Santa Barbara County Air Pollution Control District
BACKGROUND PAPER – March 27, 2012

REVISIONS TO

RULE 330. SURFACE COATING OF METAL PARTS AND PRODUCTS
RULE 337. SURFACE COATING OF AEROSPACE VEHICLES AND COMPONENTS
RULE 349. POLYESTER RESIN OPERATIONS
RULE 353. ADHESIVES AND SEALANTS
RULE 321. SOLVENT CLEANING MACHINES AND SOLVENT CLEANING

BACKGROUND

The Santa Barbara County Air Pollution Control District (District) proposes amendments to Rules 330, 337, 349, and 353 to implement new solvent cleaning requirements. The adoption of the new provisions will reduce reactive organic compound emissions and fulfill clean air plan commitments. Slight changes to Rule 321 are also proposed for rule consistency.

The District first adopted Rule 330 in 1979 as, "Surface Coating of Manufactured Metal Parts." In 2000, we amended Rule 330 in response to USEPA-identified deficiency items.

Rule 337 (adopted 1990) fulfilled a 1989 mandate that aircraft and aerospace coatings be controlled at the limitations outlined in the USEPA Control Techniques Guidelines for **Surface Coating of Miscellaneous Metal Parts and Products**. The last significant amendments made to Rule 337 occurred in 1994.

Rule 349 (fiberglassing operations, adopted 1993) and Rule 353 (adhesives and sealants, adopted 1999) largely follow guidelines from the California Air Resources Board (ARB).[a] The current rulemaking action creates the first amendments to Rule 349 and 353.

The U.S.EPA approved Rules 321, 330, 337, 349, and 353 for inclusion into the State Implementation Plan on May 20, 2011; June 8, 2000; February 12, 1996; January 6, 1995; and April 5, 2000; respectively.

[a] Determination of Reasonably Available Control Technology and Best Available Retrofit Control Technology for Polyester Resin Operations (1991) and Adhesives and Sealants (1998).

PROPOSED REVISIONS

Appendices A through G contain annotated proposed amended rules (PARs). Four operation-specific rules are being amended to include similar **general solvent cleaning** provisions found in Rule 321, Solvent Cleaning Machines and Solvent Cleaning (adopted September 20, 2010). This approach provides owners and operators with **general solvent cleaning** provisions within the rule specific to their operations.

The **general solvent cleaning** provisions are in three categories: 1) work practices, 2) reactive organic compound (ROC) content limits, and 3) solvent cleaning devices/methods. We are also adding rule exemptions and other provisions that parallel Rule 321 (e.g., recordkeeping, source testing, and compliance schedule).

These PARS are anticipated to prompt operators to switch to lower ROC solvents to meet lower ROC solvent content limits specified in the rules. As in Rule 321, to preclude an unintended consequence of switching over from non-toxic to toxic solvents these PARs define **solvent** to include any liquid containing any ROC or toxic air contaminant.

Staff considered provisions in other air districts rules when drafting the PARs. These included the South Coast Air Quality Management District (SC), the San Joaquin Unified Valley Air Pollution Control District (SJV), and the Ventura County APCD (VC) rules.

We also considered:

- comments from the USEPA and ARB on prior rules; and

- input from the regulated community; and
- federal policies, guidance documents, and regulations.

This rulemaking project also includes modifications to Rule 102 (Definitions) and Rule 202 (Exemptions to Rule 201). Amendments to these rules are needed for uniformity, updating, and improved rule clarity.

The District expects the proposed revisions will result in about 8 tons per year of ROC emission reduction in Santa Barbara County (on top of the 192 tons per year to be realized from Rule 321 adopted September 20, 2010). The cost-effectiveness of the amended rules range between about -$5,000 (cost saving) to $4,700 per ton of ROC reduced.

The proposed amended rules incorporate the District's Clean Air Plan's proposed control measures to attain the California ozone ambient air quality standard. These PARs provide for expeditious implementation of **every feasible measure** to reduce ozone precursor emissions.

Summarized Amendments

RULE 102, DEFINITIONS

Add:

- an **enclosed cleaning system** definition,
- an **exempt compound** definition,
- chemical names to the **fluorinated gases** definition,
- four USEPA-identified **exempt compounds** to the **reactive organic compound** definition, and
- terms common to the proposed amended rules.

RULE 202, EXEMPTIONS TO RULE 201

Replace EPA Method 24 with South Coast AQMD Method 313-91. Also make minor revisions (e.g., add rule and test method titles).

RULE 321, SOLVENT CLEANING MACHINES AND SOLVENT CLEANING

Revise the Section B.6 exemption to clarify that the exemption does not apply to solvent cleaning machines when an operation-specific rule indicates such equipment is subject to Rule 321.

RULE 330, SURFACE COATING OF METAL PARTS AND PRODUCTS

Add **Rule 321-type** exemptions, definitions, and general solvent cleaning, recordkeeping, reporting, source testing, and compliance provisions.

RULE 337, SURFACE COATING OF AEROSPACE VEHICLES AND COMPONENTS

In addition to the changes outlined for Rule 330, add:

1. Adhesive and sealant provisions; and
2. Coating categories and limits from a USEPA Control Techniques Guideline (CTG) document and a federal regulation for the source category.[1] The District is also lowering the stripper ROC limit from 400 to 300 grams per liter in response to suggestions by the ARB and the USEPA.

RULE 349, POLYESTER RESIN OPERATIONS

The changes outlined for Rule 330 were included in PAR 349. Lower polyester resin material monomer contents limits and a higher add-on control equipment overall efficiency limit were also added. These new provisions have a 24-month phase-in period to allow for product sale-through and available stock depletion. Lastly, staff made minor changes to the rule's Attachment A, "Static Method for Determination of Volatile Emissions from Polyester and Vinyl Ester Resins."

RULE 353, ADHESIVES AND SEALANTS

Amend to include **Rule 321-type** provisions like in the other rules. Add application equipment requirements and stripper use provisions. Reduce the ROC-content limit on several products.

Sources that May be Affected by the Amended Rules

These are in four general categories:

I. Sources subject to Rule 330 that surface coat (paint) metal parts and products (excludes architectural coating operations subject to Rule 323 and motor vehicle coating operations subject to Rule 339).
II. Sources subject to Rule 337 that surface coat aerospace vehicles and components (excludes electronic components, but includes aircraft adhesive and sealant surface coating).

[1] The June 2009 USEPA Technical Support Document for the San Joaquin Valley APCD, Rule 4604, Aerospace Assembly and Component Coating Operations, found the rule deficient for failing to include all of the coating categories in the CTG. Hence, to avoid a similar deficiency finding, PAR 337 includes additional categories from the CTG.

III. Any person subject to Rule 349 that owns or operates a commercial or industrial polyester resin operation.
IV. Sources subject to Rule 353 that use adhesives and sealants (includes construction contractors but not adhesives and sealants subject to the consumer product regulations).

Table 1 lists the sources that may be impacted by the amended rules.

Table 1. SOURCES THAT MAY BE AFFECTED BY THE AMENDED RULES

Company/Agency	Rule(s) the Source May be Subject to (Denoted by an "X")			
	330	337	349	353
AmRich Energy	X		X	X
Anderson Custom Boats			X	
Armelin	X		X	X
Art-Craft Paint, Incorporated		X		
Astro Aerospace		X		
Atlas, Caliente #1 and #2 Wells	X		X	X
Atlas Copco Mafi-Trench Company LLC	X			
Beatty Products			X	
BEGA/US	X			
Blair Lease #2 - Sierra Resources	X		X	X
Bob Haakenson Fiberglass			X	
C&D Zodiac		X	X	
Careaga #1	X		X	X
Careaga LA #2	X		X	X
Casmalia	X		X	X
Castillo Ross & Howe Lease	X		X	X
Channel Islands Surfboards			X	
Clark Avenue Source	X		X	X
Continental	X		X	X
Conway (Various)	X		X	X
Dos Cuadras - South County	X		X	X
E & B - South County	X		X	X
ERG Resources (Various)	X		X	X
Exxon - New Cuyama	X		X	X
Exxon - SYU Project	X		X	X
Federal Correctional Institution	X			
Forms and Surfaces			X	X
Four Seasons Biltmore	X			
Gato Ridge	X		X	X
Gilxco - Williams Holding	X		X	X
Gitte-Ten/Phoenix Energy	X		X	X
Glassaire Repair			X	
Greka (Various)	X		X	X
Harbor Marineworks			X	
Kirby Morgan Dive Systems			X	
Lundberg & Vickery	X			
Lockheed Martin - SB Focalplane	X	X		X
Lompoc Unified School District	X			
Los Flores	X		X	X
MarBorg Industries	X			
Melfred Borzall, Inc.	X			
MorningStar Surfboards			X	
Off Broadway Mineral	X		X	X
Orcutt	X		X	X
Orcutt Pump Station	X		X	X
Outer Reef			X	
Pacific Coast Energy Company	X		X	X
Pacific Operators - Carpinteria	X		X	X
Pacific Pipeline -Cuyama Pump Station	X		X	X
Panther Energy	X		X	X
Permacolor, Inc.	X			
Petroleum Solids Control - Various Loc.	X		X	X
PetroRock - Travis Lease	X		X	X
PetroRock - Tunnell Lease	X		X	X
Plains Pipeline, L.P.	X		X	X
Platform Habitat	X		X	X
Pt. Pedernales/Lompoc Oil Fields	X		X	X
Purisima Hills LLC - Blair Lease	X		X	X
Purisima Hills LLC- Barham Ranch	X		X	X
Pyramid - Delaney/Tunnel	X		X	X
Pyramid Tile			X	
Raytheon Space & Airborne Systems	X	X		X
Russell Ranch Lease	X		X	X
Santa Barbara Industrial Finishing	X			
Santa Barbara School Districts	X			
Santa Maria Pacific - Casmalia Field NW	X		X	X

Company/Agency	Rule(s) the Source May be Subject to (Denoted by an "X")			
	330	337	349	353
Santa Maria Pump Station	X		X	X
Sierra Resources, Incorporated	X		X	X
Sisquoc Pipeline	X		X	X
SMRC/Union Sugar	X		X	X
SMV East	X		X	X
So Cal Gas - La Goleta	X		X	X
Space Exploration Technologies		X		
Spaceport Systems International		X		
The Okonite Company	X			X
The Point Arguello Project	X		X	X
True Ames Fins Corporation			X	
United Launch Alliance, L.L.C		X		
University of California - Santa Barbara	X		X	X
Vandenberg Air Force Base	X	X	X	X
Venoco (Various)	X		X	X
Westmont College	X		X	X
Zaca Field	X		X	X

There are likely additional permit-exempt sources not listed in Table 1, which will also be affected by the PARs. It should be noted that although oil and gas production and process facilities appear in Table 1, industry representatives indicate the amended rules will have limited applicability and impacts to them.

EMISSION REDUCTION / COST-EFFECTIVENESS

ROC Emission Reductions

The District anticipates the ROC emission reductions from adding solvent cleaning provisions to the rules will be about 8 tons per year. Table 2 breaks down the ROC emission reductions for each of the control measures.

Table 2. ITEMIZED EMISSIONS REDUCTIONS

Rule (Control Measure)	ROC Emission Reductions (TPY)
Rule 330/337 (R-SC-2)	5.7931
Rule 349 (R-SL-5)	0.9526
Rule 353 (R-SL-9)	1.5759
Total	8.3216

Due to changes in the project, activity factors, and the inventory, the currently projected emission reductions for calendar year 2020 are about 7 percent less than those indicated in the 2010 Clean Air Plan. This difference equates to about 5 pounds per day. Irrespective of the change in the ROC emission reductions, the amended rules need to be adopted to fulfill the CAP commitment and to adopt every feasible measure.

Cost-Effectiveness

The cost-effectiveness of switching from a high-ROC solvent to a low-ROC solvent ranges between -$5,308 (savings) and $4,744 per ton of ROC reduced. And the cost-effectiveness of using an enclosed solvent cleaning system or acetone when cleaning application equipment ranges from $776 to $1,888 tons of ROC reduced.

Table 3 shows the summarized cost-effectiveness data for four scenarios.

Table 3. COST-EFFECTIVENESS DATA

Scenario	Cost Effectiveness Range (Dollars per Ton of ROC Reduced)
1. 100% replacement with aqueous solvents	-5,308 to -146 (cost savings)
2. 20% replacement with acetone, 80% replacement with aqueous solvents	418 to 699
3. 100% replacement with acetone.	-3,548 to 4,744
4. Cleaning application equipment with an enclosed gun washer or replacing an ROC solvent with acetone.	$776 to $1,888

Incremental Cost-Effectiveness

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for a regulation that identifies more than one control option to meet the same emission reduction objectives. Incremental cost-effectiveness is defined as the difference in costs divided by the difference in emission reductions between one level of control and the next more stringent level of control.

The amended rules regulate solvent cleaning. Compliance by operation modifications and the substitution of materials is expected. No alternative emission control scenario is available.

ANALYSIS OF EXISTING FEDERAL AND DISTRICT REGULATIONS

Appendix H contains the written analysis required by the California Health & Safety Code Section 40727.2 requirements.

COMMENTS AND PUBLIC MEETINGS

Comments

The District received and responded to an extensive volume of comments on the proposed amended rules during the development stages. Staff consolidated these comments and responses into Appendix I, Clarification of Rule Issues. Comments received during the formal public comment period preceding the Board adoption hearing on the proposed rule changes and staff's response to these comments will be presented to the District Board of Directors as part of the rule adoption process.

Public Meetings

SCOPING WORKSHOPS, FEBRUARY 10, 2011

Staff explained that solvent cleaning provisions, similar to those in Rule 321, were being added to each of the rules. Attendees asked if we were changing the requirements on solvents used for stripping, thinning, and solvent welding. Staff responded during the meeting that the current **as applied** limits for those operations were not being changed, only the solvent cleaning provision were being added or modified.

Industry spokespersons asked that the rule modifications:

1. Add aerospace adhesives to Rule 337 and make the Rule 353 aerospace adhesive exemption less ambiguous,
2. Include uniform definitions between the rules,
3. Provide provisions for reworking and unglueing parts, and
4. Allow isopropyl alcohol to be used as a solvent on aerospace ground support equipment.

Rulemakers considered and addressed these requests in the proposed amended rules. However, it should be noted that ARB and USEPA comments received after the Scoping Workshop recommended reducing the stripper ROC content limit from 400 to 300 grams per liter. The District has revised the project to include this change.

WORKSHOP AND COMMUNITY ADVISORY COUNCIL MEETING, AUGUST 10, 2011

The District conducted a public workshop on August 10, 2011. A number of concerns were raised at the workshop (e.g., rule clarity, scope of applicability, and need for certain rule revisions). During the subsequent Community Advisory Council (CAC) meeting, additional concerns were raised. Hence, the CAC continued the item to allow staff to develop revised rules and to provide documentation in support of the proposed rule amendments.

STAKEHOLDERS MEETINGS: DECEMBER 12, 2011, JANUARY 10, 2012, MARCH 1, 2012, AND MARCH 19, 2012

Various stakeholder meetings were conducted on these dates to convey information on the proposed rule changes and work out possible alternatives.

COMMUNITY ADVISORY COUNCIL MEETING SCHEDULED FOR APRIL 11, 2012

PUBLIC HEARING ON THE ADOPTION OF THE PROPOSED AMENDED RULES, TENTATIVELY SCHEDULED FOR JUNE 21, 2012

COMPARISON OF ADJOINING AIR POLLUTION CONTROL DISTRICT RULES

Appendix J provides a comparison of the San Joaquin Valley Air Pollution Control District (APCD), Ventura County APCD, and the San Luis Obispo County APCD rules on permit exemptions and requirements for solvent cleaning machines and solvent cleaning. Basically, there are general similarities with some minor differences between the adjoining air district rules and the proposed amended rules.

IMPACTS OF THE REVISED RULES TO INDUSTRY AND THE DISTRICT

Details of the impacts from the rule revisions are summarized in Appendix K. The rule revisions will cause impacts to the regulated community and District staff by:

1. Expanding the scope of applicability of the rules to include 1) solvent cleaning that is associated with the operation-specific rules, and 2) solvents that contain toxic air contaminants.
2. Requiring changes to the methods of operation to comply with the new solvent cleaning requirements (e.g., use of enclosed cleaning systems when performing solvent cleaning of application equipment).
3. Lowering the ROC-content limits on Rule 349 polyester resin materials and three Rule 337 coatings.
4. Increasing recordkeeping provisions.
5. Reducing solvent costs for some sources due to the use of lower-ROC content solvents.

APPENDICES[1]

Appendix A: Annotated Proposed Amended Rule 102, Definitions
Appendix B: Annotated Proposed Amended Rule 202, Exemptions to Rule 201
Appendix C: Annotated Proposed Amended Rule 321, Solvent Cleaning Machines and Solvent Cleaning
Appendix D: Annotated Proposed Amended Rule 330, Surface Coating of Metal Parts and Products
Appendix E: Annotated Proposed Amended Rule 337, Surface Coating of Aerospace Vehicles and Components
Appendix F: Annotated Proposed Amended Rule 349, Polyester Resin Operations
Appendix G: Annotated Proposed Amended Rule 353, Adhesives and Sealants
Appendix H: Identification of Existing Federal Regulations and Santa Barbara County Air Pollution Control District Regulations that Apply to the Same Equipment or Source Type Covered in Rules 330, 337, 349, and 353
Appendix I: Clarification of Rule Issues
Appendix J: Comparison of the Adjoining Air District Rules
Appendix K: Impacts from the Revised Rules

[1] These appendices are hyperlinked.

Appendix A
Santa Barbara County
Annotated Proposed Amended Rule 102, Definitions

RULE 102. DEFINITIONS. (Adopted 10/18/1971, revised 1/12/1976, readopted 10/23/1978, revised 7/11/1989, 7/10/1990, 7/30/1991, 7/18/1996, 4/17/1997, 1/21/1999, 5/20/1999, 6/19/2003, 1/20/2005, 6/19/2008, 1/15/2009, 9/20/2010, ~~and~~ 3/17/2011, and [*date of amended rule adoption*])

These definitions apply to the entire rulebook. Definitions specific to a given rule are defined in that rule or in the first rule of the relevant regulation. Except as otherwise specifically provided in these Rules where the context otherwise indicates, words used in these Rules are used in exactly the same sense as the same words are used in Division 26 of the Health and Safety Code.

[. . .]

"Aerosol Product" means a hand-held, non-refillable container that expels pressurized product by means of a propellant-induced force.

[. . .]

"Avionic Equipment" means any electronic system used on any aircraft, aerospace vehicle, satellite, or space vehicle.

[. . .]

"Capture Efficiency" means the percentage by weight of affected pollutants delivered to a control device divided by the weight of total affected pollutants generated by the source.

Comment [A1]: The term is found in proposed amended Rules 330, 337, 349, and 353. To avoid ambiguity, this definition, and other add-on control equipment definitions (e.g., **control device** and **control device efficiency**), are being added. To avoid redundancy in Rules 330, 337, 349, and 353, the District is adding the definitions to Rule 102.

[. . .]

"Carbon Adsorber" means a bed of activated carbon into which an air-solvent gas-vapor stream is routed and which adsorbs the solvent on the carbon.

[. . .]

"Catalytic Incinerator" means any device that burns reactive organic compounds or toxic air contaminants in air using a material that increases the rate of combustion without itself undergoing a net chemical change in the process. Common catalyst materials include but are not limited to, platinum alloys, chromium, copper oxide, and cobalt.

[. . .]

"Control Device" means any destruction and/or recovery equipment used to destroy or recover affected pollutant emissions generated by a regulated operation.

"Control Device Efficiency" means the percentage of affected pollutants entering a control device that is not present in the exhaust to the atmosphere of that control device.

[. . .]

"Electronic Components" means the portions of an assembly, including, but not limited to: circuit card assemblies, printed wire assemblies, printed circuit boards, soldered joints, ground wires, bus bars, magnetic tapes and tape drive mechanisms, discs and disc drive mechanisms, electro-optical devices (e.g., optical filters, sensor assemblies, infrared sensors, charged coupled devices, thermal electric coolers, and vacuum assemblies), solid state components, semiconductors (e.g., diodes, zeners, stacks, rectifiers, integrated

microcircuits, transistors, solar cells, light sensing devices, and light-emitting devices), and other electrical fixtures, except for the actual cabinet in which the components are housed.

"Electrostatic Spray" means any method of applying a spray coating in which an electrical charge is applied to the coating and the substrate is grounded. The coating is attracted to the substrate by the electrostatic potential between them.

[. . .]

"Enclosed Cleaning System" means any application equipment cleaner (e.g., an enclosed gun washer) that totally encloses spray guns, cups, nozzles, bowls, and other parts during solvent washing, rinsing, and draining procedures. An enclosed cleaning system for cleaning application equipment is not a solvent cleaning machine.

Comment [A2]: This definition is being added per requests from industry. The term appears in current Rule 321 and PARs 337 and 353. Hence, we are placing the definition in Rule 102.

[. . .]

"Exempt Compound" means any compound listed as an exempt compound in the definition of **"**Reactive Organic Compound." Tertiary-butyl acetate (also known as t-butyl acetate or tBAc) shall be considered exempt as a reactive organic compound only for purposes of reactive organic compound emissions limitations or reactive organic compound content requirements and shall be considered a reactive organic compound for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to reactive organic compounds.

Comment [A3]: Adding the **exempt compound** definition here eliminates the need to insert the same definition into other rules. The tBAc qualifier addresses EPA concerns.

[. . .]

"Fluid System" means a power transmission system that uses the force of flowing liquids and gases to transmit power. Fluid systems include hydraulic systems and pneumatic systems.

"Fluorinated Gases" means a compound that contains fluorine and exists in a gaseous state at 25 degrees Celsius and 1 atmosphere of pressure. Fluorinated gases include, but are not limited to:

1. hexafluoroethane (C_2F_6), (CFC-116),
2. octafluoropropane (C_3F_8), (PFC 218),
3. octafluorocyclopentene (C_5F_8), (PFC C-1418),
4. tetrafluoromethane (CF_4), (CFC-14),
5. trifluoromethane (CHF_3), (HFC-23),
6. difluoromethane (CH_2F_2), (HFC-32),
7. octafluorocyclobutane (c-C_4F_8), (RC 318),
8. octafuorotetrahydrofuran -(C_4F_8O),
9. hexafluoro-1,3-butadiene (C_4F_6),
10. carbon fluoride oxide (COF_2),
11. nitrogen trifluoride (NF_3), and
12. sulfur hexafluoride (SF_6).

Comment [A4]: Adding chemical names here follows the protocol used in the **exempt compound** list within the **reactive organic compound** definition.

[. . .]

"Grams of Reactive Organic Compound Per Liter of Material" means the weight of reactive organic compound per volume of material and can be calculated by the following equation:

$$\textit{Grams of reactive organic compounds per liter of material} = \frac{W_s - W_w - W_e}{V_m}$$

Where:
W_s = Weight of volatile compounds in grams
W_w = Weight of water in grams
W_e = Weight of exempt compounds in grams

V_m = Volume of material in liters

[. . .]

"High-Precision Optics" means any optical element used in an electro-optical device that is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

[. . .]

"Natural Draft Opening" means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

[. . .]

"Operating Parameter Value" means any minimum or maximum value established for a control equipment or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has continued to comply with an applicable emission limitation.

[. . .]

"Overall Efficiency" means the emission reduction, expressed as a percentage that results from the combined effect of capture and control of affected pollutants (capture efficiency multiplied by control efficiency).

[. . .]

"Photoresist Coating" means any coating applied directly to a substrate to protect surface areas when chemical milling, etching, or other chemical surface operations are performed on the substrate.

[. . .]

"**Reactive Organic Compound"** means any compound containing at least one (1) atom of carbon, except for the following exempt compounds:

1. acetone
2. ammonium carbonate
3. carbon dioxide
4. carbon monoxide
5. carbonic acid
6. dimethyl carbonate
7. ethane
8. metallic carbides or carbonates
9. methane
10. methyl acetate
11. methyl chloroform (1,1,1-trichloroethane)
12. methyl formate; $HCOOCH_3$
13. cyclic, branched, or linear completely methylated siloxane compounds
14. methylene chloride
15. parachlorobenzotrifluoride
16. perchloroethylene (tetrachloroethylene)
17. the following four classes of perfluorocarbon (PFC) compounds:

a. cyclic, branched, or linear, completely fluorinated alkanes,
b. cyclic, branched, or linear, completely fluorinated ethers with no unsaturations,
c. cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations, and
d. sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

18. propylene carbonate
19. tertiary-butyl acetate; $C_6H_{12}O_2$ ("acetic acid, 1,1-dimethylethyl ester")

Tertiary-butyl acetate (also known as t-butyl acetate or tBAc) shall be considered exempt as a reactive organic compound only for purposes of reactive organic compound emissions limitations or reactive organic compound content requirements and ~~will continue to~~ shall be considered a reactive organic compound for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to reactive organic compounds.

20. CFC-11 (trichlorofluoromethane)
21. CFC-12 (dichlorodifluoromethane)
22. CFC-113 (1,1,2-trichloro-1,2,2-trifluoroethane)
23. CFC-114 (1,2-dichloro 1,1,2,2-tetrafluoroethane)
24. CFC-115 (chloropentafluoroethane)
25. HCFC-22 (chlorodifluoromethane)
26. HCFC-31 (chlorofluoromethane)
27. HCFC-123 (1,1,1-trifluoro 2,2-dichloroethane)
28. HCFC-123a (1,2-dichloro-1,1,2-trifluoroethane)
29. HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane)
30. HCFC-141b (1,1-dichloro 1-fluoroethane)
31. HCFC-142b (1-chloro-1,1 difluoroethane)
32. HCFC-151a (1-chloro-1-fluoroethane)
33. HCFC-225ca (3,3-dichloro-1,1,1,2,2-pentafluoropropane)
34. HCFC-225cb (1,3-dichloro-1,1,2,2,3-pentafluoropropane)
35. HFC-23 (trifluoromethane)
36. HFC-32 (difluoromethane)
37. HFC-43-10mee (1,1,1,2,3,4,4,5,5,5-decafluoropentane)
38. HFC-125 (pentafluoroethane)
39. HFC-134 (1,1,2,2-tetrafluoroethane)
40. HFC-134a (1,1,1,2-tetrafluoroethane)
41. HFC-143a (1,1,1-trifluoroethane)
42. HFC-152a (1,1-difluoroethane)
43. HFC-161 (ethylfluoride)
44. HFC-227ea (1,1,1,2,3,3,3-heptafluoropropane)
45. HFC-236ea (1,1,1,2,3,3-hexafluoropropane)
46. HFC-236fa (1,1,1,3,3,3-hexafluoropropane)
47. HFC-245ca (1,1,2,2,3-pentafluoropropane)
48. HFC-245ea (1,1,2,3,3-pentafluoropropane)
49. HFC-245eb (1,1,1,2,3-pentafluoropropane)
50. HFC-245fa (1,1,1,3,3-pentafluoropropane)
51. HFC-365mfc (1,1,1,3,3-pentafluorobutane)
52. HFE-7000; n-$C_3F_7OCH_3$; (1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane)
53. HFE-7100; $(CF_3)_2CFCF_2OCH_3$; (2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane) or $C_4F_9OCH_3$; (1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane)

Comment [A5]: EPA's definition of **volatile organic compounds** in 40 CFR, Part 51.100(s) includes HFC-227ea. The same is true for the other compounds we are adding (52, 55, and 56).

524. HFE-7200; $(CF_3)_2CFCF_2OC_2H_5$; (2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane) or $C_4F_9OC_2H_5$; (1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane)

55. HFE-7300; (~~1~~) 1,1,1,2,2,3,4,5,5,5-decafluoro-3-methoxy- 4-trifluoromethyl-pentane)

56. HFE-7500; (3-ethoxy- 1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2- (trifluoromethyl) hexane)

Rule 202.D.10.l.1 requires an Authority to Construct and Permit to Operate when using more than one gallon per year per stationary source of any one of the following exempt compounds:

(6) dimethyl carbonate,	(37) HFC-43-10mee,
(12) methyl formate,	(50) HFC-245fa,
(33) HCFC-225ca,	(51) HFC-365mfc, or
(34) HCFC-225cb,	(53) HFE-7100 [$(CF_3)_2CFCF_2OCH_3$ or $C_4F_9OC_2H_5$]

Rule 202.D.10.l.2 requires an Authority to Construct and Permit to Operate when using more than one gallon per year per stationary source of: (19) tertiary-butyl acetate.

The one gallon per year per stationary source limit is a per compound limit for each compound in aggregate for the entire stationary source and includes any amounts of the compound used in mixed or diluted product.

Comment [A6]: The data is reformatted into two columns with the compound's item number added for ease of reference.

"Reactive Organic Compound Composite Partial Pressure" means the sum of the partial pressures of compounds defined as reactive organic compounds. Reactive organic compound composite pressure shall be calculated as follows:

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

Where: W_i = Weight of the "i"th reactive organic compound, in grams
W_w = Weight of water, in grams
W_e = Weight of the "e"th exempt compound, in grams
MW_i = Molecular weight of the "i"th reactive organic compound, in grams per grams-mole
MW_w = Molecular weight of water, in grams per grams-mole
MW_e = Molecular weight of the "e"th exempt compound, in grams per grams-mole
PP_c = Reactive organic compound composite partial pressure at 20 degrees Celsius, in millimeters of mercury
VP_i = Vapor pressure of the "i"th reactive organic compound at 20 degrees Celsius, in millimeters of mercury

[. . .]

"Scientific Instrument" means an instrument, including the components, assemblies, and subassemblies used in their manufacture, and associated accessories and reagents, that is used for the detection, measurement, analysis, separation, synthesis, or sequencing of various compounds.

[. . .]

"South Coast Air Quality Management District Method 303-91, "Determination of Exempt Compounds," August 1996," means the test method adopted by and in effect by the South Coast Air Quality Management District on [*date of amended rule adoption*].

"South Coast Air Quality Management District Method 313-91, ""Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry,"" June 1993," means the test method adopted by and in effect by the South Coast Air Quality Management District on [*date of amended rule adoption*].

[. . .]

"Temporary Total Enclosure" means any total enclosure that is constructed for the sole purpose of measuring the emissions from an affected source that are not delivered to an emission control device. A temporary total enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent emission capture system. A temporary total enclosure will be assumed to achieve total capture of fugitive emissions if it meets the requirements found in 40 CFR Section 63.750(g)(4) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the ~~Administrator~~Control Officer for approval of a temporary enclosure on a case-by-case basis.

"Thermal Incinerator" means any device that burns reactive organic compounds or toxic air contaminants in air by direct application of heat. Thermal incinerators are usually equipped with burners, refractory lined chambers, heat recovery equipment, and process controllers.

"Total Enclosure" means any permanent structure that is constructed around a gaseous emission source so that all gaseous pollutants emitted from the source are collected and ducted through a control device, such that 100 percent capture efficiency is achieved. There are no fugitive emissions from a total enclosure. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure shall be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. An enclosure that meets the requirements found in 40 CFR Section 63.750(g)(4) is a permanent total enclosure.

[. . .]

"Transfer Efficiency" means the ratio of the weight of coating solids adhering to the object being coated to the weight of coating solids used in the application process, expressed as a percentage.

"Waste Solvent Residue" means sludge that may contain dirt, oil, metal particles, and/or other undesirable waste products concentrated after heat distillation of solvent either in a solvent cleaning machine itself or after distillation in a separate still.

[. . .]

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Appendix B
Santa Barbara County
Annotated Proposed Amended Rule 202, Exemptions to Rule 201

RULE 202. EXEMPTIONS TO RULE 201. (Adopted 10/18/1971, revised 5/1/1972 and 6/27/1977, readopted 10/23/1978, revised 12/7/1987, 1/11/1988, 1/17/1989, 7/10/1990, 7/30/1991, 11/05/1991, 3/10/1992, 5/10/1994, 6/28/1994, 4/17/1997, 3/17/2005, 1/17/2008, 6/19/2008, 9/20/2010, 1/20/2011, and 3/17/2011, and [*date of amended rule adoption*])

[. . .]

C. Definitions

See Rule 102, Definitions, for definitions.

Comment [A7]: Including rule titles for referenced rules follows an EPA recommendation.

D. General Provisions

[. . .]

5. Temporary Equipment

[. . .]

b. the temporary equipment replaces equipment that has qualified for a breakdown pursuant to Rule 505, Breakdown Conditions.

[. . .]

6. *De minimis* Exemption

Any physical change in an existing stationary source that meets each of the requirements below is exempt. Emission increases shall be based on the uncontrolled potential to emit, less emission reductions achieved through Rule 331, Fugitive Emissions Inspection and Maintenance, and shall not be reduced (netted out) by emission reductions achieved through the removal or control of any component.

[. . .]

9. A permit shall not be required for equivalent routine replacement in whole or in part of any article, machine, equipment or other contrivance where a Permit to Operate had previously been granted under Rule 201, Permits Required, providing emissions are not increased and there is no potential for violating any ambient air quality standard. An equivalent piece of equipment has a Potential to Emit, operating design capacity or actual demonstrated capacity less than or equal to that of the original piece of equipment, and is subject to the same limitations and permit conditions as the equipment being replaced. [. . .]

