempt from storage requirements: - hand held aerosol cans	Exempt from rule: - non-refillable aerosol containers

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Exemption, low use facility					Exempt application equipment: - hand held spray container with non-refillable propellant canisters where total facility use is $\leq$ 10 gallons

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Identification of Performance Standards
Source Category: Aerospace Coatings

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	MDAQMD Rule 1118 10/28/96	ICAPCD Rule 425 3/3/92	SBCAPCD Rule 337 10/20/94	SJUAPCD Rule 423 12/19/96	SMAQMD Rule 456 9/5/96 *5/98 draft revision*
Exemption, low use aerospace		Exempt from coating, storage, solvent, application, control limits: ≤ 3 gallons		Exempt from requirements: ≤ 4 gallons of VOC containing products per day	Exempt from coating & stripping limits: ≤ 200 gallons per calendar year
Exemption, individual coating formulation	Exempt from rule except for RK: < 50 gallons per year provided the total volume of non-complying coatings does not exceed 200 gallons annually	Exempt from coating limits (requires request & approval of APCO): < 20 gallons per year provided that the total volume does not exceed 50 gallons annually	Exempt from coating limits: < 20 gallons per year provided that the total volume of non-complying coatings does not exceed 200 gallons annually	Exempt from coating limits: < 21 gallon on any day or 20 gallons in any year provided the APCO is notified in writing that a substitute complying coating are not available	
Exemption, composition				Exempt from storage requirements: < 20 g/L VOC	
Exemption, adhesive & sealants				separate formulations < 0.5 gallons on any day or 10 gallons in any calendar year provided the APCO is notified in writing that a substitute complying coating are not available	Exempt from rule: paper, fabric, or film adhesives regulated by Rule 460

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Exemption, maskant					
Exemption, surface cleaning					- space vehicles & space vehicle components designed to travel beyond the earth's atm - cleaning & surface activation during adhesive bonding

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Exemption, stripper					
Exemption, transfer efficiency	- touch-up & repair		- touch-up & repair		- touch-up and repair - detail guns - template - stencil - stamp - hand lettering to add designs, letters, or numbers to an aerospace component - hand held spray container with non-refillable propellant canisters where total facility use is $\leq$ 10 gallons
Applicability, general	any person who manufactures or reworks aerospace vehicles by applying or specifying the use of surface coatings for aerospace vehicles parts and products	coating, masking, surface cleaning, and paint stripping of aerospace components and the cleanup of equipment associated with these operations	any person who manufactures, applies or specifies the use of surface coating for aircraft or aerospace vehicle parts and products	manufacturing, assembling, coating, masking, bonding, paint stripping, surface cleaning, service, and maintenance of aerospace components, and the cleanup of equipment associated with these operations	coating of aerospace components including coating removal (stripping), surface preparation and cleanup operations by any person

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Applicability	adhesives, coating, maskants, cleaning solvents, strippers	adhesives, coating, masking, surface cleaning, paint stripping	adhesive, coating, maskant, stripper	adhesive, coating, maskant, fastener, surface cleaning, stripper	adhesive, coating, maskant, surface cleaning, stripper
Comments	exempts PCE	does not exempts PCE	Rule 102 does not exempt PCE	Rule 2 does not exempt PCE (ROC)	Rule 101 exempts PCE