10. Notwithstanding any exemption defined in this rule, no new or modified stationary source that has the potential to emit air contaminants in excess of the amounts specified shall be exempt from permit requirements: [. . .]

l. In addition, notwithstanding any exemption defined in this rule, no stationary source that has the potential to emit any air contaminants in excess of the amounts specified shall be exempt from permit requirements: [. . .]

2. more than one gallon per year of tertiary-butyl acetate; $C_6H_{12}O_2$ ("acetic acid, 1,1-dimethylethyl ester"). Tertiary-butyl acetate (also known as t-butyl acetate

or tBAc) shall be considered exempt as a reactive organic compound only for purposes of reactive organic compound emissions limitations or reactive organic compound content requirements and ~~will continue to~~ shall be considered a reactive organic compound for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to reactive organic compounds. The one gallon per year per stationary source limit for tertiary-butyl acetate is an aggregate limit for the entire stationary source and includes any amounts of the compound used in mixed or diluted product.

[. . .]

16. Notwithstanding any exemption in these rules and regulations, if the combined emissions from all construction equipment used to construct a stationary source which requires an Authority to Construct have a projected actual in excess of 25 tons of any pollutant, except carbon monoxide, in a 12 month period, the owner of the stationary source shall provide offsets as required under the provisions of Rule 804, Emission Offsets, and shall demonstrate that no ambient air quality standard would be violated.

17. No additional permit shall be required at a stationary source in the District for equipment permitted by the District for various location uses provided the following conditions are met:

[. . .]

d. The stationary source reports all uses (including the start and end dates) and associated emissions for each use under this exemption to the ~~APCD~~ District in their next annual report (or semi-annual report for Part 70 sources).

Comment [A8]: Our practice to eliminate acronyms.

[. . .]

I. Coatings Applications Equipment and Operations

[. . .]

3. Equipment used in surface coating operations provided that the total amount of coatings and solvents used does not exceed 55 gallons per year. Solvents meeting the criteria of Section U.2.b or Section U.2.c or that have a reactive organic compound content of 50 grams per liter or less, as determined by the ~~Environmental Protection Agency Reference Method 24~~South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer, do not contribute to the 55 gallons per year per stationary source limitation. However, such sources need not obtain permits for air pollution control equipment (i.e., spray booths, carbon adsorbers, incinerators, thermal oxidizers, dust collectors, etc.) unless control equipment is required by District prohibitory rules. For equipment owned or operated by a stationary source owner or operator and used as part of the stationary source operations, the 55 gallon per year exemption shall be based on the total coatings and solvents usage of all such equipment at the stationary source.

Comment [A9]: EPA recommended referring to SC Method 313 for determining ROC content of materials containing < 50 g/l.

[. . .]

U. Solvent Application Equipment and Operations

[. . .]

2. Single solvent cleaning machines, which use unheated solvent, and which:

[. . .]

c. use solvents with a reactive organic compound content of two percent or less by weight as determined by ~~Environmental Protection Agency Method 24~~ the South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

d. The liquid surface area of any solvent cleaning machine using the following solvent shall not be counted towards the 0.929 square meter (10 square feet) aggregate limit in subsection a. above:

i. any solvent that has a reactive organic compound content of 50 grams per liter or less, as determined by the ~~Environmental Protection Agency Method 24~~ South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer~~,~~; or

[. . .]

3. Wipe cleaning operations, provided that the solvents used do not exceed 55 gallons per year per stationary source and that the solvent cleaning complies with the requirements in Rule 321, Solvent Cleaning Machines and Solvent Cleaning.

To qualify for this exemption, the owner or operator shall maintain records of the amount (gallons per year) of solvents used for wipe cleaning at the stationary source for each calendar year.

These records shall be maintained on site for at least 3 years and be made available to the District on request. Thereafter, the records shall be maintained either on site or readily available for expeditious inspection and review for an additional 2 years. Solvents meeting the criteria of 2.b. or c. above or that have a reactive organic compound content of 50 grams per liter or less, as determined by the ~~Environmental Protection Agency Reference Method 24~~South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer, do not contribute to the 55 gallons per year per stationary source limitation.

[. . .]

V. Storage and Transfer Equipment and Operations

[. . .]

2. Storage of refined fuel oils with an American Petroleum Institute gravity of 40° degrees ~~API~~ or lower as determined by ASTM D-4057-06, "Standard Practice for Manual Sampling of Petroleum and Petroleum Products," ASTM International.

Comment [A10]: It is our protocol to update ASTM method numbers, add titles, and reformat the references in this manner.

[. . .]

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Appendix C
Santa Barbara County
Annotated Proposed Amended Rule 321, Solvent Cleaning Machines and Solvent Cleaning

RULE 321. SOLVENT CLEANING MACHINES AND SOLVENT CLEANING. (Adopted 2/24/1975, readopted 10/23/1978, revised 6/11/1979, 7/10/1990, 4/17/1997, 7/17/1997, 9/18/1997, ~~and~~ 9/20/2010, and [*date of amended rule adoption*])

A. Applicability

This rule shall apply to any person who owns, operates, or uses any solvent cleaning machine or performs any solvent cleaning operation outside of a solvent cleaning machine during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or in general work areas at any stationary source.

B. Exemptions

Except as otherwise specifically provided herein, the provisions of this rule shall not apply to the following:

[. . .]

6. Any equipment or operation that is subject to or specifically exempted by any of the following District rules.

   a. Rule 325, Crude Oil Production and Separation.

   b. Rule 326, Storage of Reactive Organic Compound Liquids.

   c. Rule 330, Surface Coating of Metal Parts and Products.

   d. Rule 337, Surface Coating of ~~Aircraft or~~ Aerospace Vehicles ~~Parts~~ and ~~Products~~ Components.

   e. Rule 339, Motor Vehicle and Mobile Equipment Coating Operations.

   f. Rule 343, Petroleum Storage Tank Degassing.

   g. Rule 344, Petroleum Sumps, Pits and Well Cellars.

   h. Rule 349, Polyester Resin Operations.

   i. Rule 351, Surface Coating of Wood Products.

   j. Rule 353, Adhesives and Sealants.

   k. Rule 354, Graphic Arts.

   Notwithstanding this exemption, the applicable Rule 321 requirements apply if a rule for any above process specifies a solvent cleaning machine shall comply with the applicable provisions of Rule 321.

[. . .]

Comment [A11]: Updated title.

Comment [A12]: PARs 330, 337, 349, and 353 include a section indicating Rule 321 provisions apply when using a solvent cleaning machine.

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Appendix D
Santa Barbara County
Annotated Proposed Amended Rule 330, Surface Coating of Metal Parts and Products

RULE 330. SURFACE COATING OF METAL PARTS AND PRODUCTS. (Adopted 6/11/1979, revised 7/10/1990, 7/24/1990, 11/13/1990, 4/21/1995, ~~and~~ 1/20/2000, and [*date of amended rule adoption*])

A. Applicability

This rule is applicable to any person who manufactures~~,~~ any metal part coating or metal product coating for use within the District, as well as to any person who uses, applies, or ~~specifies~~ solicits the use or application of any metal part coating, metal product ~~surface~~ coating~~s~~, or associated solvent within the District ~~for metal parts and products~~.

B. Exemptions

1. ~~The provisions of~~ Section D shall not apply to any non-complying coatings with separate formulations used in volumes of less than 20 gallons of each non-complying formulation per stationary source in any calendar year. ~~provided that~~ To qualify for this exemption from Section D, the total volume of non-complying coatings used at a stationary source ~~does~~ shall not exceed 55 gallons annually. Coatings used for operations that are exempt per Sections B.2, B.3, ~~and~~ B.4, B.5, B.10, and B.12 shall not be included in calculating the volume of coatings used under this exemption. Any person claiming this exemption shall maintain on a daily basis records consistent with Section H.6 and make them available to the District for review upon request. ~~In addition, such person shall be subject to the records required by Section H.~~

2. ~~The provisions of~~ Section ~~D~~E and H shall not apply to touch-up coatings, ~~and~~ repair coatings, and textured ~~finishes~~coatings, provided Section D limits are met and records are maintained pursuant to a Permit to Operate.

3. This ~~R~~rule shall not apply to residential non-commercial metal parts and products coating operations ~~and associated solvent cleaning~~.

4. ~~The provisions of t~~This ~~R~~rule shall not apply to the surface coating of parts or products and associated solvent ~~cleaning~~ where the only metal involved is fasteners, nails, pins, rivets, hinges, hasps, and similar devices used to hold the ~~non-metal~~nonmetal parts together and which do not constitute a substantive part of the total surface area.

5. ~~The provisions of t~~This ~~R~~rule shall not apply to coatings supplied ~~in non-refillable~~ as aerosol products in non-refillable containers ~~having capacities of 18 ounces or less~~.

6. ~~The provisions of t~~This ~~R~~rule shall not apply to the coating ~~and associated solvent cleaning~~ operations listed below, which are covered under the ~~categories~~ rules cited.

   a. ~~Aircraft or a~~Aerospace vehicle~~s~~ or component finishing or refinishing (Rule 337, Surface Coating of Aerospace Vehicles and Components), or~~,~~

   b. Automobile or truck refinishing (Rule 339, Motor Vehicle and Mobile Equipment Coating Operations), or~~,~~

   c. Marine vessel finishing or refinishing (Rule 317, Organic Solvents), or,

   d. Stationary structures (Rule 323, Architectural Coatings)~~.~~, or

Comment [A13]: Our practice is to add **for use within the District** and **uses** text to explain and narrow the scope of the rule. Adding **and associated solvent** extends the applicability to solvent cleaning. This change stems from a commitment in the 2010 Clean Air Plan (CAP).

Comment [A14]: The July 25 draft included a lead-in sentence. Workshop attendees and CAC members indicated on Aug. 10 that the wording was confusing. Hence, staff re-wrote the exemption section for improved clarity.

Comment [A15]: Our protocol is to specify requirements are on a **stationary source** basis. By adding **per stationary source**, misinterpretations that the requirements are on a **facility basis** should be avoided. See Rule 102 for definitions of **stationary source** and **facility**.

Comment [A16]: The original exemption is essentially retained in response to industry concerns. Deleting the "18 ounce or less" text is consistent with the PAR 337.B.3 exemption. The SC and VC metal coating rules do not include capacities in the "aerosol coating product" exemptions either.

Comment [A17]: Including rule titles for referenced rules follows an EPA recommendation.

e. Application of adhesives and sealants (Rule 353, Adhesives and Sealants).

7. Any coating and associated solvent ~~cleaning~~ subject to the requirements of this ~~Rule~~rule shall be exempt from the requirements of any other coating or solvent rule except Rule~~s~~ 317, Organic Solvents, and Rule 322, Metal Surface Coating Thinner and Reducer.

8. This rule shall not apply to any cleaning performed with a solvent (including emulsions) that contains two percent by weight or less of each of the following:

a. Reactive organic compounds, and

b. Toxic air contaminants (as determined by generic solvent data, solvent manufacturer's composition data or by a gas chromatography test and a mass spectrometry test).

c. Any person claiming this exemption shall maintain the records specified in Sections H.1.a and H.1.f in a manner consistent with Section H.9 and make them available for review.

Comment [A18]: Essentially the same as the Rule 321.B.1 exemption.

9. This rule shall not apply to stripping of cured coatings, cured adhesives, cured sealants, and cured inks, except the stripping of such materials from spray application equipment.

Comment [A19]: Same as the Rule 321.B.4 exemption.

10. Sections D, E, and J, shall not apply to any of the following:

a. Stencil coatings; ~~and~~

b. Safety-indicating coatings; ~~and~~

c. Magnetic data storage disk coatings; ~~and~~

d. Solid-film lubricants; ~~and~~

e. Electric-insulating and thermal-conducting coatings.

Comment [A20]: Similar to provisions in South Coast AQMD (SC) Rule 1107(f)(1) and San Joaquin Valley Unified APCD (SJV) Rule 4603.4.8.

11. Section J shall not apply to any of the following:

a. Cleaning of semiconductor and microelectromechanical devices undergoing manufacturing processes involving thin film deposition, vacuum deposition, dry etching, or metal lift-off operations; including any maintenance activities associated with such operations;

b. Cleaning of metal in electronic components;

c. Cleaning of encasements, including decoy shells or box casings, for electronic components that have a total surface area that is less than 2 square feet;

d. Cleaning of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine);

e. Cleaning of transparencies, polycarbonate, or glass substrates;

f. Cleaning of solar cells, coated optics, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, and military fluid systems;

g. Cleaning or stripping of coating overspray from personal protective equipment.

12. This rule shall not apply to coatings that contain less than 20 grams of reactive organic compound per liter (0.17 pounds of reactive organic compound per gallon) of coating, less water and less exempt compounds, as applied.

C. Definitions

See Rule 102, Definitions, for definitions not limited to this rule. For the purposes of this ~~Rule~~rule, the following definitions shall apply:

~~1.~~ **"~~Aircraft or~~ Aerospace Vehicle or Component"** means any fabricated part, processed part, assembly of parts, or completed unit of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, ~~or~~ and space vehicles includes satellites.

~~2.~~ **"Air ~~d~~Dried"** means a process whereby the coated object is cured or dried at a temperature less than 90~~°C~~ degrees Celsius (194~~°F~~ degrees Fahrenheit).

"Associated Solvent" means any solvent used in a solvent cleaning machine or ~~in~~ for solvent cleaning ~~operations subject to this rule~~ performed in association with surface coating of any metal part or product.

~~3.~~ **"Baked"** means a process whereby the coated object is heated to a temperature of 90~~°C~~ degrees Celsius (194~~°F~~ degrees Fahrenheit) or greater for the purpose of curing or drying.

"Coating" means 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. For the purposes of Rule 330, photoresist coatings are not considered to be coatings.

"Compliant Material" means any coating or solvent that has a reactive organic compound content that complies with the applicable limit in Sections D.1, D.2, D.3, or J.

"Control" means the reduction, by destruction or removal, of the amount of affected pollutants in a gas stream prior to discharge to the atmosphere.

~~4.~~ **"Detailing or Touch-up Guns"** are small air spray equipment, including air brushes, that operate at no greater than 5 ~~cfm~~ cubic feet per minute air flow and no greater than 50 pounds per square inch gauge ~~(psig)~~ air pressure and are used to coat small products or portions of products.

"Dip Coat Application" means any process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn.

"Electric-Insulating and Thermal-Conducting Coating" means a coating that displays an electrical insulation of at least 1,000 volts direct current per mil (0.001 of an inch) on a flat test plate and an average thermal conductivity of at least 0.27 British thermal units per hour-foot-degree-Fahrenheit.

"Electric-Insulating Varnish" means a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.

"Electrodeposition" means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

~~5. **"Electrostatic Application"** means using a sufficient charging of atomized paint droplets to cause deposition by electrostatic attraction. This application requires a minimum 60kV power supply.~~

Comment [A21]: The District protocol is to remove degree symbols, abbreviations, and acronyms. Hence, they are spelled out here and elsewhere.

Comment [A22]: Staff revised the definition to avoid confusion when the "associated solvent" is exempt from the rule and to expand the definition to include solvents used in solvent cleaning machines.

Comment [A23]: The term is used in 330.H.5.

Comment [A24]: The Section B.10.e exemption uses the **electric-insulating and thermal-conducting coating** term. The definition is modeled on the SC Rule 1107 definition.

Comment [A25]: This term coupled with **extreme performance coating** are replacing **industrial maintenance coating**. The **electric-insulating varnish** definition is modeled on the SC Rule 1107 definition.

Comment [A26]: Replaced by the term "electrostatic spray" and relocated it to Rule 102.

~~6. **"Exempt Organic Compounds"** means those compounds listed as exceptions in the definition of "Reactive Organic Compounds" in Rule 102.~~

"Extreme Performance Coating" means a coating used on a metal surface where the coated surface is, in its intended use, subject to the following:

a. Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions including water immersion; or

b. Repeated exposure to temperatures in excess of 250 degrees Fahrenheit; or

c. Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers, or scouring agents.

"Flow Coat Application" means any coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.

~~7.~~ **"Grams of Reactive Organic Compounds per Liter of Coating, Less Water and Less Exempt Compounds"** means the weight of reactive organic compounds per combined volume of reactive organic compounds and coating solids and can be calculated by the following equation:

$$\text{Grams of } \sout{ROC}\text{reactive organic compounds per liter of coating, less water and less exempt compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:

W_s	=	Weight of volatile compounds in grams
W_w	=	Weight of water in grams
W_{es}	=	Weight of exempt ~~organic~~ compounds in grams
V_m	=	Volume of material in liters
V_w	=	Volume of water in liters
V_{es}	=	Volume of exempt ~~organic~~ compounds in liters

~~8.~~ **"Hand Application Method"** means the application of a surface coating by manually held non-mechanically operated equipment. Such equipment includes paint brush, hand-roller, trowel, spatula, dauber, rag or sponge.

~~9. **"High Volume Low Pressure Spraying"** means using spray equipment with air pressure between 0.1 and 10.0 psi and air volume greater than 15.5 cfm per spray gun.~~

~~10. **"Industrial maintenance coating"** means high performance coatings which are formulated for the purpose of heavy abrasion, water immersion, chemical, corrosion, temperature, electrical or solvent resistance.~~

~~**"Liquid Leak"** means any coating, stripper, or solvent leak at a rate of more than three drops per minute or any visible liquid mist.~~

"Magnetic Data Storage Disk Coating" means a coating used on a metal disk which stores data magnetically.

~~11.~~ **"Metal Part or Product"** means any part, assembly of parts or completed unit fabricated in part or in total from metal.

"Non-Complying Coating" means a coating with a reactive organic compound content above a limit specified in Section D.1, 2, or 3.

"Non-Powder Coating" means any coating that is not a powder coating.

Comment [A27]: The District has replaced **exempt organic compound** with **exempt compound** in Rule 330. Also, we are adding **exempt compound** to Rule 102, Definitions.

Comment [A28]: Added "including water immersion" per Industry request at the August 10, 2011 workshop.

Comment [A29]: The definition is modeled on the SC Rule 1107 definition. This term coupled with **electric-insulating varnish** are replacing **industrial maintenance coating**.

Comment [A30]: Replaced by the term "high volume low pressure spraying equipment" and relocated it to Rule 102.

Comment [A31]: Rule 323, Architectural Coatings, uses the i**ndustrial maintenance coatings** term and ARB recommends it be deleted from Rule 330. **Extreme performance coating** and **electric-insulating varnish** are used in its place.

Comment [A32]: This term is no longer used in the rule. Hence, it should be deleted.

"Noncompliant Material" means any coating or solvent that has a reactive organic compound content that does not comply with the applicable limit in Sections D.1, D.2, D.3, or J.

Comment [A33]: The term is used in 330.H.5.

"Powder Coating" means any coating applied as fine particle solids with less than 4 percent by weight reactive organic compound or other liquid carriers.

~~**"Reactive Organic Compound"** as defined in Rule 102, Definitions.~~

~~12.~~ **"Repair Coating"** means a coating used to re-coat~~ing~~ portions of a previously coated product ~~due to~~ which has sustained mechanical damage to the coating following normal ~~painting~~ coating operations.

"Safety-Indicating Coating" means a coating which changes physical characteristics, such as color, to indicate unsafe conditions.

"Solid-Film Lubricant" means a very thin coating consisting of a binder system containing as its chief pigment material one or more of molybdenum disulfide, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

Comment [A34]: Section B.10 uses the **safety-indicating coating** and **solid-film lubricant** terms.

"Solvent" means any liquid containing any reactive organic compound or any toxic air contaminant, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, drying agent, preservative, or other similar uses.

"Solvent Cleaning" means any activity, operation, or process (including, but not limited to, surface preparation, cleanup, or wipe cleaning) performed outside of a solvent cleaning machine, that uses solvent to remove uncured adhesives, uncured coatings, uncured inks, uncured polyester resin material, uncured sealant, or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment, and general work areas. Cleaning spray equipment used for the application of coating, adhesive, ink, polyester resin material, or sealant is also considered to be solvent cleaning irrespective of the spray material being cured.

"Solvent Cleaning Machine" means any device or piece of equipment that uses solvent liquid or vapor to remove soils, moisture, or other contaminants from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, batch cold, batch vapor, in-line cold, in-line vapor, remote reservoir, and gas-path solvent cleaners. Buckets, pails, and beakers with capacities of 3.785 liters (1.00 gallon) or less are not considered solvent cleaning machines. However, the use of such a container or similar containers (e.g., hand-held spray bottles) with a liquid solvent for cleaning is considered to be solvent cleaning. Any device or piece of equipment used exclusively for stripping shall not be considered to be a solvent cleaning machine.

Comment [A35]: **Solvent, solvent cleaning,** and **solvent cleaning machine** are the same definitions found in Rule 321. **Solvent** includes any liquid containing any **toxic air contaminant.**

~~**"Stationary Source"** as defined in Rule 102, Definitions.~~

"Stencil Coating" means an ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters and/or numbers to metal parts and products.

Comment [A36]: Section B.10 uses this term.

"Texture Coating" means any coating that is applied to a metal part or product which, in its finished form, consists of discrete raised spots of the coating.

~~13.~~ **"Touch-~~u~~Up Coating"** means ~~that portion of the coating operation which is separate from the~~ a coating used to cover minor coating imperfections appearing after the main coating operation~~process but necessary to cover minor imperfections or to achieve coverage as required~~.

~~**"Touch-Up and Repair Operation"** means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.~~

~~14. **"Transfer efficiency"** means the ratio of the weight of coating solids adhering to the object being coated to the weight of coating solids used in the application process, expressed as a percentage.~~

Comment [A37]: This term has been relocated to Rule 102.

D. Requirements – Reactive Organic Compounds Limits

~~A~~ No person shall ~~not~~ apply any coating or ~~specify~~ solicit the use of any coating on any metal part or product subject to the provisions of this ~~Rule~~rule, which, as applied, ~~emits or may emit~~ contains reactive organic compounds ~~into the atmosphere~~ in excess of the following limits. These limits are expressed in grams of reactive organic compound per liter or pounds of reactive organic compound per gallon of coating, less water and less exempt ~~organic~~ compounds.

Comment [A38]: Our practice is to improve text flow by changing the sentence structure in this manner.

Comment [A39]: ARB suggested the text changes in a letter dated February 2, 1995.

1. Non-Powder Coatings except Air Dried ~~Industrial Maintenance~~ Extreme Performance Coatings and Air Dried Electric-Insulating Varnish:

Air Dried	Baked
340 grams per liter 2.8 pounds per gallon	275 grams per liter 2.3 pounds per gallon

Comment [A40]: Including **pounds per gallon** equivalents is an approach used in Rule 337.

2. Non-Powder ~~Industrial Maintenance~~ Extreme Performance Coatings and Electric-Insulating Varnish - 420 grams per liter, 3.51 pounds per gallon (when air dried)

Comment [A41]: Deleting **industrial maintenance coating** and replacement it with **extreme performance coatings** and **electric-insulating varnish** follows an ARB recommendation.

3. Powder Coatings - 50 grams per liter, 0.42 pound per gallon

4. ~~Sources~~ A person may elect to use an add-on ~~exhaust~~ control system ~~equipment to achieve~~ as an alternative to meeting the requirements ~~compliance with provisions~~ of Sections D.1, D.2, D.3, E, and J, provided ~~that the control equipment meets~~ all of the applicable requirements ~~of Sections a and b~~ below are met. ~~Such control equipment must be approved in advance by the Control Officer.~~ Any person choosing to install such control ~~equipment~~ system shall obtain an Authority to Construct from the District prior to installation.

Comment [A42]: Following other air district methods, sources may comply with the Section E (application equipment) and Section J (solvent ROC-content) provisions by using an add-on control system.

~~a. The control device shall reduce emissions from an emission collection system by at least 95 percent by weight.~~

~~b. The emission collection system which collects and transports emissions to an air pollution control device shall collect at least 90 percent by weight of the emissions generated by the sources of emissions.~~

a. The overall efficiency (the capture efficiency multiplied by the control device efficiency) of the total system shall be at least 85.5 percent, by weight. Alternatively, the control device reactive organic compound exhaust concentration shall not exceed 10 parts per million by volume as propane or other limit approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

Comment [A43]: Similar to the Rule 321.N.1 provision.

b. Combustion temperature shall be continuously monitored when operating a thermal incinerator.

c. Inlet and exhaust gas temperatures shall be continuously monitored when operating a catalytic incinerator.

d. Control device efficiency shall be continuously monitored when operating a carbon adsorber or a control device other than a thermal or catalytic incinerator.

Comment [A44]: Subsections b - d mirror Rule 353.I provisions.

e. Compliance through the use of an add-on control system shall not result in affected pollutant emissions in excess of the affected pollutant emissions that would result from compliance with Sections D.1, D.2, D.3, E, and J.

Comment [A45]: Similar to Rule 321.N.6. (**Reactive organic compound** changed to **affected pollutant** to include TACs.)

E. Requirements – Application Equipment

~~A~~No person shall ~~not~~ apply coatings subject to the provisions of this rule ~~except by using properly operated~~ unless the application is performed with equipment ~~and by~~ operating according to the manufacturers operating guidelines. In addition, except as provided in Section D.4, the application method employed shall be one of the following:

Comment [A46]: ARB suggested the addition of **according to the manufacturers operating guidelines.**

1. Electrostatic spray application, or
2. Flow coat application, or
3. Dip coat application, or
4. High volume~~,~~ low pressure spraying equipment, or
5. Electrodeposition, or
6. Hand application methods, or
7. Detailing or touch-up guns, or
8. Any other ~~coating~~ application method ~~that is demonstrated to the satisfaction of~~ approved by the Control Officer, the Air Resources Board, and the Environmental Protection Agency, ~~achieves~~ that has a coating transfer efficiency ~~at least~~ equivalent to or greater than ~~the~~ 65 percent ~~transfer~~ efficiency as ~~demonstrated by~~ measured using the test method specified in Section I.4.

F. Requirements – ~~Closed Containers~~General Operating

Any person who owns, operates, or uses any application equipment to surface coat any metal part or product shall meet the following requirements:

1. All reactive organic compounds-containing materials, used or unused, including, but not limited to, surface coatings, thinners, cleanup solvents, or surface preparation materials shall be stored and disposed of in ~~closed~~ nonabsorbent and nonleaking containers equipped with tight-fitting covers. All covers shall be in place unless adding material to or removing material from the containers, ~~and opened only during extraction or introduction of material for mixing, use or storage~~ the containers are empty, or doing maintenance/inspection of the containers. ~~After distillation recovery of solvent, waste solvent residues shall not contain more than 20 percent of reactive organic compound by weight as determined by the test method specified in Section I.7.~~

2. All application equipment, ventilation system, and emission control equipment shall be installed, operated, and maintained consistent with the manufacturer's specifications.

3. Waste solvent, waste solvent residues, and any other waste material that contains reactive organic compounds shall be disposed of by one of the following methods: ~~All containers holding surface coating or solvent shall be free of liquid leaks. All application equipment, solvent distillation units, and gun washers shall not have any liquid leaks, visible tears, holes, or cracks. Any such liquid leak, visible tear, hole, or crack is a violation of this rule.~~

   ~~Any liquid leak, visible tear, hole, or crack that is detected shall be repaired within one day from discovery, or the equipment shall be drained of all surface coating or solvent, consistent with Section F.1 provisions, and shut down until replaced or repaired. Application equipment, solvent distillation units, and gun washers shall not be operated when leaking.~~

   a. A commercial waste solvent reclamation service licensed by the State of California.

b. At a facility that is federally or state licensed to treat, store or dispose of such waste.

c. Recycling in conformance with Section 25143.2 of the California Health and Safety Code.

4. All covers, valves, drain plugs, and other closure devices designed to reduce surface coating or solvent evaporation shall not be removed or opened except to process work or to perform monitoring, inspections, maintenance, or repairs that require the removal of the covers or other closure devices.

5. Any surface coating or solvent spills shall be wiped up immediately and the used absorbent material (e.g., cloth, paper, sand, sawdust, etc.) shall be stored in closed containers that are handled in accordance with Section F.1.

6. The handling and transfer of coatings and cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent coatings and cleaning solvents shall be conducted in such a manner to minimize spills.

Comment [A47]: The **housekeeping** provisions are similar to requirements found in Rule 321.D.

7. ~~Any storage of any compound~~ Containers used to store coating, solvent, or any waste material that contains reactive organic compounds subject to this rule shall be marked or clearly labeled indicating the name of the material they contain~~only be done in containers that meet the labeling requirements of Section G~~.

G. Requirements — Manufacturer Labeling

1. Each container of any coating subject to this rule shall display the date on which the contents were manufactured or a code indicating the date of manufacture. Each manufacturer of such coatings shall file with the Control Officer and the Executive Officer of the California Air Resources Board, an explanation of each code.

2. Each container of any coating subject to this rule shall display a statement of the manufacturer's recommendation regarding thinning of the coating. This recommendation shall not apply to the thinning of coatings with water. The recommendation shall specify that the coating is to be employed without thinning or diluting under normal environmental and application conditions unless any thinning recommended on the label for normal environmental and application conditions does not cause a coating to exceed its applicable standard for reactive organic compound content.

Comment [A48]: Adding **for reactive organic compound content** follows an ARB recommendation.

3. Each container of any coating subject to this rule shall display the maximum reactive organic compound content of the coating, as applied, and after any thinning as recommended by the manufacturer. Reactive organic compound content shall be displayed as grams of reactive organic compounds per liter or pounds of reactive organic compound per gallon of coating, less water and less exempt ~~solvents~~compounds. The volatile organic compound content may be displayed instead of the reactive organic compound content as long as the manufacturer's definition of volatile organic compound is consistent with the definition of reactive organic compound contained in District Rule 102, Definitions. Reactive organic compound content displayed may be calculated using product formulation data and the formula in Section C, or may be determined using the test method in Section ~~H~~I.1.

Comment [A49]: Inserting **and the formula in Section C** follows an ARB suggestion relative to Rule 337 (letter dated February 2, 1995).

H. Requirements – Recordkeeping

Any ~~Persons~~ person subject to this ~~Rule~~rule shall comply with the following requirements. Any owner or operator of any stationary source comprised of more than one facility may comply with the following requirements on a facility basis.

1. Maintain a current ~~listing~~file of all reactive organic compound-containing materials in use at the stationary source subject to this ~~Rule~~rule. The file shall provide all of the data necessary to evaluate compliance and shall include the following information, as applicable:

   a. material name and manufacturer identification (e.g., brand name, stock identification number);

   b. application method;

   c. material type (~~i.e.~~ e.g., air dried or baked enamel, powder coating, ~~industrial maintenance~~ extreme performance coating, cleanup solvent, etc.), type operation (e.g., coating, stripping, or solvent cleaning), and, for non-powder coating operations, the drying method and equipment coated;

   d. specific mixing ~~ratio~~data (e.g., component volumes or weights) of each component for each batch sufficient to determine the mixture's reactive organic compound content;

   e. the corresponding reactive organic compound content limit from Sections D.1, D.2, D.3 and J.1 and the ~~maximum~~ actual as applied reactive organic compound content of ~~each~~ the materials used~~, less water and less exempt compounds (including thinning solvents)~~; and

   f. current coating and solvent manufacturer specification sheets, Material Safety Data Sheets, product data sheets, or air quality data sheets, which list the reactive organic compound content of each material in use at the stationary source subject to this rule. Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container.

2. ~~For each industrial maintenance coating, a list of each part or product coated on a monthly basis.~~[Reserved]

~~3. Current coating manufacturer specification sheets, Material Safety Data Sheets or current air quality data sheets, which list the reactive organic compounds content of each material in use at their facility, shall be available for review on site.~~

~~4~~3. Maintain ~~purchase~~ records ~~identifying the type or name and the volume of material purchased~~ for each reactive organic compound~~s~~-containing material~~.~~ purchased for use at the stationary source. The records shall include, but not be limited to, the following:

   a. material name and manufacturer identification (e.g., brand name, stock identification number); and

   b. material type (e.g., air dried or baked enamel, powder coating, extreme performance coating, cleanup solvent, etc.)~~:~~.

   ~~c. volume of material purchased;~~

   ~~d. date of purchase; and~~

   ~~e. receipts of each purchase.~~

Comment [A50]: The District added this in response to an Industry comment received during the Aug. 10, 2011 workshop.

Comment [A51]: Our protocol is to specify requirements are on a **stationary source** basis. By adding **in use at the stationary source**, misinterpretations that the requirements are on a **facility basis** should be avoided.

Comment [A52]: Essentially the same text found in Rule 353.O.1.

Comment [A53]: Added in response to a comment by VAFB.

Comment [A54]: We decided to obtain information on the coating categories and equipment coated in 330.H.1.c and make this Section reserved.

Comment [A55]: Moved to 330.H.1.f.

4. Maintain records of the disposal method ~~of disposal~~ each time waste solvent, ~~or~~ waste solvent residue, or other waste material that contain reactive organic compounds is removed from the stationary source for disposal.

5. ~~Maintain~~ For each material maintained in response to Section H.1.a, maintain, at a minimum, on a monthly basis for compliant material and on a daily basis for noncompliant material, a record of the following:

   a. volume used (gallons per day, gallons per month)~~,~~;

   b. reactive organic compound~~s~~ content (grams per liter or pounds per gallon); and

   c. ~~and~~ resulting reactive organic compound emissions (pounds per day, pounds per month) ~~of each reactive organic compounds containing material used~~.

   ~~For permitted facilities stationary sources and users of non-compliant coatings, all records required by this Subsection and Subsection Section H.1 shall be summarized for each calendar year and submitted to the District by March 1 of the following year. The annual report shall include the name and address of the Permittee, the Permit to Operate number that the coating and solvent cleaning is subject to (if permitted), and/or a statement that the annual report includes non-compliant coating usage information.~~

6. ~~Operators of facilities that use non-compliant coating materials that do not achieve compliance through the operation of emission control equipment shall maintain daily records of the volumes of non-compliant coating materials used. In addition, operators claiming the Section B.1 exemption shall maintain~~Any person claiming an exemption under the Section B.1 shall maintain:

   a. Daily records of the volumes in gallons of non-~~compliant~~complying coating materials used by each separate formulation at the stationary source.

   b. Annual running totals, from January 1 of each calendar year, of the volume in gallons of non-~~compliant~~ complying coating materials used at the stationary source for:

      1) Each separate formulation.

      2) All formulations.

7. ~~Operators of facilities~~ For any stationary source that uses ~~non-compliant coating materials with compliance achieved through the operation of~~ emission control equipment as an alternative to meeting the requirements of Sections D.1, D.2, D.3, E, or J, ~~shall maintain~~ daily records of key operating parameter values and maintenance procedures ~~which~~ that demonstrate continuous operation and compliance of the emission control ~~device~~ system during periods of emission producing activities shall be maintained. These parameters shall include, but not be limited to:

   a. Hours of operation;

   b. All maintenance work that requires the emission control system to be shut down; and

   c. All information needed to demonstrate continuous compliance with Section D.4, such as temperatures, pressures, and/or flow rates.

8. ~~If an operator or District staff discovers a liquid leak in a container holding surface coating or solvent, or a liquid leak, visible tear, hole, or crack in application equipment, a solvent distillation unit, or in a gun washer, the operator shall record:~~

Comment [A56]: Revised to show "Section H.1.a" to exclude MSDSs per clarification request received during the August 10, 2011 workshop.

Comment [A57]: The daily recordkeeping provision was added for consistency with the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies."

Comment [A58]: Moved the annual reporting requirements to Section L per industry suggestion.

Comment [A59]: Subsections a - c are from Rule 321.R.1.c.

~~a. the date of discovery;~~

~~b. the corrective action taken; and~~

~~c. the date of repair or equipment replacement.~~

~~9.~~ ~~All~~ Any records required ~~by~~ to be maintained pursuant to this rule shall be kept on site for at least 2 years unless a longer retention period is otherwise required by state or federal regulation(s). Such records shall be readily available for ~~expeditious~~ ~~shall be retained and available for~~ inspection ~~by the Control Officer or designated representative upon request for the previous 36-month period~~ and review by the District.

Comment [A60]: During the CAC meeting on August 10, 2011, a concern about the need to maintain records for 5 years was raised. Staff discovered that EPA had modified its 5 year recordkeeping policy. Hence, per the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies," 2 years record retention is acceptable for sources not subject to Title V permitting or a MACT standard.

I. Requirements – Compliance Provisions and Test Methods

1. Coatings and solvent reactive organic compound content shall be ~~determined~~ measured ~~using~~ by the Environmental Protection Agency Reference Method 24, ~~or~~ its constituent methods, or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer. The determination of exempt compounds shall be performed in accordance with ASTM D 4457-1991, "Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph," ASTM International. Alternatively, determination of exempt compounds may be performed in accordance with the South Coast Air Quality Management District Method 303-91, "Determination of Exempt Compounds," August 1996. The reactive organic compound content of materials containing 50 grams of reactive organic compound per liter or less shall be determined by the South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

Comment [A61]: EPA recommended referring to SC Method 313 for determining ROC content of materials containing < 50 g/l.

2. ~~Compliance with Section D.4.a~~ The control device efficiency for reactive organic compound emissions shall be determined by ~~using Air Resources Board Method 100 or~~ Environmental Protection Agency Methods ~~18,~~ 25, ~~or~~ 25A, the South Coast Air Quality Management District Method 25.1, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon," February 1991, or the South Coast Air Quality Management District Method 25.3, "Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources," March 2000, as applicable. Environmental Protection Agency Test Method 18 or Air Resources Board Method 422, "Exempt Halogenated VOCs in Gases," September 12, 1990, shall be used to determine emissions of exempt compounds.

Comment [A62]: EPA recommended that this provision mirror the SC Rule 1122(h)(7)(B) text.

3. ~~Compliance with Section D.4.b~~ The capture efficiency for reactive organic compound emissions shall be determined ~~according to~~ by verifying the use of a Permanent Total Enclosure and 100 percent capture efficiency as defined by Environmental Protection Agency Method 204 ~~and 204A-F.~~, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if an Environmental Protection Agency Method 204 defined Permanent Total Enclosure is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the Environmental Protection Agency technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the Environmental Protection Agency technical guidelines shall be determined by:

   a. The Temporary Total Enclosure approach of Environmental Protection Agency Methods 204 through 204F; or

   b. The South Coast Air Quality Management District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency," May 1995.

Comment [A63]: EPA recommended that the District model the provisions on SC Rule 1122(h)(7)(A) text.

4. ~~Compliance with Section E.8~~ Application equipment coating transfer efficiencies shall be ~~determined~~ measured using South Coast Air Quality Management District Method "Spray Equipment Transfer Efficiency Test Procedure of Equipment User," May ~~24,~~ 1989.

5. The control device efficiency for toxic air contaminant emissions that are not reactive organic compounds shall be determined using:

   a. an Environmental Protection Agency approved test method or methods, or

   b. in the case where there is no Environmental Protection Agency approved test method, a District approved detection method applicable for each target toxics specie.

   c. the Control Officer may require more than one test method on any emission control device where necessary to demonstrate that the overall efficiency is at least 85.5 percent by weight in reducing emissions of reactive organic compounds and/or toxic air contaminants. Any technique to convert "parts per million by volume" test method results to either 1) "parts per million by weight," or 2) "mass emission rates" (e.g., pounds per hour) shall first be approved by the Control Officer and, if such approval is not provided, then the technique shall not be used to show compliance with this rule.

Comment [A64]: Essentially the same as Rule 321.P.4 provisions.

6. The capture efficiency for toxic air contaminant emissions that are not reactive organic compounds shall be determined by using the methods described in Section I.3 modified in a manner approved by the District to quantify the mass of liquid or gaseous reactive organic compounds and/or toxic air contaminants.

Comment [A65]: Similar to the Rule 321.P.3 requirements.

7. ~~Solvent waste residue reactive organic compound content shall be determined by using Environmental Protection Agency Reference Method 25D or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer. [Reserved]~~Emissions of reactive organic compounds from the exhaust of an emission control system shall be measured by the Environmental Protection Agency Method 25, in combination with Environmental Protection Agency Method 18 or the California Air Resources Board Method 422, "Exempt Halogenated VOCs in Gases," September 12, 1990 (to determine emissions of exempt compounds).

8. When more than one test method or set of test methods are specified for any testing, a test result showing an exceedance of any limit of this rule shall constitute a rule violation.

Comment [A66]: Added per the EPA recommendation in the Technical Support Document for SJV Rule 4605 (June 2009).

9. The Environmental Protection Agency test methods in effect on [*date of amended rule adoption*] shall be the test methods used to meet the requirements of this rule.

J. Requirements – Solvent Cleaning Associated with Surface Coating of Metal Parts and Products

Comment [A67]: Section J stems from similar **solvent cleaning** provisions in Rule 321.M.

Section J requirements shall apply to any person performing solvent cleaning associated with surface coating of metal parts and products, including, but not limited to, use of wipe cleaning cloths, hand-held spray bottles, squirt bottles, aerosol products, and the cleaning of application equipment. The following requirements become effective [*one year from the date of amended rule adoption*] and are in addition to the general operating requirements specified in Section F.

1. **Solvent Requirements**

   Except when using an emission control system that meets the requirements of Section D.4, no person shall use any solvent to perform solvent cleaning which exceeds the applicable grams of reactive organic compound per liter of material limit specified in Table 330-1.

Table 330-1: Reactive Organic Compound Content Limits for Solvent Cleaning Associated with Surface Coating of Metal Parts and Products

SOLVENT CLEANING ACTIVITY	ROC Limit, grams of ROC per liter of material (pounds of ROC per gallon of material)
(a) Metal Parts and Products Surface Preparation for Coating Application	25 (0.21)
(b) Cleaning of Coatings Application Equipment	25 (0.21)

Comment [A68]: Both ARB and EPA recommend a 25 g/l limit on the solvent's ROC content.

K. Compliance Schedule

~~Except for Section J requirements, the provisions of this rule are effective on [*date of amended rule adoption*]. Any person subject to this rule shall comply with the Section J requirements by [*one year from the date of amended rule adoption*].~~

Any person who owns, operates, or uses any application equipment to surface coat any metal part or product shall meet the following compliance schedule:

1. By [*30 days from the date of amended rule adoption*], comply with Section F, Requirements - General Operating.

2. By [*six months from the date of amended rule adoption*], comply with the recordkeeping provisions in the following Sections:

   a. H.1.d - mixing volume data,

   b. H.1.e - reactive organic compound content data,

   c. H.3 - purchase records,

   d. H.4 - waste disposal records, and

   e. H.5 - daily records for noncompliant materials.

3. By [*one year from the date of amended rule adoption*], comply with the Section J and Section M requirements.

4. By [*date of amended rule adoption*], comply with all other provisions of this rule.

Comment [A69]: The compliance schedule provision was expanded in response to a request from Industry.

L. Reporting Requirements

Submittal of an annual report to the District is required if:

- A person holds a permit for equipment subject to the requirements of this rule, or
- A person is subject to the requirements of this rule and applies non-complying coatings.

The annual report shall be submitted to the District by March 1 and it shall contain the following information for the previous calendar year:

1. monthly records required by Section H.5,

2. annual totals (gallons) based on each of the coating's and solvent's monthly data,

3. if claiming the Rule 330.B.1 exemption, annual totals (gallons) of non-complying coatings for each separate formulation and all formulations, per Section H.6.b, and

4. if permitted, name and address of the company or agency, and the Permit to Operate number that the surface coating equipment is subject to.

M. Requirements - Solvent Cleaning Machine

Any person who owns, operates, or uses any solvent cleaning machine shall comply with the applicable provisions of Rule 321, Solvent Cleaning Machines and Solvent Cleaning.

Comment [A70]: The annual report provision was relocated from Section H.5 to a stand-alone section per an Industry suggestion.

Comment [A71]: Added to clarify that Rule 321 provisions apply to solvent cleaning machines when used in conjunction with surface coating of metal parts and products.

Click here to return to the list of Appendices in the Background Paper.

Appendix E
Santa Barbara County
Annotated Proposed Amended Rule 337, Surface Coating of Aerospace Vehicles and Components

RULE 337. SURFACE COATING OF ~~AIRCRAFT OR~~ AEROSPACE VEHICLES ~~PARTS~~ AND ~~PRODUCTS~~COMPONENTS. (Adopted 7/10/1990, revised 7/24/1990, ~~and~~ 10/20/1994, and [*date of amended rule adoption*])

A. Applicability

This rule is applicable to any person who manufactures~~,~~ any aerospace vehicle coating or aerospace component coating for use within the District, as well as any person who uses, applies, or ~~specifies~~ solicits the use or application of any aerospace vehicle or component ~~surface~~ coatings or associated solvent within the District~~for aircraft or aerospace vehicle parts and products~~. Rule 337 does not apply to electronic components.

B. Exemptions

1. ~~The provisions of~~ Section D.1 shall not apply to any non-complying coatings with separate formulations used in volumes of less than 20 gallons of each non-complying formulation per stationary source in any calendar year. ~~provided that~~ To qualify for this exemption from Section D.1, the total volume of non-complying coatings used at a stationary source does not exceed 200 gallons annually. Coatings used for operations that are exempt per Sections B.2, ~~and~~ B.3, B.6, B.8, B.11, B.12, and B.13 shall not be included in calculating the volume of coatings used under this exemption. Any person claiming this exemption shall maintain on a ~~monthly~~ daily basis ~~an annual running total of the volume of each separate formulation of coating used under this exemption~~ records consistent with Section H.7 and make them available to the District for review upon request. ~~These coatings shall be subject to the records required by Section H.~~

2. ~~The provisions of~~ Section E~~.~~ and H shall not apply to touch-up and repair, provided Section D.1 limits are met and records are maintained pursuant to a Permit to Operate.

3. The provisions of this rule shall not apply to coatings (including adhesive products and sealant products) supplied ~~in non-refillable~~ as aerosol products in non-refillable containers ~~with capacities of 18 ounces or less.~~

4. Any coating and associated solvent ~~cleaning~~ subject to the requirements of this rule shall be exempt from the requirements of Rule 317, Organic Solvents, and Rule 322, Metal Surface Coating Thinner and Reducer. Any coating exempt from this rule shall comply with all other applicable District Rules.

5. This rule shall not apply to any cleaning performed with a solvent (including emulsions) that contains two percent by weight or less of each of the following:

   a. Reactive organic compounds, and

   b. Toxic air contaminants (as determined by generic solvent data, solvent manufacturer's composition data or by a gas chromatography test and a mass spectrometry test).

   c. Any person claiming this exemption shall maintain the records specified in Sections H.1.a and H.1.f in a manner consistent with Section H.9 and make them available for review.

Comment [A72]: Under the proposed amended definitions, **aircraft** is synonymous with **aerospace vehicle**.

Comment [A73]: Our practice is to add **for use within the District** and **uses** text to explain and narrow the scope of the rule. Adding **or associated solvent** extends the applicability to solvent cleaning. This change stems from a commitment in the 2010 Clean Air Plan.

Comment [A74]: The last sentence is added for ease of understanding that surface coating of **electronic components** is not subject to Rule 337. This **applicability** approach follows the EPA guideline (EPA-453/R-97-004) for this source category. Rule 321 governs the cleaning of electronic components.

Comment [A75]: The July 25 draft included a lead-in sentence. Workshop attendees and CAC members indicated on Aug. 10 that the wording was confusing. Hence, staff re-wrote the exemption section for improved clarity.

Comment [A76]: Our protocol is to specify requirements are on a **stationary source** basis. By adding **per stationary source**, misinterpretations that the requirements are on a **facility basis** should be avoided.

Comment [A77]: EPA recommends daily recordkeeping when using noncompliant coatings. (Ref. EPA's Rule 337 Technical Support Document dated Sept. 20, 1995.)

Comment [A78]: Changed PAR to keep original total rule exemption. This approach is consistent with the 1997 CTG for coating operations at aerospace manufacturing and rework operation. SC Rule 1124(l)(5) and VC Rule 74.13.E.6,also have a similar exemption.

Comment [A79]: Including rule titles for referenced rules follows an EPA recommendation.

Comment [A80]: Essentially the same as the Rule 321.B.1 exemption.

6. This rule shall not apply to coatings that contain less than 20 grams of reactive organic compound per liter (0.17 pounds of reactive organic compound per gallon) of coating, less water and less exempt compounds, as applied.

7. Section D.2 and J.1.a shall not apply to solvents and strippers used in space vehicle manufacturing and rework.

8. This rule shall not apply to chemical milling, metal finishing, and electrodeposition (except for electrodeposition of coatings).

9. Section J.1.a shall not apply to any of the following:

   a. Cleaning of encasements, including decoy shells or box casings, for electronic components that have a total surface area that is less than 2 square feet; ~~and~~

   b. Cleaning of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine); ~~and~~

   c. Cleaning of aircraft transparencies, polycarbonate, or glass substrates; ~~and~~

   d. Cleaning of solar cells, coated optics, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, avionic equipment, military fluid systems, and thermal control surfaces~~.~~;

   e. Wipe cleaning during the manufacture, assembly, installation, maintenance, or testing of components of breathing oxygen systems that are exposed to the breathing oxygen;

   f. Wipe cleaning and surface activation prior to adhesive bonding;

   g. Wipe cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems;

   h. Wipe cleaning of fuel cells, fuel tanks, and confined spaces.

10. Section E shall not apply to any of the following:

    a. Any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces; ~~and~~

    b. The use of airbrush application methods for stenciling, lettering, and other identification markings.

11. The chemical milling maskant limits in Section D.1, Table 337-1, shall not apply to any of the following:

    a. Touch-up of scratched surfaces or damaged maskant; ~~and~~

    b. Touch-up of trimmed edges.

12. Section D.1 shall not apply to electric- and radiation-effect coatings that have been designated as "classified" by the United States Department of Defense.

13. This rule shall not apply to coatings (including adhesive products and sealant products) subject to the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.

Comment [A81]: Changed the text to apply to all qualifying coatings. Exempting low ROC paints is similar to the SC Rule 1124(l)(13) exemption. Exempting low ROC adhesives and sealants is consistent with PAR 353.B.7.

Comment [A82]: Modeled on the SC Rule 1124(l)(4) exemption.

Comment [A83]: Based on the 40 CFR Section 63.741(f) exemption.

Comment [A84]: Similar to the Ventura County APCD (VC) Rule 74.13.C.3 exemption.

Comment [A85]: Stems from the 40 CFR Section 63.744(e)(10) exemption.

Comment [A86]: Added 337..a and d at the suggestion of Raytheon's Sherri Wentz. Staff also added definitions for in Rule 102 for avionic equipment, fluid system, high-precision optics, and scientific instruments.

Comment [A87]: 337.B.9.e - h are modeled on exemptions found in 40 CFR Section 63.744(e).

Comment [A88]: Similar to the SC Rule 1124(l)(14) exemption.

Comment [A89]: Modeled on the SC 1124(l)(11) provision.

Comment [A90]: Follows 40 CFR Section 63.747(c)(3)(i) and (ii) exemptions.

Comment [A91]: Stems from 40 CFR 63, Subpart GG, Appendix A's definition of **electric or radiation-effect coating**.

Comment [A92]: Modeled on the South Coast AQMD (SC) Rule 1124(l)(15) and 1168(j)(13) exemptions. This exemption is needed for consistency with the Rule 353.B.12 exemption.

14. Sections D.2 and J.1.a shall not apply to any of the following:

a. Cleaning or stripping of coating overspray from personal protective equipment;

b. Wipe cleaning or stripping during fabrication, assembly, installation, and maintenance of upholstery, curtains, carpet, and other textile materials used in the interior of the aircraft;

c. Wipe cleaning or stripping of metallic and nonmetallic materials used in honeycomb cores during the manufacture or maintenance of these cores, and cleaning of the completed cores used in the manufacture of aerospace vehicles or components.

Comment [A93]: 14.a added at the request of a stakeholder. 14.b and c are modeled on exemptions found in 40 CFR Section 63.744(e).

C. Definitions

See Rule 102, Definitions, for definitions not ~~restricted to interpretation of~~ limited to this rule. ~~Definitions specific to this rule are listed below.~~ For purposes of this rule, the following definitions shall apply:

Comment [A94]: Our protocol is to change the lead-in sentences in this manner.

Comment [A95]: Most of the proposed new definitions are from 40 CFR 63, Subpart GG or the EPA Control Techniques Guideline (CTG) for this source category (EPA-453/R-97-004, Dec. 1997).

"Ablative Coating" means any coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

"Adhesion Promoter" means any very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

"Adhesive" means any substance that is used to bond one surface to another surface by attachment or fused union. Adhesives are a type of specialty coating.

Comment [A96]: Same as the Rule 353 "Adhesive" definition.

Comment [A97]: Added for ease of understanding the relationship between **adhesive** and **specialty coating**.

~~1.~~ **"Adhesive Bonding Primer"** means any ~~coating~~ primer applied in a ~~very~~ thin film to ~~aircraft or~~ aerospace ~~parts or products~~ components for the ~~primary~~ purpose of ~~providing a primer for a subsequent coat of structural adhesive~~ corrosion inhibition and increased adhesive bond strength by attachment.

"Adhesive Product" means any adhesive, glue, cement, mastic, adhesive bonding primer, adhesive primer, adhesive primer for plastics, and any other adhesive primer. Adhesive products are a type of coating.

"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 airplanes, helicopters, missiles, rockets, and space vehicles includes satellites.

~~2. **"Aircraft or Aerospace Vehicle"** means a fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle.~~

Comment [A98]: The term is replaced by **aerospace vehicle or components**.

"Aircraft Fluid Systems" mean those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

"Aircraft Transparency" means the aircraft windshield, canopy, passenger windows, lenses and other components which are constructed of transparent materials.

"Airless Spray" means a spray method in which a pump forces the adhesive through an atomizing nozzle at high pressure (1,000 to 6,000 pounds per square inch).

Comment [A99]: The term is used in Section E.11.

"Antichafe Coating" means any coating applied to areas of moving aerospace components that may rub during normal operations or installation.

"Associated Solvent" means any solvent used in a solvent cleaning machine or ~~in~~ for solvent cleaning ~~operations subject to this rule~~ performed in association with surface coating of any aerospace vehicle or aerospace component.

Comment [A100]: Staff revised the definition to avoid confusion when the "associated solvent" is exempt from the rule and to expand the definition to include solvents used in solvent cleaning machines.

"Barrier Coating" means any coating applied in a thin film to fasteners to inhibit dissimilar metal corrosion and to prevent galling.

"Bearing Coating" means any coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

"Bonding Maskant" means any temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

"Caulking and Smoothing Compounds" mean semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

"Chemical Agent-Resistant Coating" means any exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

"Chemical Milling Maskant" means any coating that is applied directly to aluminum components to protect surface areas when chemical milling the component with a Type I or Type II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat) are not included. Maskants that are defined as specialty coatings are not included under this definition. Section C provides definitions of Type I and Type II etchants.

"Cleaning Operation" means collectively spray-gun, hand-wipe, and flush cleaning operations.

"Cleaning Solvent" means any liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include any solution that contains no reactive organic compounds and no toxic air contaminants.

"Clear Coating" means a transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat. In some cases, a clear coat refers to any transparent coating without regard to substrate.

"Coating" means any material that is applied to the surface of an aerospace vehicle or component to form a decorative, protective, or functional solid film, or the solid film itself. Adhesives, sealants, and lubricative material are types of specialty coatings.

Comment [A101]: Added for ease of understanding that these materials are **specialty coatings**.

"Commercial Exterior Aerodynamic Structure Primer" means any primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.

"Commercial Interior Adhesive" means any material used in the bonding of passenger cabin interior components. These components must meet the Federal Aviation Administration fireworthiness requirements.

"Compatible Substrate Primer" includes two categories: **"compatible epoxy primer"** and **"adhesive primer." "Compatible epoxy primer"** means any primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. **"Adhesive primer"** means any coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to

adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

"Compliant Material" means any coating, stripper, or solvent that has a reactive organic compound content or composite partial pressure that complies with the applicable limit in Sections D.1, D.2, or J.1

"Confined Space" means any space that (1) is large enough and so configured that an employee can bodily enter and perform assigned work; (2) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and (3) is not suitable for continuous employee occupancy.

"Contact Bond Adhesive" or **"Contact Adhesive"** means any adhesive intended by the manufacturer to adhere to itself instantaneously upon contact. The adhesive is applied to both adherends and allowed to become dry, which develops a bond when the adherends are brought together without sustained pressure. for application to both surfaces to be bonded together, is allowed to dry before the two surfaces are placed in contact with each other, forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces. Contact adhesive does not include rubber cements that are primarily intended for use on paper substrates. Contact adhesive also does not include vulcanizing fluids that are designed and labeled for tire repair only.

"Contact Bond Adhesive-Specialty Substrates" or **"Specialty Contact Adhesive"** means any contact adhesive that is intended by the manufacturer to be used for the bonding of nonporous substrates to each other, the bonding of decorative laminate in post-forming application, the bonding of decorative laminate to metal, melamine-covered board, or curved surfaces, or the bonding of any substrate to metal, rubber, rigid plastic, or wood veneer not exceeding 1/16 inch in thickness.

"Control" means the reduction, by destruction or removal, of the amount of affected pollutants in a gas stream prior to discharge to the atmosphere.

"Control System" means any combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of reactive organic compound or toxic air contaminant emissions generated by a regulated operation.

"Corrosion Prevention System" means any coating system that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings and compounds containing oils or waxes are excluded from this category.

"Critical Use and Line Sealer Maskant" means any temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, or high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e., line sealer) are also included in this category.

"Cryogenic Flexible Primer" means any primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-minus 275 degrees Fahrenheit and below).

"Cryoprotective Coating" means any coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.

"Cyanoacrylate Adhesive" means any fast-setting, single component adhesive that cures at room temperature. Also known as "super glue."

"Depainting" means the removal of a permanent coating from the outer surface of an aerospace vehicle or component.

"Depainting Operation" means the use of a chemical agent, media blasting, or any other technique to remove permanent coatings from the outer surface of an aerospace vehicle or components. The depainting operation includes washing of the aerospace vehicle or component to remove residual stripper, media, or coating residue.

~~3.~~ **"Detailing or Touch-up Guns"** mean any ~~are~~ small air spray equipment, including air brushes, that operate at no greater than 5 ~~CFM~~ cubic feet per minute air flow and no greater than 50 pounds per square inch gauge ~~(Psig)~~ air pressure and are used to coat small products or portions of products.

Comment [A102]: The District protocol is to remove degree symbols, abbreviations, and acronyms. Hence, they are spelled out here and elsewhere.

"Dip Coat Application" means any process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn.

"Dry Lubricative Material" means any coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which act as a dry lubricant.

~~4. **"Interior Topcoat"** means a topcoat used in habitable interior spaces of aircraft.~~

Comment [A103]: Moved to be in alphabetical order.

~~5.~~ **"Electric ~~/~~ or Radiation ~~-~~ Effect Coatings~~s~~"** mean~~s an electrically conductive or insulative coating, or coatings used on radar and antennae enclosures~~any coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse protection, and radar avoidance.

"Electrodeposition" means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

"Electrostatic Discharge and Electromagnetic Interference Coating" means any coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

~~6. **"Electrostatic Application"** means using a sufficient charging of atomized paint droplets to cause deposition by electrostatic attraction. This application requires a minimum 60kV power supply.~~

Comment [A104]: Replaced by the term "electrostatic spray" and relocated it to Rule 102.

"Elevated-Temperature Skydrol-Resistant Commercial Primer" means any primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester (PE) hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150 degrees Fahrenheit for 1,000 hours.

"Epoxy Polyamide Topcoat" means any coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

~~7. **"Exempt Organic Compounds"** means those compounds listed as exceptions in the definition of "Reactive Organic Compounds" in Rule 102.~~

Comment [A105]: **Exempt organic compound** is replaced by **exempt compound** in Rule 337. An **exempt compound** definition is being added to Rule 102, Definitions.

"Exterior Primer" means the first layer and any subsequent layers of identically formulated coating applied to the exterior surface of an aerospace vehicle or component where the component is used on the exterior of the aerospace vehicle. Exterior primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent exterior topcoats. Coatings that are defined as specialty coatings are not included under this definition.

~~8.~~ **"Extreme Performance Interior Topcoat"** means a topcoat used in interior spaces of aircraft areas requiring a fluid, stain, or nicotine barrier.

"Fastener Manufacturer" means any stationary source that coats aircraft fasteners, such as pins, collars, bolts, nuts, and rivets, with solid-film lubricants for distribution.

"Fastener Sealant" means any sealant applied to a device used to join two or more parts together.

~~9.~~ **"Fire ~~Insulation~~ Resistant (Interior) Coating"** means: ~~a coating used to provide a layer of insulation in the event of an aircraft or engine fire.~~

1. For civilian aircraft, any coating used on passenger cabin interior parts that are subject to the Federal Aviation Administration fireworthiness requirements.

2. For military aircraft, any coating used on parts that are subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721.

3. For space applications, any coating used on parts that are subject to the flammability requirements of SE-R-0006 and SSP 30233.

"Flexible Primer" means any primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

"Flight Test Coating" means any coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

"Flow Coat Application" means any coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.

"Flush Cleaning" means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or application equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or be assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand actions are used are not included.

"Fuel Tank Adhesive" means any adhesive used to bond components exposed to fuel and must be compatible with fuel tank coatings.

~~10.~~ **"Fuel Tank Coating"** means any coating applied to ~~the interior of a~~ fuel tank components ~~or to fuel-wetted areas of aircraft to protect it from~~ for the purpose of corrosion and/or bacterial growth inhibition and to assure sealant adhesion in extreme environmental conditions.

~~11.~~ **"Grams of ~~ROC~~ Reactive Organic Compound per Liter of Coating, Less Water and Less Exempt Compounds"** means the weight of ~~ROC~~ reactive organic compound per combined volume of ~~ROC~~ reactive organic compound and coating solids and can be calculated by the following equation:

~~*Grams(lb) of ROC / l(gal) of coating* = $\frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$~~

Grams of reactive organic compounds $= W_s - W_w - W_{es}$

per liter of coating, less water and less exempt compounds = $\frac{}{V_m - V_w - V_{es}}$

Where:
W_s = Weight of volatile compounds ~~(including water)~~ in grams
W_w = Weight of water in grams
W_{es} = Weight of exempt ~~organic~~ compounds in grams
V_m = Volume of material in liters
V_w = Volume of water in liters
V_{es} = Volume of exempt ~~organic~~ compounds in liters

For aerospace coatings that contain reactive diluents, the grams of reactive organic compound per liter of coating, less water and less exempt compounds, shall be calculated by the following equation:

Grams of reactive organic compounds per liter of coating, less water and less exempt compounds = $\frac{W_{rs} - W_{rw} - W_{re}}{V_{rm} - V_{rw} - V_{re}}$

Where:
W_{rs} = Weight of volatile compounds not consumed during curing in grams
W_{rw} = Weight of water not consumed during curing in grams
W_{re} = Weight of exempt compounds not consumed during curing in grams
V_{rm} = Volume of material not consumed during curing in liters
V_{rw} = Volume of water not consumed during curing in liters
V_{re} = Volume of exempt compounds not consumed during curing in liters

~~12.~~ **"Hand Application Method"** means the application of a surface coating by manually held non-mechanically operated equipment. Such equipment includes paint brush, hand-roller, trowel, spatula, dauber, rag or sponge.

"Hand-Wipe Cleaning Operation" means the removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

~~13.~~ **"High Temperature Coating"** means any coating ~~that, during normal use, must~~ designed to withstand temperatures ~~in excess~~ of more than 350 ~~°F~~ degrees Fahrenheit.

~~14. **"High Volume Low Pressure Spraying"** means using spray equipment with air pressure between 0.1 and 10.0 psi and air volume greater than 15.5 cfm per spray gun.~~

Comment [A106]: Replaced by the term "high volume low pressure spraying equipment" and relocated it to Rule 102.

"Insulation Covering" means any material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

"Interior Topcoat" means any topcoat used inhabitable interior spaces of aircraft.

Comment [A107]: Relocated here to be in alphabetical order.

"Intermediate Release Coating" means any thin coating applied beneath topcoats to assist in removing the topcoat in depainting operations and generally to allow the use of less hazardous depainting methods.

"Lacquer" means any clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

"Limited Access Space" means any internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

~~**"Liquid Leak"** means any coating, stripper, or solvent leak at a rate of more than three drops per minute or any visible liquid mist.~~

Comment [A108]: The term is no longer used in the rule. Hence, the definition should be deleted.

~~15. **"Maskant Chemical Processing"** means a coating applied directly to a part to protect surface areas when chemical milling, anodizing, aging, bonding, plating, etching and/or performing other chemical operations on the surface of the part.~~

"Long Term Adhesive Bonding Primer" means any adhesive bonding primer that has met the aircraft manufacturers' required performance characteristics following 6,000 hours testing, used for metal to structural core bonding, and with an adhesive that is specified to be cured at a temperature of 350 degrees Fahrenheit plus or minus 10 degrees Fahrenheit.

Comment [A109]: This term and those listed in Table 337-2 under **adhesive bonding primers** are from definitions in SJV Rule 4605.

"Metalized Epoxy Coating" means any coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

"Mold Release" means any coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

"Natural Draft Opening" means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

"Non-Complying Coating" means a coating with a reactive organic compound content above a limit specified in Section D.1.

"Noncompliant Material" means any coating, stripper, or solvent that has a reactive organic compound content or composite partial pressure that does not comply with the applicable limit in Sections D.1, D.2, or J.1.

"Nonstructural Adhesive" means any adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

"Optical Anti-Reflective Coating" means any coating with a low reflectance in the infrared and visible wavelength ranges that is used for antireflection on or near optical and laser hardware.

"Part Marking Coating" means any coatings or inks used to make identifying markings on materials, components, and/or assemblies. These markings may be either permanent or temporary.

~~16.~~ **"Pretreatment ~~Wash Primer~~Coating"** means ~~a~~ any organic coating ~~which~~ that contains ~~a small quantity of~~ at least 0.5 percent acids by weight ~~for surface etching~~ and is applied directly to metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.

~~17.~~ **"Primer"** means ~~a~~ the first layer and any subsequent layers of identically formulated coating applied ~~directly to a part for purposes of~~ to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and ~~/or~~ adhesion of subsequent coatings. Primers that are defined as specialty coatings are not included under this definition.

"Radome" means the nonmetallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

"Rain Erosion-Resistant Coating" means any coating or coating system used to protect the leading edges of parts such as flaps, stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

~~**"Reactive Organic Compound"** as defined in Rule 102, Definitions.~~

"Reactive Diluent" means a liquid which is a reactive organic compound during application and one in which, through chemical and/or physical reactions, such as polymerization, 20 percent or more of the reactive organic compound becomes an integral part of a finished material.

"Remanufactured Commercial Aircraft Part" means any aerospace component that is built as a spare part or replacement part subject to an existing commercial aircraft specification.

~~18. **"Repair"** means recoating of previously coated product due to damage to the coating following normal painting operations.~~

"Rocket Motor Bonding Adhesive" means any adhesive used in rocket motor bonding applications.

"Rocket Motor Nozzle Coating" means any catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

"Rubber-Based Adhesive" means any quick setting contact cement that provides a strong, yet flexible bond between two mating surfaces that may be of dissimilar materials.

"Scale Inhibitor" means any coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

"Screen Print Ink" means any ink used in screen printing processes during fabrication of decorative laminates and decals.

"Seal Coat Maskant" means any overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

~~19.~~ **"Sealant"** means any ~~coating~~ material used to prevent the intrusion ~~applied for the purpose of filling voids and providing a barrier against penetration~~ of water, fuel, air, or other ~~fluids or vapors~~liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants. Sealants are a type of specialty coating.

Comment [A110]: Added for ease of understanding the relationship between **sealants** and **specialty coatings**.

~~20. **"Sealant Bonding Primer"** means a coating applied in a very thin film to a part or product for the purpose of providing a primer for a subsequent coat of silicone sealant.~~

~~21.~~ **"~~Self Priming~~Self-Priming Topcoat"** means any ~~coating~~ topcoat that is applied directly to ~~a part or product that is not subsequently overcoated~~an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

"Sealant Product" means any sealant and sealant primer. Sealant products are a type of coating.

"Short Term Adhesive Bonding Primer" means any 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 degrees Fahrenheit plus or minus 10 degrees Fahrenheit.

"Silicone Insulation Material" means any insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

"Solid Film Lubricant" means any very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene (PTFE), or other solids that act as a dry lubricant between faying surfaces.

"Solids" mean the non-volatile portion of the coating which after drying makes up the dry film.

"Solvent" means any liquid containing any reactive organic compound or any toxic air contaminant, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, drying agent, preservative, or other similar uses.

"Solvent Cleaning" means any activity, operation, or process (including, but not limited to, surface preparation, cleanup, or wipe cleaning) performed outside of a solvent cleaning machine, that uses solvent to remove uncured adhesives, uncured coatings, uncured inks, uncured polyester resin material, uncured sealant, or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment, and general work areas. Cleaning spray equipment used for the application of coating, adhesive, ink, polyester resin material, or sealant is also considered to be solvent cleaning irrespective of the spray material being cured.

"Solvent Cleaning Machine" means any device or piece of equipment that uses solvent liquid or vapor to remove soils, moisture, or other contaminants from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, batch cold, batch vapor, in-line cold, in-line vapor, remote reservoir, and gas-path solvent cleaners. Buckets, pails, and beakers with capacities of 3.785 liters (1.00 gallon) or less are not considered solvent cleaning machines. However, the use of such a container or similar containers (e.g., hand-held spray bottles) with a liquid solvent for cleaning is considered to be solvent cleaning. Any device or piece of equipment used exclusively for stripping shall not be considered to be a solvent cleaning machine.

Comment [A111]: **Solvent, solvent cleaning**, and **solvent cleaning machine** are the same definitions found in Rule 321. **Solvent** includes any liquid containing any **toxic air contaminant.**

"Sonic and Acoustic Applications" means the use of aerospace materials on aerospace components that are subject to mechanical vibration and/or sound wave cavitation.

"Space Vehicle" means any man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which through contamination can compromise the space vehicle performance.

~~22.~~ **"Space Vehicle Coating"** means any coating applied to vehicles designed to travel beyond the earth's atmosphere.

"Specialized Function Coating" means any coating that fulfills extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other Specialty Coating categories.

"Specialty Coating" means any coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection. The reactive organic compound content limit for the individual specialty coatings are listed in Section D.1, Table 337-2. Definitions for each specialty coating category are provide in Section C.

"Spray Gun" means any device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

~~**"Stationary Source"** as defined in Rule 102, Definitions.~~

~~23.~~ **"Stripper"** means ~~a precursor organic compound applied to remove temporary coating, maskant for chemical processing, paint or residue~~ any liquid that is applied to a surface to remove cured or dried coatings such as primers, adhesives (e.g., debonding or unglueing), topcoats, and temporary protective coatings.

Comment [A112]: Modeled on 40 CFR 63.742 and SJV Rule 4605 definitions. Industry requested clarification of debonding and unglueing provisions. In response, staff added text on stripping cured adhesives. Stripper material limits are in Rule 337.D.2.

~~24.~~ **"Structural Autoclavable Adhesive"** means any ~~coating~~ adhesive~~which is applied for the purpose of bonding structural components together~~ used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

"Structural Nonautoclavable Adhesive" means any adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or for other critical functions, such as nonstructural bonding in the proximity of engines.

"Surface Preparation" means the removal of contaminants from the surface of an aerospace vehicle or component or the activation or reactivation of the surface in preparation for the application of a coating.

~~25.~~ **"Temporary Protective Coating"** means any coating applied to ~~a part to protect it from mechanical and environmental damage during manufacturing~~ provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.

"Thermal Control Coating" means any coating formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

~~26.~~ **"Topcoat"** means any coating applied over a primer ~~or intermediary coating~~ on an aerospace vehicle or component for ~~purposes such as~~ appearance, identification, camouflage, or protection. Coatings that are defined as specialty coatings are not included under this definition.

~~27.~~ **"Touch ~~up~~ Up"** means that portion of the coating operation which is separate from the main coating process but necessary to cover minor imperfections or to achieve coverage as required.

"Touch-Up and Repair ~~Operation~~" means that portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

~~28. **"Transfer Efficiency"** means the ratio of the weight of coating solids adhering to the object being coated to the weight of coating solids used in the application process, expressed as a percentage.~~

Comment [A113]: This term has been relocated to Rule 102.

"Type I Chemical Milling Maskant" see the **"Chemical Milling Maskant"** definition.

"Type II Chemical Milling Maskant" see the **"Chemical Milling Maskant"** definition.

"Type I Etchant" means any chemical milling etchant that contains varying amounts of dissolved sulfur and does not contain amines.

"Type II Etchant" means any chemical milling etchant that is a strong sodium hydroxide solution containing amines.

"Viscosity" means the internal friction of a liquid that makes it resistant to flow.

"Wet Fastener Installation Coating" means any primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

~~29.~~ **"Wing Coating"** means any corrosion-resistant coating that is resilient enough to withstand the flexing of the ~~aircraft~~ wings.

D. Requirements — Reactive Organic Compound ~~(ROC)~~ Limits

1. ~~A~~ No person shall ~~not~~ apply any coating or ~~specify~~ solicit the use of any coating on any aerospace vehicle or component subject to the provisions of this rule, which, as applied, ~~emits or may emit~~ contains reactive organic compounds ~~into the atmosphere~~ in excess of the limits shown in the tables below. These limits are expressed in grams of reactive organic compound per liter ~~or pounds per gallon~~ of coating, less water and less exempt ~~organic~~ compounds:

Table 337-1: Reactive Organic Compound Content Limits for Coatings Other than Specialty Coatings (Grams of Reactive Organic Compound per Liter, Less Water and Less Exempt Compounds)

Coating Type	ROC Limit
	Effective [*date of amended rule adoption*]
Exterior Primer	350
Primer	350
Self-Priming Topcoat	420
Topcoat	420
Type I Chemical Milling Maskant	250
Type II Chemical Milling Maskant	160

Table 337-2: Reactive Organic Compound Content Limits for Specialty Coatings (Grams of Reactive Organic Compound per Liter, Less Water and Less Exempt Compounds)

Coating Type	ROC Limit	
	~~g/l~~ Effective Before [*24 months after the date of amended rule adoption*]	~~lb/gal~~ Effective On and After [*24 months after the date of amended rule adoption*]
Ablative Coating	600	600
Adhesion Promoter	850	250
Adhesive Bonding Primers:	~~250~~	~~2.1~~
New Commercial Aircraft	250	250
All Military Aircraft	805	805
Remanufactured Commercial Aircraft Parts	805	805
Sonic and Acoustic Applications	805	805
Long Term	250	250
Short Term	250	250
Adhesives:		
Commercial Interior Adhesive	760	760
Cyanoacrylate Adhesive	1020	1020
Fuel Tank Adhesive	620	620
Nonstructural Adhesive	250	250
Rocket Motor Bonding Adhesive	890	890
Rubber-Based Adhesive	850	850
Structural Autoclavable Adhesive	50	50
Structural Nonautoclavable Adhesive	850	850
Antichafe Coating	600	420

Comment [A114]: Our practice is to improve text flow by changing the sentence structure in this manner.

Comment [A115]: ARB suggested the text changes in a letter dated February 2, 1995.

Comment [A116]: 40CFR63, Subpart GG, coating types were condensed into those in Table 337-1. Subpart GG limits were compared to existing Rule 337 limits and those found in other air districts. Table 337-1 figures reflect limits that have been achieved in practice.

Comment [A117]: Coating types from EPA's CTG for this source category were added to Table 337-2. The limits in that guidance document were compared to those in other air districts. Lower ROC-content limits that have been achieved in practice were included in lieu of the limits recommended in the CTG. As noted below, some subcategories and limits were based on other air district rules.

Comment [A118]: ARB suggested lowering the limit for **adhesion promoter** to 250 g/l, **Antichafe coating** to 420 g/l, and **fastener sealant** to 600 g/l based on limits in other air districts. A 24-month period for phasing-in the new limits is provided to allow sale through and use of already purchased material.

Comment [A119]: **Adhesive bonding primer** limits and subcategories were modeled on those found in the SC and SJV rules.

Coating Type	ROC Limit	
	~~g/l~~ Effective Before [*24 months after the date of amended rule adoption*]	~~lb/gal~~ Effective On and After [*24 months after the date of amended rule adoption*]
Barrier Coating	420	420
Bearing Coating	620	620
Caulking and Smoothing Compounds	850	850
Chemical Agent-Resistant Coating	550	550
Clear Coating	520	520
Commercial Exterior Aerodynamic Structure Primer	350	350
Compatible Substrate Primer	350	350
Corrosion Prevention System Compound	710	710
Cryogenic Flexible Primer	350	350
Cryoprotective Coating	600	600
Dry Lubricative Material		
Fastener Manufacturing	120	~~1~~120
Nonfastener Manufacturing	675	~~5.6~~675
Electric~~-~~ ~~/~~or Radiation~~–~~Effect	800	~~6.7~~800
Electrostatic Discharge and Electromagnetic Interference Coating	800	800
Elevated-Temperature Skydrol-Resistant Commercial Primer	350	350
Epoxy Polyamide Topcoat	660	660
Extreme Performance Interior Topcoat	420	~~3.5~~420
Fastener Sealant	675	600
~~Fire Insulation Coating~~	~~600~~	~~5~~
Fire-Resistant (Interior) Coating	600	600
Flexible Primer	350	350
Flight-Test Coatings:		
Missile or Single Use Aircraft	420	420
All Other	600	600
Fuel Tank Coating (Excluding Fuel Tank Adhesive)	~~720~~ 420	~~6~~ 420
High~~–~~Temperature Coating	720	~~6~~720
Interior Topcoat	340	~~2.8~~340
Insulation Covering	740	740
Intermediate Release Coating	750	750
Lacquer	830	830
~~Maskant Chemical Processing~~	~~600~~	~~5~~
Maskants:		
Bonding Maskant	1,230	1,230
Critical Use and Line Sealer Maskant	1,020	1,020
Seal Coat Maskant	1,230	1,230
Metallized Epoxy Coating	700	700
Mold Release	780	780
Optical Anti-Reflective Coating	700	700
Part Marking Coating	850	850

Comment [A120]: **Dry lubricative material** limits and subcategories were modeled on those found in the SC and SJV rules.

Comment [A121]: SC, SJV, and VC rules include a 675 g/l **fastener sealant** limit. The 600 g/l limit is based on a limit in the SJV Rule 4605.

Coating Type	ROC Limit	
	~~g/l~~ Effective Before [*24 months after the date of amended rule adoption*]	~~lb/gal~~ Effective On and After [*24 months after the date of amended rule adoption*]
Pretreatment ~~Wash Primer~~Coating	~~400~~ 780	~~3.3~~ 780
~~Primer~~	~~350~~	~~2.9~~
Rain Erosion-Resistant Coating	600	600
Rocket Motor Nozzle Coating	660	660
Scale Inhibitor	880	880
Screen Print Ink	840	840
Sealant	~~600~~	~~5~~
Extrudable/Rollable/Brushable Sealant	280	280
Sprayable Sealant	600	600
~~Sealant Bonding Primer~~	~~720~~	~~6~~
~~Self Priming Topcoat~~	~~420~~	~~3.5~~
Silicone Insulation Material	850	850
Solid Film Lubricants		
Fastener Manufacturing	250	250
Fastener Installation	880	880
Nonfastener Manufacturing	880	880
Space Vehicle Coating:		
Electrostatic-Discharge	800	~~6.7~~800
Other	1,000	~~8.3~~1,000
Specialized Function Coating	890	890
Temporary Protective Coating	250	~~2.1~~250
~~Topcoat~~	~~420~~	~~3.5~~
Thermal Control Coating	800	800
Wet Fastener Installation Coating	675	675
Wing Coating	750	~~6.3~~750

Comment [A122]: **Solid film lubricants** subcategories and limits mirror those found in the SC, SJV, and VC rules.

2. ~~A.~~ No person shall ~~not~~apply any stripper or ~~specify~~ solicit the use of any stripper unless it complies with one or both of the following:

   a. The stripper contains less than ~~400~~ 300 grams~~/~~ of reactive organic compound per liter ~~of ROC~~ of material (2.50 pounds of reactive organic compound per gallon).

   b. The stripper has a ~~true vapor~~ reactive organic compound composite partial pressure ~~of less than 10 mm Hg~~ equal to or less than 9.5 millimeters of mercury at ~~actual usage temperature~~20 degrees Celsius.

Comment [A123]: Change made to 300 g/l per suggestion from the Air Resources Board.

Comment [A124]: **Reactive organic compound composite partial pressure** is more contemporary than **true vapor pressure**. SJV and VC have reduced the limit to 9.5 mm Hg at 20 degrees C.

3. ~~Sources.~~ A person may elect to use an add-on ~~exhaust~~ control ~~equipment~~ system ~~to achieve~~ as an alternative to meeting the requirements ~~compliance with the provisions~~ of Sections D.1, D.2, E, and J, provided ~~that the control equipment meets~~ all of the applicable requirements ~~of sections a. and b.~~ below are met. ~~Such control equipment must be approved in advance by the Control Officer.~~ Any person choosing to install such control equipment shall obtain an Authority to Construct from the District prior to installation.

   ~~a. The control device shall reduce emissions from an emission collection system by at least 95 percent by weight.~~

Comment [A125]: Following other air district methods, sources may comply with the Section E (application equipment) and Section J (solvent ROC-content or pressure) provisions by using an add-on control system.

~~b. The emission collection system which collects and transports emissions to an air pollution control device shall collect at least 90 percent by weight of the emissions generated by the sources of emissions.~~

a. The overall efficiency (the capture efficiency multiplied by the control device efficiency) of the total system shall not be less than 85.5 percent, by weight. Alternatively, the control device reactive organic compound exhaust concentration shall not exceed 10 parts per million by volume as propane or other limit approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

Comment [A126]: Similar to the Rule 321.N.1 provision.

b. Combustion temperature shall be continuously monitored when operating a thermal incinerator.

c. Inlet and exhaust gas temperatures shall be continuously monitored when operating a catalytic incinerator.

d. Control device efficiency shall be continuously monitored when operating a carbon adsorber or a control device other than a thermal or catalytic incinerator.

Comment [A127]: Subsections d - f mirror Rule 353.I provisions.

e. Compliance through the use of an add-on control system shall not result in affected pollutant emissions in excess of the affected pollutant emissions that would result from compliance with Sections D.1, D.2, E, and J.

Comment [A128]: Similar to provision in Rule 321.N.6. (**Reactive organic compound** changed to **affected pollutant** to include TACs.)

E. Requirements – Application Equipment

~~A.~~ No person shall ~~not~~ apply coatings subject to ~~the provisions of~~ this rule ~~except by using properly operated~~ unless the application is performed with equipment ~~and by~~ operating according to the manufacturers operating guidelines. In addition, except as provided in Section D.3, the application method employed shall be one of the following:

Comment [A129]: ARB suggested the addition of **according to the manufacturers operating guidelines.**

Comment [A130]: The potential new Section E provisions are similar to those found in the SJV Rule 4653 and the SC Rule 1168. The District proposes them to comply with the "every feasible control technique" requirements in state law.

1. Electrostatic spray application, or

2. Flow coat application, or

3. Dip coat application, or

4. Roll coater, or

Comment [A131]: SC Rule 1168 and SJV Rule 4653 include **roll coater.**

~~4~~5. High volume~~,~~ low pressure spraying ~~(HVLP)~~ equipment, or

~~5~~6. Electrodeposition, or

~~6~~7. Hand application methods, or

~~7~~8. Detailing or touch-up guns, or

~~8~~9. Any other ~~coating~~ application method ~~that~~ approved by the Control Officer, the Air Resources Board, and the Environmental Protection Agency, ~~achieves~~ that has a coating transfer efficiency ~~of at least~~ equivalent to or greater than 65 percent efficiency as ~~demonstrated~~ measured ~~by~~ using the test method specified in Section I.4.

10. Except as otherwise provided in Section E.11, air-atomized spray may only be used for the application of contact adhesives or specialty contact adhesives.

Comment [A132]: Stems from SJV Rule 4653.5.2.9.

11. For adhesive products and sealant products with an as applied viscosity of 200 centipoise or greater, airless spray, air-assisted airless, and air-atomized spray may be used.

Comment [A133]: Modeled on SC Rule 1168(c)(5)(H).

F. Requirements ~~– Closed Containers~~General Operating

Any person who owns, operates, or uses any surface coating or depainting equipment for any aerospace vehicle or component coating operation shall meet the following requirements:

1. All ~~ROC~~ reactive organic compound-containing materials, used or unused, including but not limited to surface coatings, thinners, cleanup solvents, strippers, or surface preparation materials shall be stored and disposed of in ~~closed~~ nonabsorbent and nonleaking containers equipped with tight-fitting covers. All covers shall be in place unless adding material to or removing material from the containers, ~~and opened only during extraction or introduction of material for mixing, use or storage~~ the containers are empty, or doing maintenance/inspection of the containers. ~~After distillation recovery of solvent, waste solvent residues shall not contain more than 20 percent of reactive organic compound by weight as determined by the test method specified in Section I.10.~~

2. All application equipment, ventilation system, and emission control equipment shall be installed, operated, and maintained consistent with the manufacturer's specifications.

3. Waste solvent, waste solvent residues, and any other waste material that contains reactive organic compounds shall be disposed of by one of the following methods: ~~All containers holding surface coating or solvent shall be free of liquid leaks. All application equipment, solvent distillation units, and gun washers shall not have any liquid leaks, visible tears, holes, or cracks. Any such liquid leak, visible tear, hole, or crack is a violation of this rule.~~

   ~~Any liquid leak, visible tear, hole, or crack that is detected shall be repaired within one day from discovery, or the equipment shall be drained of all surface coating or solvent, consistent with Section F.1 provisions, and shut down until replaced or repaired. Application equipment, solvent distillation units, and gun washers shall not be operated when leaking.~~

   a. A commercial waste solvent reclamation service licensed by the State of California.

   b. At a facility that is federally or state licensed to treat, store or dispose of such waste.

   c. Recycling in conformance with Section 25143.2 of the California Health and Safety Code.

4. All covers, valves, drain plugs, and other closure devices designed to reduce surface coating, stripper, or solvent evaporation shall not be removed or opened except to process work or to perform monitoring, inspections, maintenance, or repairs that require the removal of the covers or other closure devices.

5. Any surface coating, stripper, or solvent spills shall be wiped up immediately and the used absorbent material (e.g., cloth, paper, sand, sawdust, etc.) shall be stored in closed containers that are handled in accordance with Section F.1.

6. The handling and transfer of coatings, strippers, and cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent coatings, strippers, and cleaning solvents shall be conducted in such a manner to minimize spills.

Comment [A134]: The **housekeeping** provisions are similar to requirements found in Rule 321.D.

7. ~~Any storage of any compound~~ Containers used to store coating, solvent, or any waste material that contains reactive organic compounds subject to this rule shall be marked or clearly labeled indicating the name of the material they contain~~only be done in containers that meet the labeling requirements of Section C~~.

G. Requirements ~~–~~ Manufacturer Labeling

1. Each container of any coating subject to this rule shall display the date on which the contents were manufactured or a code indicating the date of manufacture. Each manufacturer of such coatings shall file with the Air Pollution Control Officer and the Executive Officer of the California Air Resources Board an explanation of each code.

2. Each container of any coating subject to this rule shall display a statement of the manufacturer's recommendation regarding thinning of the coating. This recommendation shall not apply to the thinning of coatings with water. The recommendation shall specify that the coating is to be employed without thinning or diluting under normal environmental and application conditions unless any thinning recommended on the label for normal environmental and application conditions does not cause a coating to exceed its applicable standard for reactive organic compound content.

Comment [A135]: ARB recommendation.

3. Each container of any coating subject to this rule shall display the maximum ~~ROC~~reactive organic compound content of the coating, as applied, and after any thinning as recommended by the manufacturer. ~~ROC~~ Reactive organic compound content shall be displayed as ~~g/l~~grams per liter or ~~lb/gal~~pounds per gallon of coating, less water and less exempt ~~organic~~ compounds. The ~~VOC~~ volatile organic compound content may be displayed instead of the ~~ROC~~ reactive organic compound content as long as the manufacturer's definition of ~~VOC~~ volatile organic compound is consistent with the definition of ~~ROC~~ reactive organic compound contained in District Rule 102, Definitions. ~~ROC~~ Reactive organic compound content displayed may be calculated using product formulation data and the formula in Section C, or may be determined using the test method in Section I.1.

Comment [A136]: Inserting **and the formula in Section C** follows an ARB suggestion.

H. Requirements — Recordkeeping

Any ~~Persons~~ person subject to this rule shall comply with the following requirements. Any owner or operator of any stationary source comprised of more than one facility may comply with the following requirements on a facility basis.

Comment [A137]: The District added this in response to an Industry comment received during the Aug. 10, 2011 workshop.

1. Maintain a current ~~listing~~file of all ~~ROC~~reactive organic compound-containing materials in use at ~~their facility~~the stationary source subject to this rule. ~~This listing shall include:~~ The file shall provide all of the data necessary to evaluate compliance and shall include the following information, as applicable:

Comment [A138]: Our protocol is to specify requirements are on a **stationary source** basis. By adding **in use at the stationary source**, misinterpretations that the requirements are on a **facility basis** should be avoided.

Comment [A139]: Essentially the same text found in Rule 353.O.1.

   a. material name and manufacturer identification (e.g., brand name, stock identification number);

   b. application method;

   c. material type, ~~and~~ manufacturer's specific use instructions (e.g., specific use for which the material is intended), type operation (e.g., coating, stripping, or solvent cleaning), and, for coating operations, the coating type from Table 337-1 or Table 337-2 and equipment coated;

   d. specific mixing ~~ratio~~data (e.g., component volumes or weights) of each component for each batch sufficient to determine the mixture's reactive organic compound content;

   e. the corresponding reactive organic compound limit(s) from Sections D.1, D.2, and J.1 and the ~~maximum~~ actual as applied ~~ROC~~reactive organic compound content of coating used. If complying using the "reactive organic compound composite partial pressure" method only, provide the actual reactive organic compound composite partial pressure of the materials used ~~less water and less exempt compounds as applied (including thinning solvents).~~; and

f. current coating, stripper, and solvent manufacturer specification sheets, Material Safety Data Sheets, product data sheets, or air quality data sheets, which list the reactive organic compound content of each material in use at the stationary source subject to this rule. Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container.

Comment [A140]: Added in response to a comment by VAFB.

~~2. Current coating manufacturer specification sheets, Material Safety Data Sheets or current air quality data sheets, which list the ROC content of each material in use at their facility, shall be available for review on site.~~

Comment [A141]: Moved to 337.H.1.f.

~~3~~2. Maintain ~~purchase~~ records ~~identifying the type or name and the volume of material purchased~~ for each ~~ROC~~reactive organic compound-containing material purchased for use at the stationary source. The records shall include, but not be limited to, the following:

a. material name and manufacturer identification (e.g., brand name, stock identification number); and

b. material type (e.g., coating type from Table 337-1 or Table 337-2, cleanup solvent, stripper, etc.)~~;~~

~~c. volume of material purchased;~~

~~d. date of purchase; and~~

~~e. receipts of each purchase.~~

3. Maintain records of the disposal method ~~of disposal~~ each time waste solvent, ~~or~~ waste solvent residue, or other waste material that contain reactive organic compounds is removed from the stationary source for disposal.

4. ~~Maintain~~ For each material maintained in response to Section H.1.a, maintain at a minimum, on a monthly basis for compliant material and on a daily basis for noncompliant material, a record of the following:

Comment [A142]: Revised to show "Section H.1.a" to exclude MSDSs per clarification request received during the August 10, 2011 workshop.

a. volume used (gallons per day, gallons per month)~~,~~;

b. ~~ROC~~reactive organic compound content (grams per liter or pounds per gallon); and

c. ~~and~~ resulting ~~ROC~~reactive organic compound emissions (pounds per day, pounds per month)~~of each ROC containing material used~~.

~~For permitted stationary sources and users of non-compliant coatings. These all records required by this Subsection and Subsection H.5 shall be summarized for each calendar year and submitted to the District by March 1 of the following year. The annual report shall include the name and address of the Permittee, the Permit to Operate number that the coating, stripping, and/or solvent cleaning is subject to (if permitted), and/or a statement that the annual report includes non-compliant coating usage information.~~

Comment [A143]: Moved the annual reporting requirements to Section L per industry suggestion.

5. ~~Operators of facilities~~ For any stationary source that uses ~~non-compliant coating materials with compliance achieved through the operation of~~ emission control equipment as an alternative to meeting the requirements of Sections D.1, D.2, E, or J, ~~shall maintain~~ daily records of key operating parameter values and maintenance procedures ~~which~~ that demonstrate continuous operation and compliance of the emission control ~~device~~ system during periods of emission producing activities shall be maintained. These parameters shall include, but not be limited to:

a. Hours of operation;

b. All maintenance work that requires the emission control system to be shut down;

c. All information needed to demonstrate continuous compliance with Section D.3, such as temperatures, pressures, and/or flow rates.

Comment [A144]: Subsections a - c are from Rule 321.R.1.c.

6. ~~All~~ Any records required ~~by~~ to be maintained pursuant to this rule shall be kept on site for at least 2 years unless a longer retention period is otherwise required by state or federal regulation(s). Such records shall be readily available for ~~expeditious~~ ~~shall be retained and available for~~ inspection ~~by the Control Officer or designated representative upon request for the previous 36 month period~~ and review by the District.

Comment [A145]: During the CAC meeting on August 10, a concern about the need to maintain records for 5 years was raised. Staff discovered that EPA had modified its 5 year recordkeeping policy. Hence, per the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies," 2 years record retention is acceptable for sources not subject to Title V permitting or a MACT standard.

7. Any person claiming an exemption under Section B.1 shall maintain:

a. Daily records of the volumes in gallons of non-~~compliant~~ complying coating materials used by each separate formulation at the stationary source.

b. Annual running totals, from January 1 of each calendar year, of the volume in gallons of non-~~compliant~~complying coating materials used at the stationary source for:

1) Each separate formulation.

2) All formulations.

Comment [A146]: EPA recommended **daily recordkeeping** for non-complying coatings.

~~8. If an operator or District staff discovers a liquid leak in a container holding surface coating, stripper, or solvent, or a liquid leak, visible tear, hole, or crack in application equipment, a solvent distillation unit, or in a gun washer, the operator shall record:~~

~~a. the date of discovery;~~

~~b. the corrective action taken; and~~

~~c. the date of repair or equipment replacement.~~

I. Requirements – Compliance Provisions and Test Methods

1. ~~ROC content of a coating~~ Coatings and solvent reactive organic compound content shall be ~~determined~~ measured ~~using EPA~~ by the Environmental Protection Agency Reference Method 24, its constituent methods, or an equivalent method approved by the ~~Control Officer, ARB and EPA~~ Environmental Protection Agency, the Air Resources Board, and the Control Officer. The determination of exempt compounds shall be performed in accordance with ASTM D 4457-~~85~~1991, "Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph," ASTM International. Alternatively, determination of exempt compounds may be performed in accordance with the South Coast Air Quality Management District Method 303-91, "Determination of Exempt Compounds," August 1996. The reactive organic compound content of materials containing 50 grams of reactive organic compound per liter or less shall be determined by the South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

Comment [A147]: EPA recommended referring to SC Method 313 for determining ROC content of materials containing < 50 g/l.

2. ~~Compliance with Section D.3.a~~ The control device efficiency for reactive organic compound emissions shall be determined by ~~using ARB Method 100 or EPA~~ Environmental Protection Agency Test Methods 25, 25A, the South Coast Air Quality Management District Method 25.1, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon," February 1991, or

the South Coast Air Quality Management District Method 25.3, "Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources," March 2000, as applicable. Environmental Protection Agency Test Method 18 or Air Resources Board Method 422, "Exempt Halogenated VOCs in Gases," September 12, 1990, shall be used to determine emissions of exempt compounds. ~~or a method determined to be equivalent and approved by the Control Officer, ARB, and EPA.~~

3. ~~Compliance with Section D.3.b~~ The capture efficiency for reactive organic compound emissions shall be ~~based on EPA Guidelines for Developing Capture Efficiency Protocols from 55 FR 26865,~~ July 1, ~~1990~~determined by verifying the use of a Permanent Total Enclosure and 100 percent capture efficiency as defined by Environmental Protection Agency Method 204, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if an Environmental Protection Agency Method 204 defined Permanent Total Enclosure is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the Environmental Protection Agency technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the Environmental Protection Agency technical guidelines shall be determined by:

   a. The Temporary Total Enclosure approach of Environmental Protection Agency Methods 204 through 204F; or

   b. The South Coast Air Quality Management District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency," May 1995~~.~~

4. ~~Compliance with Section E.8~~ Application equipment coating transfer efficiencies shall be ~~determined~~ measured using South Coast Air Quality Management District Method "Spray Equipment Transfer Efficiency Test Procedure of Equipment User," May ~~24,~~ 1989.

5. ~~Compliance with Section D.2~~ Reactive organic compound composite partial pressures shall be ~~determined~~ measured using ASTM D 2879-~~86~~1997, "Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," ASTM International, in combination with the formula in the ~~Section C~~ Rule 102 definition of "reactive organic compound composite partial pressure," manufacturer's specified ~~vapor~~ reactive organic compound composite partial pressure, or an accepted scientific reference approved the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

6. The control device efficiency for toxic air contaminant emissions that are not reactive organic compounds shall be determined using:

   a. an Environmental Protection Agency approved test method or methods, or

   b. in the case where there is no Environmental Protection Agency approved test method, a District approved detection method applicable for each target toxics specie.

   c. the Control Officer may require more than one test method on any emission control device where necessary to demonstrate that the overall efficiency is at least 85.5 percent by weight in reducing emissions of reactive organic compounds and/or toxic air contaminants. Any technique to convert "parts per million by volume" test method results to either 1) "parts per million by weight," or 2) "mass emission rates" (e.g., pounds per hour) shall first be approved by the Control Officer and, if such approval is not provided, then the technique shall not be used to show compliance with this rule.

7. The capture efficiency for toxic air contaminant emissions that are not reactive organic compounds shall be determined by using the methods described in Section I.3 modified in a

Comment [A148]: These changes follow EPA's recommendation that the District model the provisions on SC Rule 1122(h)(7)(B) text.

Comment [A149]: EPA recommended that the District model the provisions on SC Rule 1122(h)(7)(A) text.

Comment [A150]: Essentially the same as Rule 321.P.4 provisions.

manner approved by the District to quantify the mass of liquid or gaseous reactive organic compounds and/or toxic air contaminants.

Comment [A151]: Similar to the Rule 321.P.3 requirements.

8. The active and passive solvent losses from spray gun cleaning systems shall be determined using South Coast Air Quality Management District's, "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," dated October 3, 1989. The test solvent for this determination shall be any lacquer thinner with a minimum reactive organic compound composite partial pressure of 105 millimeters of mercury at 20 degrees Celsius, and the minimum test temperature shall be 15 degrees Celsius.

9. Viscosity shall be determined by ASTM D 1084-88, "Standard Test Methods for Viscosity of Adhesives," ASTM International.

10. ~~Solvent waste residue reactive organic compound content shall be determined by using Environmental Protection Agency Reference Method 25D or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.[Reserved]~~Emissions of reactive organic compounds from the exhaust of an emission control system shall be measured by the Environmental Protection Agency Method 25, in combination with Environmental Protection Agency Method 18 or the California Air Resources Board Method 422, "Exempt Halogenated VOCs in Gases," September 12, 1990 (to determine emissions of exempt compounds).

11. When more than one test method or set of test methods are specified for any testing, a test result showing an exceedance of any limit of this rule shall constitute a rule violation.

Comment [A152]: Added per the EPA recommendation in the Technical Support Document for SJV Rule 4605 (June 2009).

12. The Environmental Protection Agency test methods in effect on [*date of amended rule adoption*] shall be the test methods used to meet the requirements of this rule.

J. Requirements –Solvent Cleaning Associated with Surface Coating of Aerospace Vehicles and Components

Comment [A153]: Section J stems from similar **solvent cleaning** provisions in Rule 321.M.

Section J requirements shall apply to any person performing solvent cleaning associated with surface coating of aerospace vehicles or components, including, but not limited to, use of wipe cleaning cloths, hand-held spray bottles, squirt bottles, aerosol products, and the cleaning of application equipment. The following requirements become effective [*one year from the date of amended rule adoption*] and are in addition to the general operating requirements specified in Section F.

1. Solvent Requirements

Except when using an emission control system that meets the requirements of Section D.3, no person shall use any solvent to perform solvent cleaning which exceeds the following limits:

a. **When Performing Surface Preparation for Coating Application and Cleanup (Other than Spray Application Equipment Cleaning):**

1) 200 grams of reactive organic compound per liter (1.67 pounds of reactive organic compound per gallon) of material, or

2) reactive organic compound composite partial pressure of 45 millimeters of mercury at 20 degrees Celsius.

Comment [A154]: Modeled on SC Rule 1124(c)(1)(A) and SJV Rule 4605.5.2.1.

b. **When Performing Solvent Cleaning of Spray Application Equipment:** 25 grams of reactive organic compounds per liter (0.21 pounds of reactive organic compound per gallon) of material. In lieu of meeting the reactive organic compound-content limit, a person may use an enclosed cleaning system, or equipment that is proven to the satisfaction of the Control Officer to be equally effective as an enclosed cleaning system

Comment [A155]: ARB and EPA recommended a 25 g/l limit on the solvent's ROC content.

at controlling emissions. "Equal effectiveness" of an alternative cleaning system shall be determined by the test method referenced in Section I.8 of this rule. If an enclosed cleaning system is used, it shall totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures, and it shall be used according to the manufacturer's recommendations and be closed when not in use.

Comment [A156]: Aerospace industry spokespersons indicated that some application equipment cleaning requires with a higher ROC-content solvent. In response, a provision modeled on Rule 321.M.3 is included.

2. **Cleaning Devices and Methods.** Except for solvent cleaning of spray application equipment, any person performing solvent cleaning with a solvent containing more than 25 grams of reactive organic compounds per liter of material shall use one or more of the following cleaning devices or methods:

a. Wipe cleaning where solvent is dispensed to wipe cleaning materials from containers that are kept closed to prevent evaporation, except while dispensing solvent or replenishing the solvent supply, and where wipes are stored in closed containers to prevent evaporation when not in use;

b. Application of solvent from hand-held spray bottles, squirt bottles, or other closed containers with a capacity of one liter or less; or

c. Non-atomized solvent flow, dip, or flush cleaning method where pooling on surfaces being cleaned is prevented or drained, and all solvent runoff is collected in a manner that enables solvent recovery or disposal. The collection system shall be kept closed to prevent evaporation except while collecting solvent runoff or emptying the collection system.

Comment [A157]: Similar to Rule 321.M.2.

K. Compliance Schedule

~~Except as otherwise specified in Section D.1 and Section J, the provisions of this rule are effective on [*date of amended rule adoption*]. Any person subject to this rule shall comply with the Section J requirements by [*one year from the date of amended rule adoption*].~~

Any person who owns, operates, or uses any application equipment to surface coat any aerospace vehicles or components shall meet the following compliance schedule:

1. By [*30 days from the date of amended rule adoption*], comply with Section F, Requirements - General Operating.

2. By [*six months from the date of amended rule adoption*], comply with the recordkeeping provisions in the following Sections:

a. H.1.d - mixing volumes.

b. H.1.e - reactive organic compound content data,

c. H.2 - purchase records,

d. H.3 - waste disposal records, and

e. H.4 - daily records for noncompliant materials.

3. By [*one year from the date of amended rule adoption*], comply with the Section J and Section M requirements.

4. By [*date of amended rule adoption*], comply with all other provisions of this rule.

L. Reporting Requirements

Submittal of an annual report to the District is required if:

- A person holds a permit for equipment subject to the requirements of this rule, or
- A person is subject to the requirements of this rule and applies non-complying coatings.

The annual report shall be due March 1 and it shall contain the following information for the previous calendar year:

1. monthly records required by Section H.4,

2. annual totals (gallons) based on each of the coating's and solvent's monthly data,

3. if claiming the Rule 337.B.1 exemption, annual totals (gallons) of non-complying coatings for each separate formulation and all formulations, per Section H.7.b, and

4. if permitted, name and address of the company or agency, and the Permit to Operate number that the surface coating equipment is subject to.

Comment [A158]: The annual report provision was relocated from Section H.4 to a stand-alone section per an Industry suggestion.

M. Requirements - Solvent Cleaning Machine

Any person who owns, operates, or uses any solvent cleaning machine shall comply with the applicable provisions of Rule 321, Solvent Cleaning Machines and Solvent Cleaning.

Comment [A159]: Added to clarify that Rule 321 provisions apply to solvent cleaning machines when used in conjunction with surface coating of aerospace vehicles and components.

Click here to return to the list of Appendices in the Background Paper.

Appendix F
Santa Barbara County
Annotated Proposed Amended Rule 349, Polyester Resin Operations

RULE 349. POLYESTER RESIN OPERATIONS. (Adopted 4/27/1993, revised [*date of amended rule adoption*])

A. Applicability

This rule shall apply to any person owning or operating any ~~all~~ commercial ~~and~~ or industrial polyester resin operation~~s~~.

B. Exemptions

1. Section D.1, shall not apply to the addition or use of styrene, provided the volume of styrene used is less than 50 gallons per calendar year per stationary source. Any person claiming this exemption shall maintain ~~monthly~~ styrene usage records of the total volume (gallons) of styrene used per calendar year consistent with Sections F.6 and make them available to the District for review upon request. At a minimum, when using compliant materials, the records shall be kept on a monthly basis; and when using noncompliant materials, the records shall be kept on a daily basis.

2. This rule shall not apply to any cleaning performed with a solvent (including emulsions) that contains two percent by weight or less of each of the following:

   a. Reactive organic compounds, and

   b. Toxic air contaminants (as determined by generic solvent data, solvent manufacturer's composition data or by a gas chromatography test and a mass spectrometry test).

   c. Any person claiming this exemption shall maintain the records specified in Sections F.1.a and F.1.f in a manner consistent with Section F.7 and make them available for review.

3. This rule shall not apply to polyester resin operations performed with polyester resin materials that contain no reactive organic compounds.

4. Section H shall not apply to any of the following:

   a. Cleaning of semiconductor and microelectromechanical devices undergoing manufacturing processes involving thin film deposition, vacuum deposition, dry etching, or metal lift-off operations; including any maintenance activities associated with such operations; ~~and~~

   b. Cleaning of electronic components; ~~and~~

   c. Cleaning of encasements, including decoy shells or box casings, for electronic components that have a total surface area that is less than 2 square feet; ~~and~~

   d. Cleaning of parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine); ~~and~~

   e. Cleaning of transparencies, polycarbonate, or glass substrates; ~~and~~

Comment [A160]: The July 25 draft included a lead-in sentence. Workshop attendees and CAC members indicated on Aug. 10 that the wording was confusing. Hence, staff re-wrote the exemption section for improved clarity.

Comment [A161]: Monthly records will:
1. Substantiate the exemption during the calendar year, and.
2. Alert sources when they are encroaching on the 50 gal/year threshold.

Comment [A162]: The daily recordkeeping provision was added for consistency with the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies."

Comment [A163]: Essentially the same as the Rule 321.B.1 exemption.

f. Cleaning of solar cells, coated optics, laser hardware, scientific instruments, high-precision optics, telescopes, avionic equipment, microscopes, and military fluid systems; ~~and~~

g. Cleaning or stripping of coating overspray from personal protective equipment; ~~and~~

h. Cleaning of space vehicles.

5. Section H shall not apply to polyester resin operations production or rework of the following products, provided the solvents used contain 200 grams of reactive organic compound per liter of material or less or have a reactive organic compound composite partial pressure of 45 millimeter of mercury at 20 degrees Celsius or less:

a. Satellites, satellite components, aerospace vehicles, aerospace vehicle components, aerospace vehicle payloads, or aerospace vehicle payload components.

6. Section H shall not apply to polyester resin operations production or rework of products used in any laboratory tests or analyses, including quality assurance or quality control applications, bench scale projects, or short-term (less than 2 years) research and development projects. To qualify for this exemption, the following records shall be maintained:

a. A list of all solvents used, which at a minimum includes the manufacturer's identification and the reactive organic compound content of each solvent.

b. For each short-term research and development project, the project description, date it commenced, and date it concluded.

c. Such records shall be retained in accordance with the provisions of Section F.7.

7. Section H shall not apply to cleaning or stripping of polyester resin material from personal protective equipment.

C. Definitions

See Rule 102, Definitions, for definitions not limited to this rule. For the purposes of this ~~R~~rule, the following definitions shall apply:

Comment [A164]: Our protocol is to change the lead-in sentences in this manner.

"Aerospace Vehicle or Component" means any fabricated part, processed part, assembly of parts, or completed unit of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles includes satellites.

"Associated Solvent" means any solvent used in a solvent cleaning machine or ~~in~~ for solvent cleaning ~~operations subject to this rule~~ performed in association with a polyester resin operation.

Comment [A165]: Staff revised the definition to avoid confusion when the "associated solvent" is exempt from the rule and to expand the definition to include solvents used in solvent cleaning machines.

"Atomized Resin Application" means any resin application technology in which the resin leaves the application equipment and breaks into droplets or an aerosol as it travels from the application equipment to the surface of the part. Atomized resin application includes, but is not limited to, resin spray guns and resin chopper spray guns.

"Bench Scale Project" means a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

~~1.~~ **"Catalyst"** ~~is a~~ means any substance added to the resin to initiate polymerization.

~~2.~~ **"Cleaning Materials"** include but are not limited to, materials used for cleaning hands, tools, molds, application equipment, and work area.

"Clear Gel Coat" means any gel coat that is clear or translucent so that underlying colors are visible. Clear gel coat is used to manufacture parts for sale. Clear gel coat do not include tooling gel coat used to build or repair molds.

"Compliant Material" means any polyester resin material that complies with the 1) applicable monomer content limits in Section D.1.a, D.1.b, or D.1.c, or 2) the D.1.d emission limit of grams per square meter of exposed surface area during resin polymerization; or any solvent that complies with the reactive organic compound content limit in Section H.

Comment [A166]: This term is used in Sections 349.B.1, F.4, and F.6.

~~3.~~ **"Closed Mold System"** ~~is a~~ means any method of forming objects from polyester resins by placing the polyester resin material in a confining mold cavity and applying pressure and/or heat.

"Control" means the reduction, by destruction or removal, of the amount of affected pollutants in a gas stream prior to discharge to the atmosphere.

~~4.~~ **"Control System"** ~~includes a control device and a collection system~~ means any combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of reactive organic compound or toxic air contaminant emissions generated by a regulated operation.

~~5.~~ **"Cross-Linking"** ~~is the~~ means any chemical process of chemically bonding two or more polymer chains together.

~~6.~~ **"Cure"** means to polymerize, i.e., to transform from a liquid to a solid or semi-solid state to achieve desired product physical properties, including hardness.

~~7.~~ **"Fiberglass"** ~~is~~ means a fiber made from glass and similar in appearance to wool or cotton fiber.

"Filler" means any finely divided inert (non-ROC) material that is added to the resin to enhance its mechanical properties and extend its volume. Fillers include, but are not limited to, silica, carbon black, talc, mica and calcium carbonate.

"Fire Retardant Resin" means any polyester resin material used to make products that are resistant to flame or fire.

"Fluid Impingement Technology" means any spray gun that produces an expanding nonmisting curtain of liquid by the impingement of low-pressure uninterrupted liquid streams.

~~8.~~ **"Gel Coat"** ~~is~~ means a polyester resin topcoat that provides cosmetic enhancement and improves resistance to degradation from exposure to the environment.

~~9. **Grams of ROC per liter of material** is the weight of ROC per volume of material and can be calculated by the following equation:~~

Comment [A167]: This term has been slightly modified and moved to Rule 102.

~~$$\text{Grams of ROC per liter of material} = \frac{(W_s - W_w - W_{es})}{V_m}$$~~

~~*Where:*~~

~~W_s = weight of volatile compounds in grams~~
~~W_w = weight of water in grams~~
~~W_{es} = weight of exempt compounds in grams~~
~~V_m = volume of material in liters~~

"High-Strength Resin" means any polyester resin material with a casting tensile strength of 10,000 pounds per square inch or more, used to manufacture high performance products.

~~10. **High Volume Low Pressure** means spray equipment used to apply coatings by means of a high volume of air delivered at pressures between 0.1 and 10 psi air pressure.~~

Comment [A168]: Replaced by the term "high volume low pressure spraying equipment" and relocated it to Rule 102.

~~11.~~ **"Inhibitor"** ~~is a~~ means any substance used to slow down or prevent a chemical reaction.

"Lamination Resins" means any orthophthalate, isophthalate and dicyclopentadiene resins used in composite system consisting of layers of reinforcement fibers and resins.

~~**"Liquid Leak"** means any solvent or polyester resin material leak at a rate of more than three drops per minute or any visible liquid mist.~~

Comment [A169]: The term is no longer used in the rule. Hence, the definition should be deleted.

~~12. **Low ROC Emissions Resin Systems** are polyester resin materials which contain vapor suppressants to reduce monomer evaporation loss.~~

"Maintenance Cleaning" means a solvent cleaning operation or activity carried out to keep clean general work areas where manufacturing or repair activity is performed, to clean tools, machinery, molds, forms, jigs, and equipment. This definition does not include the cleaning of adhesive, coating, or ink application equipment.

"Marble Resins" means any orthophthalate and modified acrylic isophthalate resins used for the fabrication of cast products.

"Mold" means any cavity or surface into or on which gel coat, resin, and fibers are placed and from which finished fiberglass parts take their form.

~~13.~~ **"Monomer"** ~~is an~~ means any organic compound that combines with itself, or other similar compounds to become a cured thermosetting resin (e.g., styrene).

Comment [A170]: Added for ease of understanding that **styrene** is a monomer.

"Non-Atomized Resin Application" means any application technology in which the resin is not broken into droplets or an aerosol as it travels from the application equipment to the surface of the part. Non-atomized resin application technology includes, but are not limited to, non-atomizing spray guns, flowcoaters, chopper flowcoaters, pressure fed resin rollers, resin impregnators, or fluid impingement technology.

"Noncompliant Material" means any polyester resin material that does not comply with the 1) applicable monomer content limits in Section D.1.a, D.1.b, or D.1.c, or 2) the D.1.d emission limit of grams per square meter of exposed surface area during resin polymerization; or any solvent that does not comply with the reactive organic compound content limit in Section H.

Comment [A171]: This term is used in Sections 349.B.1, F.4, and F.6.

"Open Molding Resin and Gel Coat Process" means any process in which the reinforcing fibers and resin are placed in the mold and are open to the surrounding air while the reinforcing fibers are saturated with resin. For the purpose of this rule, open molding includes operations in which a vacuum bag or similar cover is used to compress the uncured laminate to remove bubbles or excess resin, or to achieve a bond between core material and a laminate.

"Pigmented Gel Coat" means any opaque gel coat used to manufacture parts for sale. Pigmented gel coat does not include tooling gel coat used to build or repair molds.

~~14.~~ **"Polyester"** is a complex polymeric ester containing difunctional acids and alcohols dissolved in a monomer.

~~15.~~ **"Polyester Resin Materials"** include, but are not limited to, unsaturated polyester resins such as isophthalic, orthophthalic, halogenated, bisphenol- A, vinyl- ester, or furan resins; cross-linking agents;

catalysts, gel coats, inhibitors, accelerators, promoters, and any other ~~ROC~~ reactive organic compound containing materials in polyester resin operations.

~~16.~~ **"Polyester Resin Operations"** ~~are~~ means those methods used for the production or rework of products by mixing, pouring, hand lay-up, impregnating, injecting, forming, winding, spraying, and/or curing unsaturated polyester resin materials with fiberglass, fillers, or any other reinforcement materials and associated ~~cleanup~~ solvent cleaning.

~~17.~~ **"Polymer"** ~~is a~~ means any chemical compound comprised of a large number of chemical units and which is formed by the chemical linking of monomers.

"Primer Gel Coat" ~~: A~~ means any gel coat used to coat the surface of composite parts prior to top-coat painting in the automotive, aerospace, marine and home building industries.

~~**"Reactive Organic Compound"** as defined in Rule 102, Definitions.~~

~~18.~~ "**Repair"** ~~is that part of the fabrication process that requires the addition of polyester resin material to portions of a previously fabricated product in order to mend minor structural damage~~ means the process of returning a damaged object or an object not operating properly to good condition.

~~19.~~ **"Resin"** ~~is~~ means any of a class of organic polymers of natural or synthetic origin used in reinforced products to surround and hold fibers, and is solid or semi-solid in the cured state.

"Solid Surface Resins" means any resin used without gel coats to fabricate homogenous solid surface products.

"Solvent" means any liquid containing any reactive organic compound or any toxic air contaminant, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, drying agent, preservative, or other similar uses.

"Solvent Cleaning" means any activity, operation, or process (including, but not limited to, surface preparation, cleanup, or wipe cleaning) performed outside of a solvent cleaning machine, that uses solvent to remove uncured adhesives, uncured coatings, uncured inks, uncured polyester resin material, uncured sealant, or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment, and general work areas. Cleaning spray equipment used for the application of coating, adhesive, ink, polyester resin material, or sealant is also considered to be solvent cleaning irrespective of the spray material being cured.

"Solvent Cleaning Machine" means any device or piece of equipment that uses solvent liquid or vapor to remove soils, moisture, or other contaminants from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, batch cold, batch vapor, in-line cold, in-line vapor, remote reservoir, and gas-path solvent cleaners. Buckets, pails, and beakers with capacities of 3.785 liters (1.00 gallon) or less are not considered solvent cleaning machines. However, the use of such a container or similar containers (e.g., hand-held spray bottles) with a liquid solvent for cleaning is considered to be solvent cleaning. Any device or piece of equipment used exclusively for stripping shall not be considered to be a solvent cleaning machine.

"Space Vehicle" means any man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which through contamination can compromise the space vehicle performance.

"Specialty Gel Coat" means any gel coat which is used in conjunction with fire retardant, corrosion resistant, or high-strength materials.

Comment [A172]: **Solvent** and **solvent cleaning** are the same definitions found in Rule 321. **Solvent** includes any liquid containing any **toxic air contaminant.**

Comment [A173]: **Solvent, solvent cleaning**, and **solvent cleaning machine** are the same definitions found in Rule 321. **Solvent** includes any liquid containing any **toxic air contaminant.**

~~20.~~ **~~"~~Specialty Resin~~"~~** ~~is~~ means any halogenated, furan, bisphenol A, vinyl ester, or isophthalic resin used to make products for exposure to one or more of the following extreme environmental conditions: acute or chronic exposure to corrosive, caustic, acidic~~,~~ agents, or flame.

~~**"Stationary Source"** as defined in Rule 102, Definitions.~~

"Tooling Resin" means any resins used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which the molds will be made.

"Tooling Gel Coat" means any gel coat used to build or repair molds (also known as tools) or prototypes (also known as plugs) from which the molds will be made.

~~21. **Touch Up** is that portion of the fabrication process that is necessary to cover minor imperfections.~~

"Tub/Shower Resin" means any dicyclopentadiene resin, along with orthophthalate and isophthalate resins, used to fabricate bathware products.

~~22.~~ **~~"~~Vapor Suppressant~~"~~** ~~is a~~ means any substance added to resin to minimize the outward diffusion of monomer vapor into the atmosphere.

~~23.~~ **~~"~~Waste Materials~~"~~** include, but are not limited to any paper or cloth used for cleaning operations, waste resins, and any spent cleaning materials.

D. Requirements

1. Process and Control

~~Any~~ No person shall ~~operating~~operate a polyester resin operation unless the operation ~~shall comply~~ complies with one or more of the following, as applicable.

a. Before [*24 months after the date of amended rule adoption*], ~~Use~~ use polyester resin material with monomer content of no more than 35 percent by weight as applied and as determined by the manufacturer's specification. This requirement shall not apply to gel coats, provided the monomer content does not exceed 45 percent by weight for pigmented gel coats and does not exceed 50 percent by weight for clear gel coats. On and after [*24 months after the date of amended rule adoption*], use materials that comply with the limits in Table 349-1; or,

b. Before [*24 months after the date of amended rule adoption*], ~~Use~~ use specialty resin with a monomer content of no more than 50 percent by weight as applied and as determined by the manufacturer's specification. On and after [*24 months after the date of amended rule adoption*], use materials that comply with the limits in Table 349-1; or,

c. On and after [*24 months after the date of amended rule adoption*], use polyester resin material that comply with the limits shown in Table 349-1 below when using the open molding resin and gel coat process; or

Table 349-1: Monomer Content Limits for Polyester Resin Materials

Polyester Resin Material	**As-Applied Monomer Content Limits (Percentage, by Weight)**
Clear Gel Coat	
For Marble Resins	40%
All Other Resins	44%

Comment [A174]: The Air Resources Board suggested we lower the monomer content limits and emission limit for vapor suppressed resins. They also suggested we increase the add-on control equipment efficiency to 90%. The District is proposing a 24-month phase-in period for these new requirements.

Polyester Resin Material	**As-Applied Monomer Content Limits (Percentage, by Weight)**
Pigmented Gel Coat	
White and Off White	30%
Non-White	37%
Primer	28%
Specialty Gel Coat	28%
Tooling Gel Coat	40%
General Purpose Resin	
Lamination Resins	31% or 35%, as supplied, with no fillers
Marble or Cultured Resins	10% or 32%, as supplied, with no fillers
Solid Surface Resins	17%
Tub/Shower Resins	24% or 35%, as supplied, with no fillers
Specialty Resin	
Corrosion Resistant Resin	48%
Fire Retardant Resin	38%
High Strength Resin	40%
Tooling Resin	
Atomized (spray)	30%
Non-atomized	39%
All Other Resin	35%

d. Before [*24 months after the date of amended rule adoption*], ~~Use~~use a resin containing a vapor suppressant, such that the weight loss from ~~ROC~~ reactive organic compound emissions does not exceed 60 grams per square meter of exposed surface area during resin polymerization~~.~~. On and after [*24 months after the date of amended rule adoption*], ~~the vapor suppressed resin limit shall be~~ use a resin containing a vapor suppressant, such that the weight loss from reactive organic compound emissions does not exceed 50 grams per square meter of exposed surface area during resin polymerization. The "grams per square meter of exposed surface area during resin polymerization" shall be ~~as~~ determined by the test method specified in Section E.~~1~~2; or,

~~d~~e. Use a closed mold system; or,

~~e~~f. Install and operate an add-on ~~emission~~ control system~~, which is designed and operated in a manner that reduce uncontrolled emissions by at least 85 percent.~~ provided all of the applicable requirements below are met. Any person installing such control system shall obtain an Authority to Construct from the District prior to installation.

i. Before [*24 months after the date of amended rule adoption*], the overall efficiency (the capture efficiency multiplied by the control device efficiency) of the total system shall be at least 85 percent, by weight. On and after [*24 months after the date of amended rule adoption*] the overall efficiency shall be at least 90 percent, by weight. Alternatively, the control device reactive organic compound exhaust concentration shall not exceed 10 parts per million by volume as propane or other limit approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

ii. Combustion temperature shall be continuously monitored when operating a thermal incinerator.

iii. Inlet and exhaust gas temperatures shall be continuously monitored when operating a catalytic incinerator.

iv. Control device efficiency shall be continuously monitored when operating a carbon adsorber or a control device other than a thermal or catalytic incinerator.

v. Compliance through the use of an emission control system shall not result in affected pollutant emissions in excess of the affected pollutant emissions that would result from compliance with Sections D.1.a - D.1.d or H.

Comment [A175]: Subsections i - iv mirror Rule 353.I provisions.

Comment [A176]: Similar to Rule 321.N.6. (**Reactive organic compound** changed to **affected pollutant** to include TACs.)

2. Spray Application Methods

~~Any~~ No person ~~operating~~ shall apply ~~a polyester resin operation shall, when applying~~ polyester resin materials ~~by~~ in a spraying operation~~,~~ unless the application is performed with equipment operating according to the manufacturers operating guidelines. ~~use only~~ In addition, the application method employed shall be one of the following:

a. ~~a~~Airless, or

b. ~~a~~Air-assisted airless, or

c. ~~h~~High volume~~-~~ low pressure spraying equipment, or

d. ~~e~~Electrostatic spray equipment, or

e. Any other spray application method ~~as~~ approved by the Control Officer, the Air Resources Board, and the Environmental Protection Agency. ~~and operated in accordance with the manufacturer's recommendations.~~

3. ~~Storage and Disposal~~General Operating

~~A person operating a polyester resin operation shall use closed containers to store all polyester resin materials, cleaning materials, and any unused ROC-containing materials except when accessed for use.~~Any person who owns or operates any polyester resin operation equipment or uses any associated solvent subject to this rule shall meet the following requirements:

a. All polyester resin materials and cleaning materials, used or unused, shall be stored and disposed of in nonabsorbent and nonleaking containers equipped with tight-fitting covers. All covers shall be in place unless adding material to or removing material from the containers, the containers are empty, or doing maintenance/inspection of the containers. ~~After distillation recovery of solvent, waste solvent residues shall not contain more than 20 percent of reactive organic compound by weight as determined by the test method specified in Section E.8.~~

b. All application equipment, ventilation system, and emission control equipment shall be installed, operated, and maintained consistent with the manufacturer's specifications.

c. Waste solvent, waste solvent residues, and any other waste material that contains reactive organic compounds shall be disposed of by one of the following methods:~~All containers holding polyester resin materials and cleaning materials shall be free of liquid leaks. All application equipment, solvent distillation units, and gun washers shall not have any liquid leaks, visible tears, holes, or cracks. Any such liquid leak, visible tear, hole, or crack is a violation of this rule.~~

~~Any liquid leak, visible tear, hole, or crack that is detected shall be repaired within one day from discovery, or the equipment shall be drained of all polyester resin materials or cleaning materials, consistent with Section D.3.a provisions, and shut down until replaced or repaired. Application equipment, solvent distillation units, and gun washers shall not be operated when leaking.~~

i. A commercial waste solvent reclamation service licensed by the State of California.

ii. At a facility that is federally or state licensed to treat, store or dispose of such waste.

iii. Recycling in conformance with Section 25143.2 of the California Health and Safety Code.

d. All covers, valves, drain plugs, and other closure devices designed to reduce polyester resin material and cleaning material evaporation shall not be removed or opened except to process work or to perform monitoring, inspections, maintenance, or repairs that require the removal of the covers or other closure devices.

e. Any spills of polyester resin materials or cleaning materials shall be wiped up immediately and the used absorbent material (e.g., cloth, paper, sand, sawdust, etc.) shall be stored in closed containers that are handled in accordance with Section D.3.a.

f. The handling and transfer of ~~coatings~~ polyester resin materials and cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent coatings and cleaning solvents shall be conducted in such a manner to minimize spills.

Comment [A177]: The **housekeeping** provisions are similar to requirements found in Rule 321.D.

g. Containers used to store ~~coating~~polyester resin material, solvent, or any waste material that contains reactive organic compounds subject to this rule shall be marked or clearly labeled indicating the name of the material they contain.

E. Compliance Provisions and Test Methods

1. ~~Compliance with Section D.1.a or D.1.b~~ Polyester resin material monomer contents shall be ~~determined~~ measured using ASTM ~~method~~ D2369-~~81~~95, "Standard Test Method for Volatile Content of Coatings," ASTM International. Material tested shall be non-catalyzed.

2. ~~Compliance with Section D.1.c~~ The weight loss from reactive organic compound emissions shall be ~~determined~~ measured by laboratory static tests, "Static Method for Determination of Volatile Emissions from Polyester and Vinyl Ester Resins," as described in Attachment A.

3. ~~Capture efficiency determinations~~ The capture efficiency for reactive organic compound emissions ~~required in Section D.1.d~~shall be ~~based on criteria set forth by EPA in 40 CFR 52.741~~ determined by verifying the use of a Permanent Total Enclosure and 100 percent capture efficiency as defined by Environmental Protection Agency Method 204, **"**Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if an Environmental Protection Agency Method 204 defined Permanent Total Enclosure is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the Environmental Protection Agency technical guidance document **"**Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the Environmental Protection Agency technical guidelines shall be determined by:

a. The Temporary Total Enclosure approach of Environmental Protection Agency Methods 204 through 204F; or

b. The South Coast Air Quality Management District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency," May 1995.

Comment [A178]: EPA recommended that the District model the provisions on SC Rule 1122(h)(7)(A) text.

4. ~~Control efficiency determinations~~ The control device efficiency for reactive organic compound emissions ~~required in Section D.1.d~~shall be ~~made using EPA Method 25 or 25A. Gas flow rate measurements in pipes or small ducts shall be made using EPA Method 2A.~~ determined by Environmental Protection Agency Methods 25, 25A, the South Coast Air Quality Management District Method 25.1, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon," February 1991, or the South Coast Air Quality Management District Method 25.3, "Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources," March 2000, as applicable. Environmental Protection Agency Test Method 18 or Air Resources Board Method 422, "Exempt Halogenated VOCs in Gases," September 12, 1990, shall be used to determine emissions of exempt compounds.

Comment [A179]: EPA suggested that this provision mirror the SC Rule 1122(h)(7)(B) text.

5. Solvent reactive organic compound content shall be measured by the Environmental Protection Agency Reference Method 24, its constituent methods, or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer. The determination of exempt compounds shall be performed in accordance with ASTM D 4457-1991, "Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph," ASTM International. Alternatively, determination of exempt compounds may be performed in accordance with the South Coast Air Quality Management District Method 303-91, "Determination of Exempt Compounds," August 1996. The reactive organic compound content of materials containing 50 grams of reactive organic compound per liter or less shall be determined by the South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

Comment [A180]: EPA recommended referring to SC Method 313 for determining ROC content of materials containing < 50 g/l.

6. The capture efficiency for toxic air contaminant emissions that are not reactive organic compounds shall be determined by using the methods described in Section E.3 modified in a manner approved by the Control Officer to quantify the mass of liquid or gaseous reactive organic compounds and/or toxic air contaminants.

Comment [A181]: Similar to the Rule 321.P.3 requirements.

7. The control device efficiency for toxic air contaminant emissions that are not reactive organic compounds shall be determined using:

a. an Environmental Protection Agency approved test method or methods, or

b. in the case where there is no Environmental Protection Agency approved test method, a Control Officer approved detection method applicable for each target toxics specie.

c. the Control Officer may require more than one test method on any emission control device where necessary to demonstrate that the overall efficiency is at least 85 percent by weight in reducing emissions of reactive organic compounds and/or toxic air contaminants. Any technique to convert "parts per million by volume" test method results to either 1) "parts per million by weight," or 2) "mass emission rates" (e.g., pounds per hour) shall first be approved by the Control Officer and, if such approval is not provided, then the technique shall not be used to show compliance with this rule.

Comment [A182]: Essentially the same as Rule 321.P.4 provisions.

8. ~~Solvent waste residue reactive organic compound content shall be determined by using Environmental Protection Agency Test Method 25D or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.[Reserved]~~ Emissions of reactive organic compounds from the exhaust of an emission control system shall be measured by the Environmental Protection Agency Method 25, in combination with Environmental Protection Agency Method 18 or the California Air Resources Board Method 422,

"Exempt Halogenated VOCs in Gases," September 12, 1990 (to determine emissions of exempt compounds).

9. When more than one test method or set of test methods are specified for any testing, a test result showing an exceedance of any limit of this rule shall constitute a rule violation.

10. The Environmental Protection Agency test methods in effect on [*date of amended rule adoption*] shall be the test methods used to meet the requirements of this rule.

F. Recordkeeping

Any person subject to this rule shall comply with the following requirements~~:~~. Any owner or operator of any stationary source comprised of more than one facility may comply with the following requirements on a facility basis.

1. ~~A person shall m~~Maintain a current ~~list~~ file of ~~resins and cleaning~~ all reactive organic compound-containing materials in use at the stationary source subject to this rule. [~~which~~ The file shall provide~~s~~ all of the data necessary to evaluate compliance and shall include~~, including~~ the following information, as applicable:

   a. the type of resin, catalyst, and cleaning materials used (e.g., brand name, stock identification number)~~.~~;

   b. ~~the weight percent of ROC in each of the polyester resin materials, and the grams of ROC per liter for the cleaning materials~~If applying polyester resin materials in spraying operations, indicate the spray application method used (e.g., airless, air-assisted airless, etc.);

   c. for approved vapor suppressed resins, the weight loss (grams per square meter) during resin polymerization, the monomer percentage, and the gel time for each resin~~.~~;

   d. if mixing solvents, specific solvent mixing data (e.g., component volumes or weights) of each component for each batch sufficient to determine the mixture's reactive organic compound content;

   e. the actual as applied reactive organic compound content of the solvent used and, when not using ~~the~~ a closed mold system, the corresponding monomer content limits from Sections D.1.a, b, or c, and the actual as applied monomer contents; or if complying using a vapor suppressant, the actual ~~as applied~~ polyester or vinyl ester resin weight loss rate of the materials used; and

   f. current polyester resin material and solvent manufacturer specification sheets, Material Safety Data Sheets, product data sheets, or air quality data sheets, which list the reactive organic compound content of each material in use at the stationary source subject to this rule. Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container.

2. Maintain records for each reactive organic compound-containing material purchased for use at the stationary source. The records shall include, but not be limited to, the following:

   a. material name and manufacturer identification (e.g., brand name, stock identification number); and

   b. material type (e.g., ~~air dried or baked enamel, powder coating, extreme performance coating~~polyester resin material type as specified in Table 349-1, cleanup solvent, etc.)~~.~~;

Comment [A183]: Added per the EPA recommendation in the Technical Support Document for SJV Rule 4605 (June 2009).

Comment [A184]: The District added this in response to an Industry comment received during the Aug. 10, 2011 workshop.

Comment [A185]: Our protocol is to specify requirements are on a **stationary source** basis.

Comment [A186]: Essentially the same text found in Rule 353.O.1.

Comment [A187]: This data is now required by §F.1.e.

Comment [A188]: Similar to the recordkeeping provisions in PARs 330, 337, and 353.

Comment [A189]: Added in response to a comment by VAFB.

~~c. volume of material purchased;~~

~~d. date of purchase; and~~

~~e. receipts of each purchase.~~

3. Maintain records of the disposal method ~~of disposal~~ each time waste solvent, ~~or~~ waste solvent residue, or other waste material that contain reactive organic compounds is removed from the stationary source for disposal.

4. For each material listed in response to Section F.1.a, maintain, at a minimum, on a monthly basis for compliant material and on a daily basis for noncompliant material, a record of the following:

a. volume used (gallons per day, gallons per month);

b. polyester resin material as-applied weight percent of monomer ~~or~~ and the cleaning material reactive organic compound content (grams per liter or pounds per gallon); ~~and~~

c. polyester resin material reactive organic compound emission factors (lb/lb or lb/gal); and

d. resulting reactive organic compound emissions (pounds per day, pounds per month).

~~For permitted stationary sources, all records required by this Subsection and Subsection F.1 shall be summarized for each calendar year and submitted to the District by March 1 of the following year. The annual report shall include the name and address of the Permittee, and the Permit to Operate number that the polyester resin operations are subject to (if permitted), and/or a statement that the annual report includes non-compliant polyester resin material usage information.~~

~~2~~5. ~~Any person using add-on~~ For any stationary source that uses emission control equipment to meet the requirements of this rule ~~shall maintain~~ daily records of key operating parameter~~s~~ values and maintenance procedures that ~~verify~~ demonstrate~~that the control equipment was operating properly for each day of operation~~ continuous operation and compliance of the emission control system during periods of emission producing activities shall be maintained. These parameters shall include, but not be limited to:

a. Hours of operation;

b. All maintenance work that requires the emission control system to be shut down; and

c. All information needed to demonstrate continuous compliance with Section D.1.f, such as temperatures, pressures, and/or flow rates.

.

6. Any person claiming an exemption under Section B.1 shall maintain, at a minimum, monthly records for compliant material and daily records for noncompliant material of styrene volumes used in gallons per day and/or gallons per month to support the claim of exemption.

~~3~~7. ~~Such records shall be retained for the previous 24 month period and be available to the District upon request.~~Any records required to be maintained pursuant to this rule shall be kept on site for at least 2 years unless a longer retention period is otherwise required by state or federal regulation(s). Such records shall be kept on site and be readily available for ~~expeditious~~ inspection and review by the District.

~~8. If an operator or District staff discovers a liquid leak in a container holding polyester resin material or solvent, or a liquid leak, visible tear, hole, or crack in application equipment, a solvent distillation unit, or in a gun washer, the operator shall record:~~

Comment [A190]: Revised to show "Section F.1.a" to exclude MSDSs per clarification request received during the August 10, 2011 workshop.

Comment [A191]: The daily recordkeeping provision was added for consistency with the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies."

Comment [A192]: Moved the annual reporting requirements to Section I per industry suggestion.

Comment [A193]: Subsections a - c are from Rule 321.R.1.c.

Comment [A194]: The daily recordkeeping provision was added for consistency with the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies."

Comment [A195]: During the CAC meeting on August 10, a concern about the need to maintain records for 5 years was raised. Staff discovered that EPA had modified its 5 year recordkeeping policy. Hence, per the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies," 2 years record retention is acceptable for sources not subject to Title V permitting or a MACT standard.

~~a. the date of discovery;~~

~~b. the corrective action taken; and~~

~~c. the date of repair or equipment replacement.~~

G. Compliance Schedule

~~A person who is subject to the requirements of this determination shall be in compliance by April 27, 1994. Except as otherwise specified, the provisions of this rule are effective on [*date of amended rule adoption*].~~

Any person who owns or operates any polyester resin operation equipment subject to this rule shall meet the following compliance schedule:

1. By [*30 days from the date of amended rule adoption*], comply with Section D.3, General Operating.

2. By [*six months from the date of amended rule adoption*], comply with the recordkeeping provisions in the following Sections:

   a. F.1.d - mixing volumes,

   b. F.1.e - solvent reactive organic compound content data, polyester resin material monomer contents (when not using a closed mold system), and/or actual weight loss rate data (when using a vapor suppressant),

   c. F.1.f - manufacturer specification sheets, Material Safety Data Sheets, air quality data sheets, or manufacturer specification listings on product container,

   d. F.2 - purchase records,

   e. F.3 - waste disposal records, and

   f. F.4 - polyester resin material reactive organic compound emission factor records and daily records for noncompliant materials.

3. By [*12 months from the date of amended rule adoption*], comply with the Section H and Section J requirements.

4. By [*24 months from the date of amended rule adoption*], comply with any applicable Section D provisions that have a phased-in effective date.

5. By [*date of amended rule adoption*], comply with all other provisions of this rule.

Comment [A196]: The compliance schedule provision was expanded in response to a request from Industry.

H. Requirements – Solvent Cleaning

Comment [A197]: Section H stems from similar **solvent cleaning** provisions in Rule 321.M.

Section H requirements apply to any person performing solvent cleaning associated with polyester resin operations, including, but not limited to, use of wipe cleaning cloths, hand-held spray bottles, squirt bottles, aerosol products, and the cleaning of application equipment. The following requirements become effective [*one year from the date of amended rule adoption*] and are in addition to the general operating requirements specified in Section D.3.

1. **Solvent Requirements.** Except when using an emission control system that meets the requirements of Section D.1.e, no person shall use any solvent to perform solvent cleaning which exceeds the applicable grams of reactive organic compound per liter of material limit specified in Table 349-2.

Comment [A198]: Both ARB and EPA recommend a 25 g/l limit on the solvent's ROC content.

Table 349-2: Reactive Organic Compound Content Limits for Solvent Cleaning

SOLVENT CLEANING ACTIVITY	ROC Limit, grams of ROC per liter of material (pounds of ROC per gallon)
(a) Product Cleaning During Manufacturing Process or Surface Preparation for Coating Application	25 (0.21)
(b) Repair and Maintenance Cleaning	25 (0.21)
(c) Cleaning of Polyester Resin Application Equipment	25 (0.21)

I. Reporting Requirements

Submittal of an annual report to the District is required if a person holds a permit for equipment subject to the requirements of this rule. The annual report shall be due March 1 and it shall contain the following information for the previous calendar year:

1. monthly records required by Section F.4.

2. annual totals (gallons) based on each of the polyester resin materials' and cleaning materials' monthly data.

3. if claiming the Rule 349.B.1 exemption, monthly totals of styrene (gallons) used per Section F.6 and the yearly total amount (gallons) of styrene used, and

4. name and address of the company or agency and the Permit to Operate number that the polyester resin operation is subject to.

Comment [A199]: The annual report provision was relocated from Section F.5 to a stand-alone section per an Industry suggestion.

J. Requirements - Solvent Cleaning Machine

Any person who owns, operates, or uses any solvent cleaning machine shall comply with the applicable provisions of Rule 321, Solvent Cleaning Machines and Solvent Cleaning.

Comment [A200]: Added to clarify that Rule 321 provisions apply to solvent cleaning machines when used in conjunction with polyester resin operations.

ATTACHMENT A

STATIC METHOD FOR DETERMINATION OF VOLATILE EMISSIONS FROM

POLYESTER AND VINYL ESTER RESINS

1. PURPOSE

1.1 This test is designed for the determination of volatile organic compound emissions of polyester and vinyl ester resins as received from the manufacturer, according to requirements of California's South Coast Air Quality Management District ~~(SCAQMD) proposed Rule 1162 amendment published July 17, 1990~~Method 309-91, Determination of Static Volatile Emissions, revised February 1993.

Comment [A201]: **Attachment A** changes align the procedures to this text method.

1.2 This test allows fabricators using polyester and vinyl ester resins to monitor volatile organic compound emissions (principally styrene monomer) from resins used in the fabrication process. The results are to be reported as volatile organic compound losses in grams per square meter (gm/m^2).

2. METHOD

The weight of a one gallon can lid filled with 100 ~~gm~~ grams of resin is accurately measured over a period of time. The measurement is made on resin catalyzed with peroxide initiators to determine weight losses attributed to monomer and other volatile organic compound emissions.

3. EQUIPMENT REQUIREMENTS

3.1 Controlled environment at 25.0 ~~C~~ degrees Celsius and humidity of 50~~% R.H~~ percent relative humidity. If controlled environment is not available, report condition under which measurements are made.

3.2 **Balance** with an accuracy of 0.01 ~~gm~~gram.

3.3 **Draft free enclosure** for balance. This can be achieved by placing the balance in a four sided enclosure that extends a minimum of eight inches above the top of the balance.

3.4 **Gallon can lid** with deep form sufficient to contain 100 ~~gm~~ grams of resin, having a normal diameter of 14.5 ~~cm~~centimeters.

3.5 **Certified or calibrated thermometer** capable of measurements accurate to 1 degree ~~C~~Celsius.

3.6 **Constant temperature** bath controlled at 25 ~~°C~~ degrees Celsius to adjust resin temperature to 25~~°C~~ degrees Celsius.

3.7 **Timer** - capable of recording time to 0.1 minute.

3.8 **Paper clip** - bent to approximately 90° degree angle.

3.9 **Syringe or pipette** accurate to 0.1 ~~ml~~ milliliter for peroxide catalyst addition.

4. PROCEDURE

4.1 Weigh out 200 ~~gm~~ grams of prepromoted resin into a suitable dry and clean container. Wax cups should not be used for this test.

4.2 Cover container and place in constant temperature bath and adjust resin temperature to 25~~°C~~ degrees Celsius.

4.3 Place balance in draft free enclosure.

4.4 Clean gallon lid with solvent, wipe dry and air dry and measure diameter to the nearest 0.1 ~~cm~~centimeter.

4.5 Place gallon can lid on an inverted paper or plastic cup mounted on the balance pan. Position bent paper clip in the center of the gallon can lid. Record TARE WEIGHT to 0.01 ~~gm~~gram.

4.6 Take container with resin from water bath and add appropriate volumetric or weight measure of catalyst using syringe or pipette. Start timer. ~~(continued)~~

4.7 Using stirring rod or thermometer, mix in catalyst for one minute.

4.8 Pour 100.0 ~~+/-~~ plus or minus 0.5 ~~gm~~ gram of catalyzed resin into can lid and record weight to ~~+/-~~ plus or minus 0.01 ~~gm~~gram. This is the INITIAL WEIGHT.

4.9 Using paper clip, determine when resin has hardened sufficiently to allow resin or lid to be lifted or the gel to be torn.

4.10 Record this as gel time.

4.11 Allow resin to harden in can lid and reweigh every 15 minutes until concurrent weighing agrees to within 0.05 ~~gm~~gram. Record this as FINAL WEIGHT to ~~+/-~~ plus or minus 0.01 ~~gm~~gram.

4.12 Procedure should be repeated until duplicate samples agree to the nearest 5 ~~gm per m²~~ grams per meter^2.

5. CALCULATION

5.1 Volatile Organic Compound Emissions per Square Meter

$$\textit{Area of Gallon Can Lid in } m^2 = \frac{(d/2)^2 \times 3.14}{10{,}000 \text{ cm}^2 / \text{m}^2}$$

~~Area of Sample in Square Meter = (d/2)² * 3.14~~

Where: d = diameter of the gallon can lid in centimeters (cm)
3.14 = value of Pi
cm^2 = square centimeters
m^2 = square meters

Volatile Organic Compound Losses, Grams per Square Meter =
INITIAL WEIGHT - FINAL WEIGHT
Area of ~~Sample~~ Gallon Can Lid in Square Meters

5.2 Percent Volatile Organic Compound Emission =
INITIAL WEIGHT - FINAL WEIGHT x 100
INITIAL WEIGHT - TARE WEIGHT

6. REPORTING REQUIREMENTS

6.1 Ambient temperature and humidity.

6.2 Resin identification and batch number.

6.3 Initiator system and amounts used.

6.4 Volatile organic compound losses as grams per square meter.

6.5 Percent volatile organic compound emission.

6.6 Gel time under conditions of test.

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Appendix G
Santa Barbara County
Annotated Proposed Amended Rule 353, Adhesives and Sealants

RULE 353 ADHESIVES AND SEALANTS. (Adopted 8/19/1999, revised [*date of amended rule adoption*])

A. Applicability

This rule is applicable to any person who supplies, sells, offers for sale, distributes, or manufactures~~, solicits the application of~~ any adhesive product or sealant product for use within the District, as well as to any person who~~, or~~ uses, applies, or solicits the use or application of any adhesive~~s~~ product, ~~adhesive bonding primers, adhesive primers,~~ sealant~~s~~ product, ~~sealant primers, or any other primers~~or associated solvent within the District~~, unless otherwise specifically exempted by this rule~~.

B. Exemptions

~~1. The provisions of this rule shall not apply to the following:~~

~~a~~1. This rule shall not apply to ~~A~~adhesives and associated solvents used in tire repair operations, provided a label on the adhesive used states "For Tire Repair Only."

~~b~~2. This rule shall not apply to ~~A~~adhesives and associated solvents used in the assembly and manufacturing of undersea-based weapon systems.

~~c~~3. Provisions of Sections D, E, G.1, and H. shall not apply to any ~~A~~adhesive~~s~~ products, ~~adhesive bonding primers, adhesive primers, sealants,~~ sealant ~~primers~~ products, and any associated solvent~~or any other primers being tested or evaluated~~ used in any laboratory tests or analyses, including quality assurance or quality control applications, bench scale projects, or short-term (less than 2 years) research and development projects~~, quality assurance, or analytical laboratory,~~ . To qualify for this exemption, ~~provided that~~ the following records shall be ~~are~~ maintained ~~and made available to District personnel for a period of at least five (5) years~~:

~~1)~~a. A list of all such materials used, which at a minimum includes the manufacturer's identification, the product category of the material or type of application, and the reactive organic compound content of each material.

~~2)~~b. For each short-term research and development project, the project description, date it commenced, and date it concluded.

c. Such records shall be retained in accordance with the provisions of Section O.~~4~~6 ~~of this rule~~.

~~d~~4. This rule shall not apply to ~~S~~solvent welding operations and associated cleaning solvents used in the manufacturing of medical devices, such as, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheotomy tubes, blood oxygenators, and cardiatory reservoirs.

~~e. Plaque laminating operations where adhesives are used to bond a clear, polyester acetate laminate to wood with lamination equipment installed prior to July 1, 1992. Any person seeking to claim this exemption shall notify the Control Officer in writing that a complying adhesive is not~~

Comment [A202]: Adding **or associated solvent** extends the applicability to solvent cleaning. This change stems from a commitment in the 2010 Clean Air Plan.

Comment [A203]: The July 25 draft included a lead-in sentence. Workshop attendees and CAC members indicated on Aug. 10 that the wording was confusing. Hence, staff re-wrote the exemption section for improved clarity.

Comment [A204]: [Reserved.]

Comment [A205]: Modeled on the Rule 321.B.8.b exemption.

Comment [A206]: Substantiates that R&D projects are short-term.

~~available.~~

~~f~~5. This rule shall not apply to ~~A~~adhesive~~s~~ product and ~~, adhesive bonding primers, adhesive primers, sealants,~~ sealant ~~primers~~ product~~, or any other primers~~ coating operations and associated solvent use ~~regulated by either of~~ that are subject to any of the following District rules~~, provided the rule has been approved as part of the State Implementation Plan by the Environmental Protection Agency~~.

~~1)~~a. Rule 337, Surface Coating of ~~Aircraft or~~ Aerospace Vehicle~~s~~ ~~Parts~~ and ~~Products~~Components.

~~2)~~b. Rule 354, Graphic Arts.

~~g~~6. This rule shall not apply to ~~A~~adhesive~~s~~ products and ~~, adhesive bonding primers, adhesive primers, sealants,~~ sealant ~~primers~~ products ~~, or any other primers~~ that contain less than 20 grams of reactive organic compound per liter (0.17 pounds of reactive organic compound per gallon) of adhesive or sealant, less water and less exempt compounds, as applied. ~~Solvents used in association with adhesive products and/or sealant products exempt by this provision are also exempt from the requirements of Sections C.1 and H.~~

~~h~~7. ~~This~~ Except for Section J, the rule shall not apply to ~~C~~cyanoacrylate adhesives.

~~i~~8. Except as otherwise specified in Section B.10.c, this rule shall not apply to ~~A~~adhesive~~s~~ products and ~~, adhesive bonding primers, adhesive primers, sealants,~~ sealant ~~primers~~ products, ~~or any other primers,~~ which are sold or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less.

~~2~~9. ~~The provisions of this rule, e~~Except for Section~~s~~ J, K, ~~(Prohibition of Sales)~~L, M, O.3, ~~and~~ O.6, this rule shall not apply ~~if the~~ to any stationary source that has total reactive organic compound emissions less than 200 pounds per calendar year from adhesive products ~~, adhesive bonding primers, adhesive primers,~~ sealant products, associated solvents, and strippers~~sealant primers, or any other primers, applied at the stationary source are less than 200 pounds per calendar year.~~ Associated solvents and strippers used for operations that are exempt per Sections B.1 - B.4, B.11, and B.13 shall not be included in calculating the total reactive organic compound emissions under this exemption. Any person claiming this exemption shall record and maintain ~~monthly~~ operational and emission records that ~~can substantiate this claim~~document compliance. At a minimum, when using compliant materials, the records shall be kept on a monthly basis; and when using noncompliant materials, the records shall be kept on a daily basis. ~~Further, the records shall be made available to District personnel for a period of at least five (5) years.~~ All ~~Such~~ records kept to substantiate the exemption claim shall be retained in accordance with the provisions of Section O.6.

Comment [A207]: The daily recordkeeping provision was added for consistency with the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies."

~~3~~10. The sales prohibition in Sections K.1 and K.2 of this rule shall not apply to:

a. Any supplier or seller of any adhesive product (including aerosol adhesive), ~~adhesive bonding primer, adhesive primer, sealant,~~ or sealant ~~primer~~ product ~~, or any other primer~~ where the supplier or seller:

1) Ships the product outside of Santa Barbara County for use outside of Santa Barbara County.

2) Provides product to a user who has installed a District permitted reactive organic compound add-on control device.

b. Any manufacturer of any adhesive product (including aerosol adhesive) or ~~, adhesive bonding primer, adhesive primer, sealant,~~ sealant ~~primer~~ product ~~, or any other primer,~~ if

the manufacturer has provided the maximum volatile organic compound content per Section L ~~of this rule~~ and if:

1) The product was not sold directly to a user or a sales outlet located in Santa Barbara County, or

2) The product was sold to an independent distributor that is not a subsidiary of, or under the direct control of, the manufacturer.

c. The sale of any adhesive product (including aerosol adhesive) or~~, adhesive bonding primer, adhesive primer, sealant,~~ sealant ~~primer~~ product, ~~or any other primer,~~ except plastic cement welding adhesives, if:

1) The product is sold in any container(s) having a capacity of 16 fluid ounces or less (net volume) or one pound or less (net weight); and

2) The total net weight or volume of two or more containers packaged together must be equal to or less than one pound or 16 fluid ounces, respectively, to qualify for this exemption.

11. This rule shall not apply to any cleaning performed with a solvent (including emulsions) that contains two percent by weight or less of each of the following:

a. Reactive organic compounds, and

b. Toxic air contaminants (as determined by generic solvent data, solvent manufacturer's composition data or by a gas chromatography test and a mass spectrometry test).

c. Any person claiming this exemption shall maintain the records specified in Sections O.1.a and O.1.f in a manner consistent with Section O.6 and make them available for review.

Comment [A208]: Essentially the same as the Rule 321.B.1 exemption.

12. This rule shall not apply to adhesive products (including aerosol adhesives) and sealant products subject to the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.

Comment [A209]: Modeled on exemptions found in South Coast AQMD (SC) Rule 1168(j)(13) and SJV Rule 4653.4.1.7.

13. Provisions of Sections G.1, H, and R shall not apply to solvents and strippers used on any of the following:

a. ~~Solar cells, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, avionic equipment, and military fluid systems; and~~

Comment [A210]: Relocated to "i" below for consistency with other rules.

~~b.~~ Cotton swabs when removing cottonseed oil before the cleaning of high-precision optics; ~~and~~

~~e~~b. Paper gaskets; ~~and~~

~~d~~c. Clutch assemblies where rubber is bonded to metal by means of an adhesive; ~~and~~

d. Cleaning of semiconductor and microelectromechanical devices undergoing manufacturing processes involving thin film deposition, vacuum deposition, dry etching, or metal lift-off operations; including any maintenance activities associated with such operations; ~~and~~

e. Electronic components; ~~and~~

f. Cleaning of encasements, including decoy shells or box casings, for electronic components that have a total surface area that is less than 2 square feet; ~~and~~

g. Parts, subassemblies, or assemblies that are exposed to strong oxidizers or reducers (e.g., nitrogen tetroxide, liquid oxygen, or hydrazine); ~~and~~

h. Transparencies, polycarbonate, or glass substrates; ~~and~~

i. Solar cells, coated optics, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, avionic equipment, and military fluid systems; ~~and~~

j. Personal protective equipment.

C. Definitions

See Rule 102, Definitions, for definitions not limited to this rule. For purposes of this rule, the following definitions shall apply:

Comment [A211]: Our protocol is to add this lead-in sentence.

"Acrylonitrile-Butadiene-Styrene (ABS) Welding Adhesive" means any adhesive intended by the manufacturer to weld ABS pipe. ABS pipe is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.

"Adhesive" means any substance that is used to bond one surface to another surface by attachment or fused union.

"Adhesive Primer" means any product intended by the manufacturer to be applied to a substrate, prior to the application of an adhesive, to provide a bonding surface.

~~**"Adhesive Bonding Primer"** means an adhesive applied to a surface to improve the bond of subsequent adhesives and sometimes to inhibit corrosion.~~

"Adhesive Primer for Plastic" means a material applied to a plastic substrate before applying an adhesive in order to obtain better adhesion.

"Adhesive Product" means any adhesive, glue, cement, mastic, ~~adhesive bonding primer,~~ adhesive primer, adhesive primer for plastics, and any other adhesive primer. Adhesive products are a type of coating.

Comment [A212]: Term not used in PAR 353.

Comment [A213]: Modeled on the SJV Rule 4653 definition. Existing text in the rule is simplified by using the **adhesive product** and **sealant product** terms.

"Adhesive Solid" means the nonvolatile portion of an adhesive that remains after heating a sample of the material at 110° degrees ~~C~~ Celsius for one hour.

Comment [A214]: The District protocol is to remove degree symbols, abbreviations, and acronyms. Hence, they are spelled out here and elsewhere.

"Aerosol Adhesive" means an adhesive packaged as an aerosol product in which the spray mechanism is permanently housed in a nonrefillable can designed for hand-held application without the need for ancillary hoses or spray equipment. "Aerosol adhesives" include "special purpose spray adhesives," "mist spray adhesives," and "web spray adhesives" as defined in the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.

"Airless Spray" means a spray method in which a pump forces the adhesive through an atomizing nozzle at high pressure (1,000 to 6,000 pounds per square inch).

Comment [A215]: Modeled on the SJV Rule 4653 definition; it is used in Section Q.11.

~~**"Any Other Primer"** means a coating or adhesive applied to a substrate to improve adhesion of subsequently applied adhesive, except adhesive primer and adhesive bonding primer.~~

"Architectural Sealant/Primer" means any sealant or sealant primer intended by the manufacturer to be applied to stationary structures, including mobile homes, and their appurtenances. Appurtenances to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downspouts, and windows.

"Associated Solvent" means any solvent used in a solvent cleaning machine or ~~in~~for solvent cleaning ~~operations subject to this rule~~performed in association with the application of any adhesive product or sealant product.

Comment [A216]: Staff revised the definition to avoid confusion when the "associated solvent" is exempt from the rule and to expand the definition to include solvents used in solvent cleaning machines.

"Automotive Glass Adhesive Primer" means any adhesive primer intended by the manufacturer to be applied to automotive glass prior to installation with an adhesive/sealant. This primer improves adhesion to the pinch weld and blocks ultraviolet light.

"Bench Scale Project" means a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

"Ceramic Tile Installation Adhesive" means any adhesive intended by the manufacturer for the installation of ceramic tiles.

"Ceramic Tile" means a ceramic surfacing unit made from clay or a mixture of clay and other materials.

"Chlorinated Polyvinyl Chloride (CPVC) Welding Adhesive" means any adhesive intended by the manufacturer for the welding of CPVC plastic pipe. CPVC plastic is a polymer of the monomer that contains 67 percent chlorine and is normally identified with a CPVC marking.

"Coating" means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, adhesive products, paints, varnishes, sealant products, and stains.

Comment [A217]: Some of the new terms stem from additions to Rule 337.

Comment [A218]: Added for ease of understanding that these materials are **coatings**.

"Compliant Material" means any adhesive product, sealant product, stripper, or solvent that has a reactive organic compound content or composite partial pressure that complies with the applicable limit in Section D, E, F, G, H, or R.

Comment [A219]: The term appears in the amended Rule 353.B.9 and O.4 provisions.

"Computer Diskette Jacket Manufacturing Adhesive" means any adhesive intended by the manufacturer to glue the fold-over flaps to the body of a vinyl computer diskette jacket.

"Contact Bond Adhesive" or "Contact Adhesive" means any adhesive intended by the manufacturer ~~to adhere to itself instantaneously upon contact. The adhesive is applied to both adherends and allowed to become dry, which develops a bond when the adherends are brought together without sustained pressure.~~ for application to both surfaces to be bonded together, which is allowed to dry before the two surfaces are placed in contact with each other, forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces. Contact adhesive does not include rubber cements that are primarily intended for use on paper substrates. Contact adhesive also does not include vulcanizing fluids that are designed and labeled for tire repair only.

Comment [A220]: Modeled on the SJV Rule 4653 definition. The term **contact adhesive** appears several places (e.g., Rule 353 Q.10).

"Contact Bond Adhesive-Specialty Substrates" or "Specialty Contact Adhesive" means any contact adhesive that is intended by the manufacturer to be used for the bonding of nonporous substrates to each other, the bonding of decorative laminate in post-forming application, ~~or for~~ the bonding of decorative laminate to metal, melamine-covered board, or curved surfaces, or ~~when used to bond~~ the bonding of any substrate to metal, rubber, rigid plastic, or wood veneer not exceeding 1/16 inch in thickness.

Comment [A221]: Similar to the SJV Rule 4653 definition. Rule 353.Q.10 uses **specialty contact adhesive**.

"Control" means the reduction, by destruction or removal, of the amount of affected pollutants in a gas stream prior to discharge to the atmosphere.

"Control System" means any combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of reactive organic compound or toxic air contaminant emissions generated by a regulated operation.

"Cove Base Installation Adhesive" means any adhesive intended by the manufacturer for the installation of cove base (or wall base), which ~~means~~ is generally made of vinyl or rubber, on a wall or vertical surface at floor level.

"Cyanoacrylate Adhesive" means an adhesive with a cyanoacrylate content of at least 95 percent by weight.

~~**"Detailing or Touch-up Guns"** mean any small air spray equipment, including air brushes, that operate at no greater than 5 cubic feet per minute air flow and no greater than 50 pounds per square inch gauge air pressure and are used to coat small products or portions of products.~~

Comment [A222]: Use of these have been removed from Section Q. Detailing and touch-up guns are have high transfer efficiency devices.

"Dip Coat Application" means any process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn.

"Drywall Installation" means the installation of gypsum drywall to studs or solid surfaces using an adhesive formulated for that purpose.

"Electrodeposition" means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

~~**"Exempt Compound"** means any compound identified as an exception to the definition of "reactive organic compound" in Rule 102.~~

Comment [A223]: Deleted because the definition is being added to Rule 102.

"Fiberglass" means a fiber made ~~fine filaments of~~ from glass and similar in appearance to wool or cotton fiber.

"Flexible Vinyl" means nonrigid polyvinyl chloride plastic with at least five percent, by weight, of plasticizer content. A plasticizer means a material, such as a high boiling point organic solvent, that ~~means~~ is incorporated into an adhesive to increase its flexibility, workability, or distensibility, and may be determined using ASTM Method E260-~~91~~96(2006), "Standard Practice for Packed Column Gas Chromatography," ASTM International, or from product formulation data.

"Flow Coat Application" means any coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.

"Foam" means a rigid or spongy cellular mass with gas bubbles dispersed throughout.

"Glue" means a hard gelatin obtained from hides, tendons, cartilage, bones, etc., of animals. Through general use, the term "glue" is synonymous with the term "adhesive."

"Grams of Reactive Organic Compound ~~(ROC)~~ per Liter of Adhesive or Sealant, Less Water and Less Exempt Compounds" means the weight of reactive organic compound per combined volume of reactive organic compound and adhesive or sealant solids, and can be calculated by the following equation:

$$\text{Grams of } \sout{ROC}\text{reactive organic compounds per liter of adhesive or sealant, less water and less exempt compounds} = \frac{W_s - W_w - W_e}{V_m - V_w - V_e}$$

Where:

W_s = Weight of volatile compounds in grams
W_w = Weight of water in grams
W_e = Weight of exempt compounds in grams
V_m = Volume of material in liters
V_w = Volume of water in liters
V_e = Volume of exempt compounds in liters

For adhesives or sealants that contain reactive diluents, the reactive organic compound content of the adhesive or sealant is determined after curing. The grams of reactive organic compound per liter of adhesive or sealant shall be calculated by the following equation:

$$\text{Grams of } \sout{ROC}\text{reactive organic compounds per liter of adhesive or sealant, less water and less exempt compounds} = \frac{W_{rs} - W_{rw} - W_{re}}{V_{rm} - V_{rw} - V_{re}}$$

Where:
W_{rs} = Weight of volatile compounds not consumed during curing in grams
W_{rw} = Weight of water not consumed during curing in grams
W_{re} = Weight of exempt compounds not consumed during curing in grams
V_{rm} = Volume of material not consumed during curing in liters
V_{rw} = Volume of water not consumed during curing in liters
V_{re} = Volume of exempt compounds not consumed during curing in liters

~~**"Grams of Reactive Organic Compound Per Liter of Material"** means the weight of reactive organic compound per volume of material and can be calculated by the following equation:~~

Comment [A224]: This term has been moved into Rule 102.

~~$$\text{Grams of ROC per liter of Material} = \frac{W_s - W_w - W_e}{V_m}$$~~

~~Where: W_s = weight of volatile compounds in grams~~
~~W_w = weight of water in grams~~
~~W_e = weight of exempt compounds in grams~~
~~V_m = volume of material in liters~~

"Hand Application Method" means the application of a surface coating by manually held non-mechanically operated equipment. Such equipment includes paint brush, hand-roller, trowel, spatula, dauber, rag or sponge.

"Indoor Floor Covering Installation Adhesive" means any adhesive intended by the manufacturer for the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll, or artificial grass. Ceramic tile installation and the installation of perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl are excluded from this category.

"Laminate" means a product made by bonding together two or more layers of material.

~~**"Liquid Leak"** means any coating, stripper, or solvent leak at a rate of more than three drops per minute or any visible liquid mist.~~

Comment [A225]: The term is no longer used in the rule. Hence, the definition should be deleted.

"Low-Solids Adhesive, Sealant, or Primer" means any product that contains 120 grams or less of solids per liter of material.

"Marine Deck Sealant/Sealant Primer" means any sealant or sealant primer intended by the manufacturer to be applied to wooden marine decks.

"Metal to Urethane/Rubber Molding or Casting Adhesive" means any adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded rubber materials, in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.

"Multipurpose Construction Adhesive" means any adhesive intended by the manufacturer for the installation or repair of various construction materials, including but not limited to drywall, subfloor, panel, fiberglass reinforced plastic (FRP), ceiling tile, and acoustical tile.

"Noncompliant Material" means any adhesive product, sealant product, stripper, or solvent that has a reactive organic compound content or composite partial pressure that does not comply with the applicable limit in Section D, E, F, G, H, or R.

Comment [A226]: The term appears in the amended Rule 353.B.9 and O.4 provision.

"Nonmembrane Roof Installation/Repair Adhesive" means any adhesive intended by the manufacturer for the installation or repair of nonmembrane roofs and that ~~means~~ is not intended for the installation of prefabricated single-ply flexible roofing membrane. This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.

"Outdoor Floor Covering Installation Adhesive" means any adhesive intended by the manufacturer for the installation of floor covering that ~~means~~ is not in an enclosure and means exposed to ambient weather conditions during normal use.

"Panel Installation" means the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces using an adhesive formulated for that purpose.

"Percent Reactive Organic Compound By Weight" means the ratio of the weight of the reactive organic compound to the weight of the material, expressed as a percentage of reactive organic compound by weight. The percent reactive organic compound by weight can be calculated as follows:

$$\text{~~\%ROCweight~~}\textit{Percent reactive organic compound by weight} = \left[\frac{W_v}{W}\right] \text{x100}$$

Where: W_v = weight of ~~ROCs~~ reactive organic compounds in grams
W = weight of material in grams

"Perimeter Bonded Sheet Flooring Installation" means the installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive design to be applied only to a strip of up to four inches wide around the perimeter of the sheet flooring.

"Plastic Cement Welding Adhesive Primer" means any primer intended by the manufacturer to prepare plastic substrates prior to bonding or welding.

"Plastic Foam" means any foam constructed of plastics.

"Plastics" mean~~s~~ various synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers. They are used to produce pipe, solid sheet, film, or bulk products.

"Polyurethane Foams" mean~~s~~ plastic foams, as defined in "Whittington's Dictionary of Plastics," page 329, and may be either rigid or flexible.

"Polyvinyl Chloride (PVC) Plastic" means a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine and is normally identified with a PVC marking.

"Polyvinyl Chloride (PVC) Welding Adhesive" means any adhesive intended by the manufacturer for the welding of PVC plastic pipe.

"Porous Material" means a substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged. Such materials include but are not limited to wood, paper, corrugated paperboard, and plastic foam.

"Propellant" means a fluid under pressure that expels the contents of a container when a valve means opened.

"Reactive Diluent" means a liquid which is a reactive organic compound during application and one in which, through chemical and/or physical reactions, such as polymerization, 20 percent or more of the reactive organic compound becomes an integral part of a finished material.

~~**"Reactive Organic Compound"** as defined in Rule 102, Definitions.~~

"Roadway Sealant" means any sealant intended by the manufacturer to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.

"Rubber" includes any natural or manmade rubber substrate, including but not limited to, styrene-butadiene rubber (SBR), polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene (CSM), and ethylene propylene diene terpolymer (EPDM).

"Sealant" means any material with adhesive properties that is formulated primarily to fill, seal, waterproof, or weatherproof gaps or joints between two surfaces. Sealants include caulks.

"Sealant Primer" means any product intended by the manufacturer to be applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.

"Sealant Product" means any sealant and sealant primer. Sealant products are a type of coating.

"Sealant Solid" means the nonvolatile portion of a sealant that remains after heating a sample of the material at 110~~o~~ degrees ~~C~~Celsius for one hour.

"Sheet-Applied Rubber Installation" means sheet rubber lining applied to the interior walls of stationary tanks and rail cars.

"Single-Ply Roof Membrane" means single sheets of rubber, normally EPDM (ethylene-propylene diene terpolymer), that are applied in a single layer to a building roof (normally a flat roof).

"Single-Ply Roof Membrane Adhesive" means any adhesive intended by the manufacturer for the installation or repair of single-ply roof membrane. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, and ducts that protrude through the membrane. Repair includes gluing the edges of tears together, attaching a patch over a hole, and reapplying flashings to vents, pipes, or ducts installed through the membrane.

"Single-Ply Roof Membrane Adhesive Primer" means any primer intended by the manufacturer to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.

"Single-Ply Roof Membrane Sealant" means any sealant to be used for the installation or repair of single-ply roof membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane. Repair includes, but is not limited to gluing the edges of tears together, attaching a patch to a hole, and reapplying flashings to vents, pipes, or ducts installed through the membrane.

"Solvent" means any liquid containing any reactive organic compound or any toxic air contaminant, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, drying agent, preservative, or other similar uses.

"Solvent Bonding" has the same meaning as "solvent welding."

"Solvent Cleaning" means any activity, operation, or process (including, but not limited to, surface preparation, cleanup, or wipe cleaning) performed outside of a solvent cleaning machine, that uses solvent to remove uncured adhesives, uncured coatings, uncured inks, uncured polyester resin material, uncured sealant, or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment, and general work areas. Cleaning spray equipment used for the application of coating, adhesive, ink, polyester resin material, or sealant is also considered to be solvent cleaning irrespective of the spray material being cured.

Comment [A227]: **Solvent** and **solvent cleaning** are the same definitions found in Rule 321. **Solvent** includes any liquid containing any **toxic air contaminant.**

"Solvent Cleaning Machine" means any device or piece of equipment that uses solvent liquid or vapor to remove soils, moisture, or other contaminants from the surfaces of materials. Types of solvent cleaning machines include, but are not limited to, batch cold, batch vapor, in-line cold, in-line vapor, remote reservoir, and gas-path solvent cleaners. Buckets, pails, and beakers with capacities of 3.785 liters (1.00 gallon) or less are not considered solvent cleaning machines. However, the use of such a container or similar containers (e.g., hand-held spray bottles) with a liquid solvent for cleaning is considered to be solvent cleaning. Any device or piece of equipment used exclusively for stripping shall not be considered to be a solvent cleaning machine.

Comment [A228]: **Solvent, solvent cleaning**, and **solvent cleaning machine** are the same definitions found in Rule 321. **Solvent** includes any liquid containing any **toxic air contaminant.**

"Solvent Welding" means the softening of the surfaces of two substrates by wetting them with solvents and/or adhesives, and joining them together with a chemical and/or physical reaction(s) to form a fused union.

~~**"Stationary Source"** as defined in Rule 102, Definitions.~~

"Stripper" means any liquid that is applied to a surface to remove cured or dried coatings such as primers, adhesives (e.g., debonding or unglueing), topcoats, and temporary protective coatings.

"Structural Glazing Adhesive" means any adhesive intended by the manufacturer to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.

"Subfloor Installation" means the installation of subflooring material over floor joists, including the construction of any load bearing joists. Subflooring means covered by a finish surface material.

"Surface Preparation Solvent" means a solvent used in the cleaning of a substrate to remove dirt, oil, and other contaminants (e.g., uncured coatings). This surface cleaning ~~means~~ is typically done prior to the application of primers, adhesives, or sealants.

"Thin Metal Laminating Adhesive" means any adhesive intended by the manufacturer to bond multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) ~~means~~ is less than 0.25 mil (0.00025 inch, 0.00635 millimeter).

"Tire Repair" means the expanding of a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.

"Tire Retread Adhesive" means any adhesive intended by the manufacturer to be applied to the back of precure tread rubber and to the casing and cushion rubber. It may also be used to seal buffed tire casings to prevent oxidation while the tire ~~means~~ is being prepared for a new tread.

"Traffic Marking Tape" means preformed reflective film intended by the manufacturer to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.

"Traffic Marking Tape Adhesive Primer" means any primer intended by the manufacturer to be applied to surfaces prior to installation of traffic marking tape.

"Viscosity" means the internal friction of a liquid that makes it resistant to flow.

"Volatile Organic Compound (VOC)" has the same meaning as "reactive organic compound" as defined in Rule 102, Definitions. Tertiary-butyl acetate (also known as t-butyl acetate or tBAc) shall be considered exempt as a reactive organic compound only for purposes of reactive organic compound emissions limitations or reactive organic compound content requirements and will continue to be a reactive organic compound for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to reactive organic compounds.

Comment [A229]: Including rule titles for referenced rules follows an EPA recommendation.

Comment [A230]: The tBAc qualifier addresses EPA concerns.

"Waterproof Resorcinol Glue" means a two-part resorcinol-resin-based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

"Wood Flooring Installation" means the installation of a wood floor surface, which may be in the form of parquet tiles, planks, or strip-wood.

"Wood Parquet Flooring" means wood flooring in tile form constructed of smaller pieces of wood which are joined together in a pattern by the maker to form the tile.

"Wood Plank Flooring" means solid or laminated wood in plank form.

D. Requirements – Reactive Organic Compound Limits for Specific Applications of Adhesive Products, ~~or Adhesive Bonding Primers, Adhesive Primers,~~ Sealant Products ~~, Sealant Primers, or Any Other Primer~~

Except as provided in Sections E and I ~~of this rule~~, ~~a~~no person shall ~~not~~ apply nonaerosol adhesive products ~~, adhesive bonding primers, adhesive primers,~~ or sealant products ~~, sealant primers, or any other primer~~ that are ~~defined~~ listed under the Table 353-1 product categories and that have a reactive organic compound content (grams per liter [g/l], less water and less exempt compounds) in excess of the Table 353-1 limits. For low-solids adhesives, sealants, or primers, the reactive organic compound content is based on a ~~g/l~~ grams of reactive organic compound per liter of material basis.

Comment [A231]: Our practice is to improve text flow by changing the sentence structure in this manner.

TABLE 353-1. REACTIVE ORGANIC COMPOUND LIMITS FOR SPECIFIC APPLICATIONS

TYPE	PRODUCT CATEGORY	ROC LIMITS ~~(less water and exempt compounds)~~			
		On and After ~~08/19/1999~~01/01/2000		On and After ~~01/01/2000~~[*12 months after the date of amended rule adoption*]	
		(g/l)	(lb/gal)	(g/l)	(lb/gal)
1. Adhesives					
	ABS welding	400	3.3	400	3.3
	Ceramic tile installation	130	1.1	130	1.1
	Computer diskette jacket manufacturing	850	7.1	850	7.1
	Contact bond	540	4.5	250	2.1
	Contact bond-specialty substrates	540	4.5	400	3.3
	Cove base installation	150	1.3	150	1.3
	CPVC welding	490	4.1	490	4.1
	Indoor floor covering installation (except ceramic tile installation)	150	1.3	150	1.3
	Metal to urethane/rubber molding or casting	850	7.1	~~850~~250	~~7.1~~2.1
	Multipurpose construction (except cove base installation)	200	1.7	~~200~~70	~~1.7~~0.6
	Nonmembrane roof installation/repair	300	2.5	300	2.5

TABLE 353-1. REACTIVE ORGANIC COMPOUND LIMITS FOR SPECIFIC APPLICATIONS

TYPE	PRODUCT CATEGORY	ROC LIMITS ~~(less water and exempt compounds)~~			
		On and After ~~08/19/1999~~01/01/200		On and After ~~01/01/2000~~[*12 months after the date of amended rule adoption*]	
		(g/l)	(lb/gal)	(g/l)	(lb/gal)
	Other plastic cement welding	510	4.3	~~510~~250	~~4.3~~2.1
	Outdoor floor covering installation	250	2.1	250	2.1
	Perimeter bonded sheet vinyl flooring installation	660	5.5	660	5.5
	PVC welding	510	4.3	~~510~~500	~~4.3~~4.2
	Sheet-applied rubber installation	850	7.1	850	7.1
	Single-ply roof membrane installation/repair	250	2.1	250	2.1
	Structural glazing	100	0.8	100	0.8
	Thin metal laminating	780	6.5	780	6.5
	Tire retread	100	0.8	100	0.8
	Traffic marking tape	150	1.3	150	1.3
	Waterproof resorcinol glue	170	1.4	170	1.4
2. Sealants					
	Architectural	250	2.1	250	2.1
	Marine deck	760	6.3	760	6.3
	Nonmembrane roof installation/repair	300	2.5	300	2.5
	Roadway	250	2.1	250	2.1
	Single-ply roof membrane	450	3.8	450	3.8
	Other	420	3.5	420	3.5
3. Adhesive Primers					
	Automotive glass	700	5.8	700	5.8
	Plastic cement welding	650	5.4	650	5.4
	Single-ply roof membrane	250	2.1	250	2.1
	Traffic marking tape	150	1.3	150	1.3
	Other	250	2.1	250	2.1
4. Sealant Primers					
	Architectural – non porous	250	2.1	250	2.1
	Architectural – porous	775	6.5	775	6.5
	Marine deck	760	6.3	760	6.3
	Other	750	6.3	750	6.3

Comment [A232]: Deleting outdated limits simplifies the table.

E. Requirements – Reactive Organic Compound Limits for Nonspecific Applications of Adhesive Products~~, Adhesive Bonding Primers, Adhesive Primers,~~ or Sealant Products~~, Sealant Primers, or Any Other Primer~~ onto Substrates

Except as provided below and in Section I ~~of this rule~~, ~~a~~ no person shall ~~not~~ apply nonaerosol adhesive products~~, adhesive bonding primers, adhesive primers,~~ or sealant products~~, sealant primers, or any other primer~~ to a substrate that have a reactive organic compound content (~~g/l~~grams per liter, less water and less exempt compounds) in excess of the Table 353-2 limits. For low-solids adhesives, sealants, or primers, the reactive organic compound content is based on a ~~g/l~~ grams of reactive organic compound per liter of material basis.

The limit for a nonspecific application onto a substrate where an operator:

1. Bonds dissimilar substrates together, is the applicable substrate category with the highest reactive organic compound content.

2. Uses an adhesive or sealant listed in Table 353-1, is the limit specified in Table 353-1 for that particular product category.

TABLE 353-2. REACTIVE ORGANIC COMPOUND LIMITS FOR NONSPECIFIC APPLICATIONS OF ADHESIVE PRODUCTS, ~~ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS,~~ AND SEALANT PRODUCTS~~, SEALANT PRIMERS, OR ANY OTHER PRIMER~~ ONTO SUBSTRATES

SUBSTRATE/APPLICATION	ROC LIMITS ~~(less water and exempt compounds)~~			
	On and After 08/19/1999		On and After [*12 months after the date of amended rule adoption*]	
	(g/l)	(lb/gal)	(g/l)	(lb/gal)
Flexible vinyl	250	2.1	250	2.1
Fiberglass	200	1.7	80	0.7
Metal	30	0.3	30	0.3
Porous material	120	1.0	50	0.4
Rubber	250	2.1	250	2.1
Other substrates	250	2.1	250	2.1

F. Requirements – Aerosol Adhesives Reactive Organic Compound Limit

Except as provided in Section I ~~of this rule~~, ~~a~~ no person shall ~~not~~ use any aerosol adhesive unless the reactive organic compound content~~, including the propellant, does not exceed 75 percent by weight~~ complies with the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.

G. Requirement – Cleanup Solvent and/or Cleanup Method

1. Before [*one year from the date of amended rule adoption*], ~~Except~~ except as provided in Section I ~~of this rule~~, no person shall use materials containing reactive organic compound for the removal of uncured adhesive products~~, adhesive bonding primers, adhesive primers,~~ or uncured sealant products~~, sealant primers, or any other primer~~ from surfaces, other than spray application equipment, unless the reactive organic compound composite ~~vapor~~ partial pressure of the solvent used is less than 45 millimeters ~~(mm)~~ of mercury ~~(Hg)~~ at 20 degrees ~~(°)~~ Celsius ~~(C)~~.

   Effective [*one year from the date of amended rule adoption*], except as provided in Sections G.2 and I, no person shall use any solvent containing more than 25 grams of reactive organic compound (0.21 pound of reactive organic compound per gallon) per liter of material for the removal of uncured adhesive products or uncured sealant products from surfaces.

Comment [A233]: Both ARB and EPA recommend a 25 g/l limit on the solvent's ROC content.

2. Spray application equipment: Before [*one year from the date of amended rule adoption*], ~~Except~~ except as provided in Section I ~~of this rule~~, either one of the following shall be used for cleaning, flushing or soaking of filters, flushing lines, pipes, pumps, and other parts of the application equipment:

   a. An enclosed cleaning system, or an equivalent cleaning system as determined by the test method referenced in Section N.8~~9 of this rule~~, or

b. A solvent with a ~~reactive organic compound~~ content of 70 grams of reactive organic compound per liter (0.6 ~~lb/gal~~pound per gallon) of material or less. Parts containing dried adhesive may be soaked in an organic solvent as long as the reactive organic compound composite ~~vapor~~ partial pressure~~, excluding water and exempt compounds,~~ of the solvent is 9.5 ~~mm of Hg~~millimeters of mercury at 20~~°C~~ degrees Celsius or less and is kept in a closed container, which shall be closed except when depositing or removing parts or materials from the container.

Effective [*one year from the date of amended rule adoption*], except as provided in Section I, any person cleaning spray application equipment with a solvent containing more than 25 grams of reactive organic compound per liter (0.21 pound of reactive organic compound per gallon) of material shall use an enclosed cleaning system, or equipment that is proven to the satisfaction of the Control Officer to be equally effective as an enclosed cleaning system at controlling emissions. "Equal effectiveness" of an alternative cleaning system shall be determined by the test method referenced in Section N.8. If an enclosed cleaning system is used, it shall totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures, and it shall be used according to the manufacturer's recommendations and be closed when not in use.

Comment [A234]: Modeled on the Rule 321.M.3 provisions.

H. Requirements – Surface Preparation Solvent

Before [*one year from the date of amended rule adoption*], ~~Except~~ except as provided in Section I ~~of this rule~~ and for single-ply roofing, no person shall use materials containing reactive organic compounds for surface preparation unless the ~~reactive organic compound~~ content of the solvent is 70 grams of reactive organic compound per liter (0.6 ~~lb/gal~~pound per gallon) of material or less. For single-ply roofing surface preparation solvent, the reactive organic compound composite ~~vapor~~ partial pressure~~, excluding water and exempt compounds,~~ shall not exceed 45 ~~mm of Hg at 20°C~~millimeters of mercury at 20 degrees Celsius.

Effective [*one year from the date of amended rule adoption*], except as provided in Section I ~~and for single-ply roofing~~, no person shall use any solvent containing more than 25 grams of reactive organic compound per liter (0.21 pound of reactive organic compound per gallon) of material for surface preparation. ~~For single-ply roofing surface preparation solvent, the reactive organic compound composite partial pressure shall not exceed 45 millimeters of mercury at 20 degrees Celsius.~~

Comment [A235]: Excluding this provision is consistent with the current requirements in SJV 4653 and SC 1171 rules.

Comment [A236]: Revising the limit from 70 to 25 g/l follows ARB and EPA suggestions. Similar to Ventura County APCD (VC) Rule 74.20, the single-ply roofing surface preparation requirement remains unchanged.

I. Requirements – Alternative Compliance Provision

A person may ~~comply~~ elect to use an add-on control system as an alternative to meeting the requirements ~~with the provisions~~ of Sections D, E, F, G, ~~and~~ H, Q, and R ~~of this rule by using approved add-on air pollution control equipment~~, provided ~~that~~all of the applicable requirements below are met~~:~~. Any person choosing to install such control system shall obtain an Authority to Construct from the District prior to installation.

1. The ~~reactive organic compound emissions from such operations and/or materials are reduced by at least 85 percent~~ overall ~~capture and destruction~~ efficiency (the capture efficiency multiplied by the control device efficiency) of the total system shall be at least 85.0 percent, by weight~~.~~. Alternatively, the control device reactive organic compound exhaust concentration shall not exceed 10 parts per million by volume as propane or other limit approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

Comment [A237]: The addition of **and toxic air contaminant** stems from similar text in Rule 321.N.1.

2. Combustion temperature ~~is~~ shall be continuously monitored when operating a thermal incinerator~~.~~.

3. Inlet and exhaust gas temperatures ~~are~~ shall be continuously monitored when operating a catalytic incinerator~~.~~.

4. Control device efficiency ~~is~~ shall be continuously monitored when operating a carbon adsorber or control device other than a thermal or catalytic incinerator~~, and~~

5. ~~Written approval for such equipment, in the form of an Authority to Construct and a Permit to Operate, is received from the Control Officer., and~~Compliance through the use of an emission control system shall not result in affected pollutant emissions in excess of the affected pollutant emissions that would result from compliance with Sections D, E, F, G, H, Q, and R.

Comment [A238]: Similar to provision in Rule 321.N.6. (**Reactive organic compound** changed to **affected pollutant** to include TACs.)

J. Requirements – ~~Storage of Reactive Organic Compound Containing Materials~~ General Operating

Any person who owns, operates, or uses any application equipment to apply any adhesive products or sealant products shall ensure the coating operation and any solvent cleaning associated with such operation meets the following requirements:

1. All reactive organic compound-containing materials, used or unused, including, but not limited to, adhesive products, sealant products, and reactive organic compound-laden cloth or paper used ~~in~~ in solvent cleaning and stripping of cured adhesives, shall be stored ~~or~~ and disposed of in non-absorbent and nonleaking containers equipped with tight-fitting covers~~, which shall be closed except when depositing or removing materials from the container~~. All covers shall be in place unless adding material to or removing material from the containers, the containers are empty, or doing maintenance/inspection of the containers. ~~After distillation recovery of solvent, waste solvent residues shall not contain more than 20 percent of reactive organic compound by weight as determined by the test method specified in Section N.14.~~

2. All application equipment, ventilation system, and emission control equipment shall be installed, operated, and maintained consistent with the manufacturer's specifications.

3. Waste solvent, waste solvent residues, and any other waste material that contains reactive organic compounds shall be disposed of by one of the following methods:~~All containers holding reactive organic compound containing materials shall be free of liquid leaks. All application equipment, solvent distillation units, and gun washers shall not have any liquid leaks, visible tears, holes, or cracks. Any such liquid leak, visible tear, hole, or crack is a violation of this rule.~~

~~Any liquid leak, visible tear, hole, or crack that is detected shall be repaired within one day from discovery, or the equipment shall be drained of all surface coating or solvent, consistent with Section J.1 provisions, and shut down until replaced or repaired. Application equipment, solvent distillation units, and gun washers shall not be operated when leaking.~~

a. A commercial waste solvent reclamation service licensed by the State of California.

b. At a facility that is federally or state licensed to treat, store or dispose of such waste.

c. Recycling in conformance with Section 25143.2 of the California Health and Safety Code.

4. All covers, valves, drain plugs, and other closure devices designed to reduce evaporation of reactive organic compound-containing materials shall not be removed or opened except to process work or to perform monitoring, inspections, maintenance, or repairs that require the removal of the covers or other closure devices.

5. Any reactive organic compound-containing material spills shall be wiped up immediately and the used absorbent material (e.g., cloth, paper, sand, sawdust, etc.) shall be stored in closed containers that are handled in accordance with Section J.1.

6. The handling and transfer of coatings, strippers, and cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent coatings, strippers, and cleaning solvents shall be conducted in such a manner that minimizes spills.

Comment [A239]: The **housekeeping** provisions are similar to requirements found in Rule 321.D.

7. ~~Any storage of any~~ Containers used to store adhesive products, ~~and~~ sealant products, solvent, or any waste material that contains reactive organic compounds subject to this rule shall be marked or clearly labeled indicating the name of the material they contain~~only only be done in containers that meet the labeling requirements of Section L.~~

K. Requirements – Prohibition of Sales

1. Except as provided in Section B.~~3~~10 ~~of this rule~~, ~~after the specified effective dates,~~ no person shall supply, sell, or offer for sale any nonaerosol adhesive~~s~~ product~~, adhesive bonding primers, adhesive primers, sealants~~ or sealant product~~, sealant primers, or any other primer~~ that, at the time of sale, is listed in Section D Table 353-1 and exceeds the corresponding reactive organic compound limits therein. ~~listed in Table 353-1 and is defined under a product category in Table 353-1~~.

2. Except as provided in Section B.~~3~~10 of this rule, no person shall supply, sell, or offer for sale, any aerosol adhesive unless, at the time of sale, the ~~reactive organic compound content, including the propellant, does not exceed 75 percent by weight~~provisions of the Air Resources Board consumer product regulation, found in Title 17 of the California Code of Regulations, section 94507 et seq., are met.

L. Requirements – Manufacturer Compliance Statement and Labeling

The manufacturer of any adhesive products~~, adhesive bonding primers, adhesive primers,~~ or sealant products~~, sealant primers, or any other primer~~ subject to this rule shall ~~display the~~ include a designation of the maximum reactive organic compound or volatile organic compound content as supplied, expressed in grams per liter or pounds per gallon excluding water and exempt compounds ~~determined by~~ from the appropriate test method, on labels ~~or containers~~and data sheets. This designation shall ~~display~~ include recommendations regarding thinning, reducing, or mixing with any other reactive organic compound- or volatile organic compound-containing material. This information shall include the maximum reactive organic compound or volatile organic compound content on an as-applied basis when used in accordance with the manufacturer's recommendations.

Comment [A240]: Modeled on the VC Rule 74.20.B.12 provisions.

M. Requirements – Prohibition of Specification

No person shall solicit, require for use, or specify the application of any adhesive products,~~ adhesive bonding primers, adhesive primers,~~ sealant products, or associated solvent ~~sealant primers, or any other primer,~~ if such use or application results in a violation of the provisions of this rule. This prohibition shall apply to all written or oral contracts.

N. ~~Monitoring~~Requirements – Compliance Provisions and Test Methods

1. ~~The volatile organic compound and solids content of all n~~Except as specified in Section N.4, nonaerosol adhesive products, ~~adhesive primers~~sealant products, and ~~cleaning~~ associated solvents reactive organic compound content~~, except as specified in Section N.4 of this rule,~~ shall be determined using Environmental Protection Agency Reference Method 24 ~~(40 CFR Part 60, Appendix A),~~ its constituent methods, or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer~~or South Coast Air Quality Management District Method 304~~. The reactive organic compound content of materials containing 50 grams of reactive organic compound per liter or less shall be determined by the South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

Comment [A241]: EPA recommended referring to SC Method 313 for determining ROC content of materials containing < 50 g/l.

2. Exempt ~~organic~~ compounds shall be determined using ASTM D4457-1991, "Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings

by Direct Injection into a Gas Chromatograph,**"** ASTM International. Alternatively, determination of exempt compounds may be performed in accordance with the South Coast Air Quality Management District Method 303-91, "Determination of Exempt Compounds," August 1996. For exempt compounds where no reference test method is available, a facility requesting the exemption shall provide appropriate test methods approved by the Control Officer and approvable by the Air Resources Board and the Environmental Protection Agency.

3. The ~~volatile~~ reactive organic compound content of aerosol adhesives and aerosol adhesive primers shall be determined using South Coast Air Quality Management District Test Method 305-91, "Determination of Volatile Organic Compounds in Aerosol Applications," June 1993, or Air Resources Board Method 310, "Determination of Volatile Organic Compounds in Consumer Products and Reactive Organic Compounds in Aerosol Coating Products," June 22, 2000, upon the Environmental Protection Agency approval of Method 310.

4. The ~~volatile~~ reactive organic compound content of any plastic welding cement adhesive or primer shall be determined using South Coast Air Quality Management District Method 316A-92, "Determination of Volatile Organic Compound (VOC) in Materials Used for Pipes and Fittings," October 1996.

~~5. The composite vapor pressure of organic compounds in cleaning materials shall be determined by quantifying the amount of each compound in the blend using gas chromatographic analysis (ASTM E260-96) for organics and ASTM D3792-91 for water content, as applicable, and the following equation:~~

Comment [A242]: Replaced by **reactive organic compound composite partial pressure** (Rule 102).

$$~~Pp_C = \frac{\sum_{i=1}^{n}(W_i)(VP_i)/Mw_i}{W_w/Mw_w + \sum_{i=1}^{n} W_e/Mw_e + \sum_{i=1}^{n} W_i/Mw_i}$$~~

~~Where :~~

~~Pp_e = VOC composite partial pressure at 20°C, in mm Hg.~~

~~W_i = Weight of the "i"th VOC compound, in grams, as determined by ASTM E260-96.~~

~~Ww = Weight of water, in grams as determined by ASTM D3792-91~~

~~W_e = Weight of the "i"th exempt compound, in grams, as determined by ASTM E260-96.~~

~~Mw_i = Molecular weight of the "i"th VOC compound, in grams per grams-mole, as given in chemical reference literature.~~

~~Mw_w = Molecular weight of water, 18 grams per g-mole.~~

~~MW_e = Molecular weight of the "i"th exempt compound, in grams per g-mole, as given in chemical reference literature.~~

~~VP_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg, as determined by Section N.6 of this Rule.~~

5. Reactive organic compound composite partial pressures shall be measured using ASTM D 2879-1997,**"**Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," ASTM International, in combination with the formula in the ~~Section C.~~ Rule 102 definition of **"**reactive organic compound composite partial pressure," manufacturer's specified reactive organic compound composite partial pressure, or an accepted scientific reference approved the Environmental Protection Agency, the Air Resources Board, and the Control Officer.

~~6. The vapor pressure of each single component compound may be determined from ASTM D2879-96 or may be obtained from a published source approved by the Control Officer, such as the sources referenced in 40 CFR 52.741, or the most current edition of a published source, including, but not limited to: a). The Vapor Pressure of Pure Substances, Boublik, Fried, and Hala; Elsevier Scientific Publishing Company, New York; b). Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company; c). CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company; and d) Lange's Handbook of Chemistry, John Dean, editor, McGraw-Hill Book Company.~~

~~7~~6. The ~~measurement of~~ capture efficiency for reactive organic compound emissions ~~of an emission control system~~ shall be ~~conducted and reported in accordance with the recently approved Environmental Protection Agency Technical Document "Guidelines for Determining Capture Efficiency," issued January 9, 1995, or a District capture efficiency determination method approved by the Environmental Protection Agency~~ determined by verifying the use of a Permanent Total Enclosure and 100 percent capture efficiency as defined by Environmental Protection Agency Method 204, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if an Environmental Protection Agency Method 204 defined Permanent Total Enclosure is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the Environmental Protection Agency technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the Environmental Protection Agency technical guidelines shall be determined by:

a. The Temporary Total Enclosure approach of Environmental Protection Agency Methods 204 through 204F; or

b. The South Coast Air Quality Management District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency," May 1995

Comment [A243]: EPA recommended that the District model the provisions on SC Rule 1122(h)(7)(A) text.

~~8~~7. The ~~measurement of~~ control device efficiency for reactive organic compound emissions shall be ~~in accordance with~~ determined by Environmental Protection Agency Methods 25, 25A, ~~25B, or~~ the South Coast Air Quality Management District Method 25.1, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon," February 1991, or the South Coast Air Quality Management District Method 25.3, "Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources," March 2000, as applicable. Environmental Protection Agency Test Method 18 or Air Resources Board Method ~~100.~~422, "Exempt Halogenated VOCs in Gases," September 12, 1990, shall be used to determine emissions of exempt compounds.

Comment [A244]: These changes follow EPA's recommendation that the District model the provisions on SC Rule 1122(h)(7)(B) text.

~~9~~8. The active and passive solvent losses from spray gun cleaning systems shall be determined using South Coast Air Quality Management District's, "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," dated October 3, 1989. The test solvent for this determination shall be any lacquer thinner with a minimum ~~vapor~~ reactive organic compound composite partial pressure of 105 ~~mm of Hg~~millimeters of mercury at 20~~°C~~ degrees Celsius, and the minimum test temperature shall be 15~~°C~~ degrees Celsius.

~~10~~9. To determine if a diluent is a reactive diluent, the percent of the reactive organic compound that becomes an integral part of the finished material shall be determined using the South Coast Air Quality Management District Method 316A-92, "Determination of Volatile Organic Compound (VOC) in Materials Used for Pipes and Fittings," October 1996.

10. Application equipment coating transfer efficiencies shall be measured using South Coast Air Quality Management District Method "Spray Equipment Transfer Efficiency Test Procedure of Equipment User," May 1989.

11. The capture efficiency requirement for toxic air contaminant emissions that are not reactive organic compounds shall be determined by using the methods described in Section N.6 modified in a manner approved by the District to quantify the mass of liquid or gaseous reactive organic compounds and/or toxic air contaminants.

Comment [A245]: Similar to the Rule 321.P.3 requirements.

12. The control device efficiency requirement for toxic air contaminant emissions that are not reactive organic compounds shall be determined using:

    a. an Environmental Protection Agency approved test method or methods, or

    b. in the case where there is no Environmental Protection Agency approved test method, a District approved detection method applicable for each target toxics specie.

    c. the Control Officer may require more than one test method on any emission control device where necessary to demonstrate that the overall efficiency is at least 85 percent by weight in reducing emissions of reactive organic compounds and/or toxic air contaminants. Any technique to convert "parts per million by volume" test method results to either 1) "parts per million by weight," or 2) "mass emission rates" (e.g., pounds per hour) shall first be approved by the Control Officer and, if such approval is not provided, then the technique shall not be used to show compliance with this rule.

Comment [A246]: Essentially the same as Rule 321.P.4 provisions.

13. Viscosity will be determined by ASTM D 1084-88, "Standard Test Methods for Viscosity of Adhesives," ASTM International.

14. ~~Solvent waste residue reactive organic compound content shall be determined by using Environmental Protection Agency Reference Method 25D or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.[Reserved]~~Emissions of reactive organic compounds from the exhaust of an emission control system shall be measured by the Environmental Protection Agency Method 25, in combination with Environmental Protection Agency Method 18 or the California Air Resources Board Method 422, "Exempt Halogenated VOCs in Gases," September 12, 1990 (to determine emissions of exempt compounds).

15. When more than one test method or set of test methods are specified for any testing, a test result showing an exceedance of any limit of this rule shall constitute a rule violation.

Comment [A247]: Added per the EPA recommendation in the Technical Support Document for SJV Rule 4605 (June 2009).

16. The Environmental Protection Agency test methods in effect on [*date of amended rule adoption*] shall be the test methods used to meet the requirements of this rule.

O. Requirements – Recordkeeping

Any person subject to this rule that manufactures or applies any adhesive product or ~~, adhesive bonding primer, adhesive primer,~~ sealant product~~, sealant primer, or any other primer~~ shall comply with the following requirements~~:~~. Any owner or operator of any stationary source comprised of more than one facility may comply with the following requirements on a facility basis.

Comment [A248]: The District added this in response to an Industry comment received during the Aug. 10, 2011 workshop.

1. Maintain a current ~~list~~ file of ~~each~~ all ~~adhesive, adhesive bonding primer, adhesive primer, sealant, sealant primer, any other primer, and solvent~~ reactive organic compound-containing materials in use at the stationary source subject to this rule~~and in storage~~. The file shall provide all of the data necessary to evaluate compliance and shall include~~, but not be limited to,~~ the following information, as applicable:

    a. ~~A data sheet or material list giving the~~ material name, manufacturer identification~~, and material application~~ (e.g., brand name, stock identification number)~~.~~;

    b. application method;

c. material type, manufacturer's specific use instructions (e.g., ~~catalysts, reducers, or other components are added~~ specific use for which the material is intended), type operation (e.g., coating, stripping, or solvent cleaning), and, for coating operations, the product type, type of substrate coated, and type of application (i.e., the adhesive product and sealant product type from Table 353-1 or Table 353-2);

~~b~~d. ~~Any catalysts, reducers, or other components used and the~~ specific mixing ~~ratio.~~data (e.g., component volumes or weights) of each component for each batch sufficient to determine the mixture's reactive organic compound content;

~~c~~e. ~~T~~the ~~applicable~~ corresponding reactive organic compound ~~content~~ limit(s) ~~or vapor pressure limit from Sections D, E, F, G, and H of this rule~~ from Sections D, E, F, G, H, and R and the actual as applied reactive organic compound content of the materials used, ~~as applied, or~~ If complying using the "reactive organic compound ~~vapor~~ composite partial pressure" method, provide the actual reactive organic compound composite partial pressure of the ~~adhesive, sealant, primer, or solvent~~ materials used~~.~~

f. current adhesive product, sealant product, stripper, and solvent manufacturer specification sheets, Material Safety Data Sheets, product data sheets, or air quality data sheets, which list the reactive organic compound content of each material in use at the stationary source subject to this rule. Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container.

Comment [A249]: Added in response to a comment by VAFB.

2. Maintain records for each reactive organic compound-containing material purchased for use at the stationary source. The records shall include, but not be limited to, the following:

a. material name and manufacturer identification (e.g., brand name, stock identification number); and

b. material type (e.g., adhesive product and sealant product type from Tables 353-1 and 353-2, cleanup solvent, stripper, etc.)~~;~~.

~~c. volume of material purchased;~~

~~d. date of purchase; and~~

~~e. receipts of each purchase.~~

3. Maintain records of the disposal method ~~of disposal~~ each time waste solvent, ~~or~~ waste solvent residue, or other waste material that contain reactive organic compounds is removed from the stationary source for disposal.

~~2~~4. ~~Maintain records of the monthly volume of each adhesive, adhesive bonding primer, adhesive primer, sealant, sealant primer, other primers, or solvent used.~~For each material maintained in response to Section O.1.a, maintain, at a minimum, on a monthly basis for compliant material and on a daily basis for noncompliant material, a record of the following:

Comment [A250]: Revised to show "Section O.1.a" to exclude MSDSs per clarification request received during the August 10, 2011 workshop.

Comment [A251]: The daily recordkeeping provision was added for consistency with the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies."

a. volume used (gallons per day, gallons per month);

b. reactive organic compound content (grams per liter or pounds per gallon); and

c. resulting reactive organic compound emissions (pounds per day, pounds per month).

~~For permitted facilities and users of non-compliant coatings, all records required by this Subsection and Subsection O.1 shall be summarized for each calendar year and submitted to the~~

~~District by March 1 of the following year. The annual report shall include the name and address of the Permittee, the Permit to Operate number that the coating and solvent cleaning is subject to (if permitted), and/or a statement that the annual report includes non-compliant coating usage information.~~

Comment [A252]: Moved the annual reporting requirements to Section S per industry suggestion.

~~3~~5. ~~When compliance is achieved through the use of add-on~~ For any stationary source that uses emission control equipment~~,~~ as an alternative to meeting the requirements of Sections D, E, F, G, H, Q, or R, ~~maintain~~ daily records ~~on a daily basis~~ of key operating parameter~~s~~ values and maintenance procedures that demonstrate continuous operation and compliance of the ~~for the~~ emission control equipment during periods of emission producing activities shall be maintained. These parameters shall~~, including~~include, but not be limited to:

a. Hours of operation~~.~~;

b. ~~Routine and nonroutine maintenance.~~All maintenance work that requires the emission control system to be shut down;

c. ~~The applicable information specified in Section I of this rule.~~All information needed to demonstrate continuous compliance with Section I, such as temperatures, pressures, and/or flow rates.

Comment [A253]: Subsection 5 text mirrors the Rule 321.R.1.c provisions.

~~d. The daily volume of each noncompliant adhesive, sealant, primer, or solvent used.~~

~~4~~6. ~~All~~ Any records ~~shall be~~ required to be maintained pursuant to this rule shall be kept on site for at least ~~two (~~2~~)~~ years ~~and shall be available for inspection~~ unless a longer retention period is otherwise required by state or federal regulation(s). Such records shall be readily available for ~~Thereafter, the records shall be maintained either on site or readily available for expeditious~~ inspection and review by the District~~for an additional three (3) years~~.

Comment [A254]: During the CAC meeting on August 10, a concern about the need to maintain records for 5 years was raised. Staff discovered that EPA had modified its 5 year recordkeeping policy. Hence, per the EPA "Guidance Document for Correcting Common VOC & Other Rule Deficiencies," 2 years record retention is acceptable for sources not subject to Title V permitting or a MACT standard.

~~7. If an operator or District staff discovers a liquid leak in a container holding coating or solvent, or a liquid leak, visible tear, hole, or crack in application equipment, a solvent distillation unit, or in a gun washer, the operator shall record:~~

~~a. the date of discovery;~~

~~b. the corrective action taken; and~~

~~c. the date of repair or equipment replacement.~~

P. ~~Rule Effective Date~~Compliance Schedule

~~Unless otherwise specified, the provisions of this rule become effective on August 19, 1999[*date of amended rule adoption*].~~

Any person subject to this rule shall meet the following compliance schedule:

1. By [*30 days from the date of amended rule adoption*], comply with Section J, Requirements - General Operating.

2. By [*six months from the date of amended rule adoption*], comply with the recordkeeping provisions in the following Sections:

a. O.1.d - mixing volumes.

b. O.1.e - reactive organic compound content data or stripper composite partial pressure data.

c. O.2 - purchase records,

d. O.3 - waste disposal records, and

e. O.4 - daily records for noncompliant materials.

3. By [*one year from the date of amended rule adoption*], comply with the applicable provisions in Sections G and H that have a phased-in effective date.

4. By [*one year from the date of amended rule adoption*], comply with Section Q, R, and T requirements.

5. By [*date of amended rule adoption*], comply with all other provisions of this rule.

Comment [A255]: The compliance schedule provision was expanded in response to a request from Industry.

Q. Requirement – Adhesive and Sealant Application Equipment

Comment [A256]: Section Q was modeled on the SJV Rule 4653.5.2 and the SC Rule 1168(c)(5) provisions.

Effective [*one year from the date of amended rule adoption*], no person shall apply adhesives or sealants unless the application is performed with equipment operating according to the manufacturers operating guidelines. In addition, except as provided in Section I, the application method employed shall be one of the following:

1. Electrostatic spray application, or

2. Flow coat application, or

3. Dip coat application, or

4. Roll Coater, or

5. High volume low pressure spraying equipment, or

6. Electrodeposition, or

7. Hand application methods, or

8. ~~Detailing or touch-up guns, or~~

9. Any other application method approved by the Control Officer, the Air Resources Board, and the Environmental Protection Agency, that has a coating transfer efficiency equivalent to or greater than ~~the~~ 65 percent efficiency as measured using the test method specified in Section N.10.

Comment [A257]: Similar to the SJV Rule 4653.5.2.8 provisions.

~~10~~9. Except as otherwise provided in Section Q.1~~0~~0, air-atomized spray may only be used for the application of contact adhesives or specialty contact adhesives.

Comment [A258]: Stems from the SJV Rule 4653.5.2.9 provision.

~~11~~10. For adhesive products and sealant products with an as applied viscosity of 200 centipoise or greater, airless spray, air-assisted airless, and air-atomized spray may be used.

Comment [A259]: Modeled on the SC Rule 1168(c)(5)(H) provision.

R. Requirements – Coating Stripper Use

Effective [*one year from the date of amended rule adoption*], except as provided in Section I, no person shall apply any stripper or solicit the use of any stripper unless it complies with one or both of the following:

1. The stripper contains less than 300 grams of reactive organic compound per liter (2.5 pounds of reactive organic compound per gallon) of material.

2. The stripper has a reactive organic compound composite partial pressure ~~of~~ equal to or less than 9.5 millimeters of mercury at 20 degrees Celsius.

S. Reporting Requirements

Submittal of an annual report to the District is required if a person holds a permit for applying adhesive products or sealant products subject to this rule. The annual report shall be due March 1 and it shall contain the following information for the previous calendar year:

1. monthly records required by Section O.4,

2. annual totals (gallons) based on each of the coating's and solvent's monthly data, and

3. name and address of the owner or operator, and the Permit to Operate number that the adhesive products and/or sealant products application operations are subject to.

Comment [A260]: The annual report provision was relocated from PAR 353.O.4 to a stand-alone section per an Industry suggestion.

T. Requirements - Solvent Cleaning Machine

Any person who owns, operates, or uses any solvent cleaning machine shall comply with the applicable provisions of Rule 321, Solvent Cleaning Machines and Solvent Cleaning.

Comment [A261]: Added to clarify that Rule 321 provisions apply to solvent cleaning machines when used in conjunction with applying adhesives and sealants.

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Appendix H
Santa Barbara County
Identification of Existing Federal Regulations and Air Pollution Control District Regulations that Apply to the Same Equipment or Source Type Covered in Rules 330, 337, 349, and 351

This appendix is provided to comply with the California Health & Safety Code Section 40727.2 requirements.

Federal Air Pollution Control Requirements

The federal requirements in the below-referenced statutes apply to the same equipment or source types covered by Rules 330, 337, 349, and 351:

- 40 CFR, Part 60, Section 60.310 *et seq.*, Subpart EE, Standards of Performance for Surface Coating of Metal Furniture. (Rule 330)
- 40 CFR, Part 60, Section 60.440 *et seq.*, Subpart SS, Standards of Performance for Industrial Surface Coating: Large Appliances. (Rule 330)
- 40 CFR, Part 60, Section 60.460 *et seq.*, Subpart TT, Standards of Performance for Metal Coil Surface Coating. (Rule 330)
- 40 CFR, Part 60, Section 60.490 *et seq.*, Subpart WW, Standards of Performance for the Beverage Can Surface Coating Industry. (Rule 330)
- 40 CFR, Part 63, Section 63.3480 *et seq.*, Subpart KKKK, National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Cans. (Rule 330)
- 40 CFR, Part 63, Subpart MMMM, Section 63.3880 *et seq.*, National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products. (Rule 330)
- 40 CFR, Part 63, Subpart NNNN, Section 63.4080 *et seq.*, National Emission Standards for Hazardous Air Pollutants: Surface Coating of Large Appliances. (Rule 330)
- 40 CFR, Part 63, Subpart RRRR, Section 63.4880 *et seq.*, National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Furniture. (Rule 330)
- 40 CFR, Part 63, Subpart SSSS, Section 63.5080 *et seq.*, National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Coil. (Rule 330)
- 40 CFR, Part 63, Subpart GG, Section 63.741 *et seq.*, National Emission Standards for Aerospace Manufacturing and Rework Facilities. (Rule 337)
- 40 CFR, Part 63, Subpart HHHHHH, Section 63.11169 *et seq.*, National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources. (Rules 330 and 337)
- 40 CFR, Part 63, Subpart XXXXXX, Section 63.11514 *et seq.*, National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories. (Rules 330 and 337)
- 40 CFR, Part 63, Subpart VVVV, Section 63.5680 *et seq.*, National Emission Standards for Hazardous Air Pollutants for Boat Manufacturing. (Rules 349 and 353)
- 40 CFR, Part 63, Section 63.5780 *et seq.*, Subpart WWWW, National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Component Production. (Rule 349)

Santa Barbara County Air Pollution Control District Requirements

These are shown in the following table.

Table 1. RULES THAT APPLY TO THE SAME EQUIPMENT TYPES
THAT ARE SUBJECT TO RULES 330, 337, 349, AND 353

GENERIC REQUIREMENTS	AFFECTED EMISSION UNITS	BASIS FOR APPLICABILITY
RULE 201: Permits Required	All emission units	Emission of pollutants
RULE 202: Exemptions to Rule 201	Applicable emission units	Insignificant activities/emissions, per size/rating/function
RULE 210: Fees	All emission units	Administrative
RULE 212: Emission Statements	All emission units	Administrative
RULE 302: Visible Emissions	All emission units	Particulate matter emissions
RULE 303: Nuisance	All emission units	Emissions that can injure, damage, or offend.
RULE 317: Organic Solvents	All emission units	Emission of pollutants
RULE 322: Metal Surface Coating Thinner and Reducer	All emission units	Composition of organics in all metal surface coating thinners and reducers shall not be photochemically reactive
RULE 324: Disposal and Evaporation of Solvents	All emission units	Solvent disposal requirements
REGULATION VIII: New Source Review	All emission units	Addition of new equipment or modification to existing equipment. Applications to generate ERC Certificates.
REGULATION XIII (RULES 1301-1305): Part 70 Operating Permits	All emission units	A stationary source is a major source.

A review of Table 1 indicates that there are no overlapping or conflicting averaging provisions, units, or any other pertinent provisions associated with emission limits.

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Appendix I
Santa Barbara County
Clarification of Rule Issues

The District worked closely with the regulated community to develop specific approaches to their individual needs and to clarify rule text. As a result of these efforts, staff received extensive feedback and input during the development stages. Also, members of the regulated community raised questions about the intent of certain rule provisions through discussions with staff and at the rule development public workshops.

The following text provides clarification of rule issues and consolidates comments/responses.[a] To help readers locate a specific issue, a table of contents is provided below.

Table 1. CLARIFICATION OF RULE ISSUES TABLE OF CONTENTS

[a] Comments received during the formal public comment period preceding the Board adoption hearing on the proposed rule changes, and staff's response to these comments, will be presented to the District Board of Directors as part of the rule adoption process.

1. Scope of new solvent requirements (330.A, 337.A, 349.A, and 353.A).

   Question/Issue: Will the proposed amended rules limit the solvent ROC-content for solvents used in stripping, thinning, or solvent welding?

   Answer/Response: The rule modifications include adding new solvent cleaning provisions. No changes to the ROC contents of thinning solvents or solvents used in solvent welding are proposed. A slightly lower ROC content for strippers subject to Rules 337 or 353 is being proposed in response to an ARB comment. Additional information for each of these categories is provided below:

   Thinning: The rules limit the coating and polyester resin material usage on an **as applied** basis. Sources will be able to continue to thin materials with solvents providing they comply with the **as applied** limits in the applicable rule.

   Stripping: The Rule 337 stripper ROC-content limit is being reduced from 400 to 300 grams per liter. Also, we added stripping provisions to Rule 353 to address debonding/unglueing issues on cured adhesives.

   Solvent Welding: Welding adhesive limits in Rule 353 apply to 3 types of plastic: ABS, CPVC, and PVC.

2. Consistency of definitions (330.C, 337.C, 349.C, and 353.C).

   Question/Issue: Industry requests that there be consistency in the definitions between the different rules. For example, some rules have a definition of **touch-up** and others don't.

   Answer/Response: The District strives for consistency of definitions across the rules. In some cases, the inconsistencies are intentional (e.g., the Rule 321 and Rule 337 definitions relative to aerospace vehicles and aerospace vehicle components). Staff generally proposes definitions found in ARB or EPA guidance documents or state or federal law.

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Regarding the **touch-up**, **touch-up coatings,** and **touch-up and repair** definitions, these vary from rule to rule due to the different operations. The Rule 330.B.2 exemption uses the term **touch-up coatings**; Rule 330.C's definition of this term is consistent with the one found in the metal parts coating Control Techniques Guidelines (CTG). Rule 337.B.2 exemption uses the term **touch-up and repair**, which is based on the aerospace CTG's **touch-up and repair operation** definition. Rule 337.B.11 exemptions use the term **touch-up**, which stems from the 40 CFR Section 63.747(c)(3)(i) and (ii) exemptions.

3. Conformal coating ROC-content limits (330.D and 337.D).

   Question/Issue: Is the application of conformal coatings covered by Rule 330, 337, or neither of those rules?

   Answer/Response: Neither of those rules. Rule 330 applies to metal parts and products. The application of conformal coatings to electronic components is exempt by Rule 330.B.4. Under proposed amended Rule 337 definition of **aerospace vehicle or component**, electronic components are excluded. A person using solvent in association with applying a conformal coating is subject to Rule 321 provisions.

4. Waste disposal methods (330.F.3, 337.F3, 349.D.3.c, and 353.J.3)

   Question/Issue: Are owners and operators allowed to comingle their wastes?

   Answer/Response: Yes, provided the wastes are disposed of by methods specified in the rule:

   1. A commercial waste solvent reclamation service licensed by the State of California.
   2. At a facility that is federally or state licensed to treat, store or dispose of such waste.
   3. Recycling in conformance with Section 25143.2 of the California Health and Safety Code.

5. Waste drum labeling or marking requirement (330.F.7, 337.F.7, 349.D.3.g, and 353.J.7)

   Question/Issue: How much detailed information needs to be on secondary containers; for example, do we need to specify the materials ROC content?

   Answer/Response: No, the owner or operator needs to only specify generically what material is in the container. For example, the drum's markings could show, "mixed waste paints, solvents, and strippers." There is no need to specify the material's density or ROC content.

6. Using manufacturer's recommended mixing data to comply with the recordkeeping provision (330.H.1.d, 337.H.1.d, 349.F.1.d, and 353.O.1.d)

   Question/Issue: My source mixes paints, adhesives, and epoxies following the manufacturers' recommended amounts for each component and the manufacturers provide the "as applied" ROC content data for the mixed products. Will maintaining the manufacturer's mixing data meet the rule requirements on recording specific mixing data for each batch?

   Answer/Response: Yes, provided the manufacturer's recommended mixing procedures are followed.

7. Record retention period and meaning of "readily available" (330.H.8, 337.H.6, 349.F.7, and 353.O.6)

   Question/Issue: Are owners and operators required to keep records longer than 2 years?

   Answer/Response: It depends; records need to be maintained for 5 years if a source is subject to:

   1. Rule 370, Potential to Emit - Limitations for Part 70 Sources, or
   2. Rule 1301, Part 70 Operating Permits - General Information, or
   3. A MACT standard.

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Question/Issue: Please explain what "readily available" means. We have a large stationary source with numerous facilities and records are not kept at each facility's site.

Answer/Response: We consider "readily available" to mean the records can be provided within twenty-four hours after receiving a District request to inspect and review them.

8. Methods for determining a coating or a solvent's ROC content

Question/Issue: Will the District require that a source have a U.S.EPA Method 24 test done to determine the ROC content of a coating or a solvent or will the VOC data from a material safety data sheet (MSDS) be sufficient?

Answer/Response: Ideally, coating and solvent manufacturers base their product's VOC grams per liter data on a U.S.EPA Method 24 test. For solvents comprised of one chemical, the product's ROC content equals its density (assuming it is not an "exempt compound"). MSDS reported VOC concentration data may be acceptable. However, in certain cases the District may require a source to have an independent laboratory perform a U.S.EPA Method 24 test to determine a product's VOC content.

9. Do toluene, acetone, methanol, isopropanol, and methyl ethyl ketone comply with the new rule provisions (330.J, 337.D.2, 337.J, 349.H, 353.G, 353.H, and 353.R)?

Question/Issue: Our company wipe cleans electronic parts and products using TAMI solvents before applying surface coatings. TAMI solvents include toluene, acetone, methanol, and isopropanol (isopropyl alcohol, IPA) solvents. Will we be able to continue using the TAMI solvents under the proposed amended rules? What about the use of methyl ethyl ketone (MEK) solvent?

Answer/Response: It depends on the type of product being cleaned, the purpose of the cleaning, and the applicable rule. If the product cleaning is not associated with a Rule 330, 337, or 353-type surface coating or a Rule 349 polyester resin operation, then Rule 321 applies. In general, the answer is:

1. no, TAMI and MEK solvents cannot be used if the operation is subject to a new solvent provision prohibiting the use of high ROC-content solvents, and
2. yes, if the operation is exempt from the rule's solvent cleaning provision, the operation is not within the rule's applicability, or the rule requirements are such that the solvent complies (e.g., Rule 337 limits of 200 g/l or 45 mm of Hg).

The only cleaning compound used in the TAMI-MEK group that complies with the proposed amended rules' **ROC-content** limits is acetone. Acetone is technically not a "solvent," as the term is used in Rule 321 and the proposed amended rules; it contains no ROCs and no toxic air contaminants. Toluene and isopropanol meet the **ROC composite partial pressure** limit of PAR 337.

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This table shows the TAMI and MEK cleaning material ROC data and the rule limits:

Solvent	Solvent ROC Content (grams per liter aka g/l)	Rule 330, 349, and 353 Solvent ROC Content Limit (g/l)	Rule 337 Solvent ROC Content Limit (g/l)	Solvent ROC Composite Partial Pressure (mm Hg at 20° C)	Rule 337 Solvent ROC Composite Partial Pressure Limit (mm Hg at 20° C)
Toluene	866	25	200	21.86	45
Acetone[a]	0	25	200	0	45
Methanol	799	25	200	97	45
Isopropanol	785	25	200	32.8	45
Methyl Ethyl Ketone	809	25	200	78	45

The following summarizes the solvent cleaning/stripping ROC content and/or composite partial pressure limits in each of the proposed amended rules.

Rule 330 Surface preparation and cleaning of application equipment: 25 g/l. Surface coating operations and associated solvents used on electronic components may be exempt by Rule 330.B.4 or B.11.

Rule 337 Surface preparation: 200 g/l or 45 mm of Hg at 20 degrees C; stripper: 300 g/l or 9.5 mm of Hg at 20 degrees Celsius; application equipment cleaning: 25 g/l or use of an enclosed cleaning system. Per the Rule 337 **aerospace vehicle or component** definition, Rule 337 does not apply to electronic components. Exemptions in PAR 337.B.9 may apply to ancillary electronic equipment.

Rule 349 Product cleaning, surface preparation, repair & maintenance cleaning, and application equipment cleaning: 25 g/l. Solvent cleaning of electronics are likely exempt by Sections B.4.a, b, c, or f or Section B.5.

Rule 353 Surface preparation and cleanup solvent: 25 g/l; stripper: 300 g/l or 9.5 mm of Hg at 20 degrees Celsius. The cleaning of electronic parts may be exempt by Rule 353.B.13.

10. Acceptable methods for cleaning spray guns (330.J, 337.J.1.b, 349.H, and 353.G.2).

Question/Issue: What are the acceptable methods for cleaning spray guns under the proposed amended rules?

Answer/Response: These vary depending on the rule as shown in the following table.

Rule	**Solvent ROC Content Limit**	**Alternative Compliance Methods (one of the following, as allowed)**	
		Use of Add-On Control Equipment	**Use of an Enclosed Cleaning System[b]**
330	25	Allowed	Not an alternative compliance option[c]
337	25	Allowed	Allowed
349	25	Allowed	Not an alternative compliance option[a]
353	25	Allowed	Allowed

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[a] "Acetone" is technically not a solvent.
[b] Item 25 discusses the definition of an "enclosed cleaning system."
[c] See item 23 for more information.

Question/Issue: What if my source uses acetone to clean spray guns?

Answer/Response: Acetone is technically not considered to be a solvent as the compound contains no reactive organic compounds or toxic air contaminants. Hence, no District rule requirements apply to cleaning of application equipment with acetone. It should be noted that acetone is flammable and other agency requirements likely apply.

11. Use of wash stations to clean application equipment and/or use of solvent cleaning machines to clean parts prior to painting (330.M, 337.M, 349.J, and 353.T).

Question/Issue: We use solvent wash stations that have capacities greater than 1 gallon to clean application equipment. Will this activity be allowed under the proposed amended rules?

Answer/Response: Yes, provided the equipment and its operation comply with the provisions of Rule 321. "Wash stations" are considered to be "cold cleaning machines." All solvent cleaning machines should comply with Rule 321 regardless of an overall process being subject to an operation-specific rule (e.g., Rules 330, 337, 349, or 353). To clarify this issue, the District is proposing:

1. a minor Rule 321.B.6 revision,
2. changes to PARs 330, 337, 349, and 353 to:

    a) expand the definition of "associated solvent" to include "solvent cleaning machines,"
    b) add a definition of "solvent cleaning machine," and
    c) include new sections at the end of each rule that indicate:

    Requirements - Solvent Cleaning Machine

    Any person who owns, operates, or uses any solvent cleaning machine shall comply with the applicable provisions of Rule 321, Solvent Cleaning Machines and Solvent Cleaning.

Question/Issue: We paint metal parts that are subject to Rule 330. Immediately before painting them, we surface prep them using a solvent cleaning machine (degreaser). Is this allowed under the proposed amended rule?

Answer/Response: Yes, provided the equipment and its operation comply with the provisions of Rule 321. For further details, see the previous answer/response.

12. Add aerospace vehicle and component adhesive and sealant provisions to Rule 337 (337).

Question/Issue: Aerospace vehicle and component adhesive requirements should be in Rule 337.

Answer/Response: We agree and have added these provisions to Rule 337. This is consistent with the EPA Control Techniques Guidelines for Coating Operations at Aerospace Manufacturing and Rework Operations.

13. Aerospace ground support equipment provisions (337.A).

Question/Issue: Satellite ground support equipment is sometimes refurbished (e.g., removal and replacement of insulation). The Rule 337 exemption provisions should extend to the ground support equipment due to the need to maintain certain levels of cleanliness during the transportation and handling of satellites.

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Answer/Response: We concur and have included the following exemptions and definition.

PAR 337.B.7 Exemption:

> Section D.2 and J.1.a shall not apply to solvents and strippers used in space vehicle manufacturing and rework.

PAR 337.B.9.g Exemption:

> Section J.1.a shall not apply to wipe cleaning of aircraft and ground support equipment fluid systems that are exposed to the fluid, including air-to-air heat exchangers and hydraulic fluid systems.

PAR 337.C Definition:

> "Space Vehicle" means any man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, which through contamination can compromise the space vehicle performance.

The District modeled the Rule 337 **space vehicle** definition on the 40 CFR Part 63, Subpart GG term.

For surface coating operations on ground support equipment not associated with space vehicles, the provisions of Rule 339, Motor Vehicle and Mobile Equipment Coating Operations, may apply.

14. Satellite coating application equipment cleaning exemption (337.B.7).

Question/Issue: There are overlapping provisions between Rule 321 and Rule 337 regarding satellite coating operations. Specifically, Rule 321.B.10 exempts the cleaning of application equipment associated with applying satellite coatings. Since satellite coating operations are covered in Rule 337, this exemption seems out of place.

Answer/Response: The District concurs and plans to delete the Rule 321.B.10 text relative to applying coatings on satellites in a future rulemaking effort. It should be noted that proposed amended Rule 337.B.7 provides exemptions for satellite stripping and surface preparation (337.D.2 and J.1.a). However, per PAR 337.J.1.b, satellite coating application equipment cleaning will require either 1) a solvent with an ROC content 25 g/l or less, or 2) an enclosed cleaning system.

15. Rule 321 and 337 definitions of **aerospace vehicle or component** are different (337.C).

Question/Issue: The Rule 337 definition of aerospace vehicle or component excludes electronic components. But the Rule 321 definitions of aerospace vehicle and aerospace vehicle component do not exclude electronic components. Are these differences between the Rule 321 and Rule 337 definitions intentional?

Answer/Response: Yes, our approach is to make the provisions of Rule 321 applicable to electronic components used in aerospace vehicles and aerospace vehicle components. Electronic component coating operations are not subject to Rule 337, which is consistent with the provisions in 40 CFR Part 63, Subpart GG.

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16. Adhesive primer vs. adhesive bonding primer definitions (337.C).

    Question/Issue: In Rule 337, what's the difference between adhesive primer (as defined in the compatible substrate primer definition) and adhesive bonding primer?

    Answer/Response: These terms stem from 40 CFR 63, Subpart GG and we defer to EPA for an explanation on their differences.

    > "Adhesive Bonding Primer" means a primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250°F or below and primers with a design cure above 250°F.
    >
    > "Compatible Substrate Primer" includes two categories: "compatible epoxy primer" and "adhesive primer." [. . .] "Adhesive primer" is a coating that (1) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application, or (2) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

17. Meaning of the word "new" for the "new commercial aircraft" limit in Table 337-2 (337.D.1).

    Question/Issue: Rule 337 has a category for new commercial aircraft under adhesive bonding primer. What constitutes a new aircraft part or product?

    Answer/Response: If an aircraft part or product is currently undergoing construction/assembly or has been recently made (e.g., within the last three months) or has not yet been used, it will be considered to be new.

18. Rule 337 adhesive limits for aerospace vehicles and components (337.D.1).

    Question/Issue: What are the proposed adhesive limits in Rule 337?

    Answer/Response: They are found in proposed amended Rule 337, Section D.1, Table 337-2 for specialty coatings (Background Paper's Appendix E). The District included adhesive categories from the 1997 Control Techniques Guideline, "Surface Coating Operations at Aerospace Manufacturing Rework Operations." Staff also included a few adhesive categories from the SJV, SC, and VC rules.

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19. Rule 337 coating categories and limits (337.D.1).

    Question/Issue: For proposed amended Rule 337, why were coating types added, what existing limits were changed, and what was the basis for the change?

    Answer/Response: The need to add coating types stems from the state requirement to include every feasible control measures. The District is using the EPA guidance on meeting the presumptive reasonably available control technology requirements to meet California's every feasible measures requirement. The District used the 1997 Control Techniques Guideline, "Surface Coating Operations at Aerospace Manufacturing Rework Operations," to determine the coating types that should be added. Staff also used some of the general categories from the National Emission Standards for Hazardous Air pollutants (NESHAP) for the source type: 40CFR63, Subpart GG.

    The annotated proposed amended Rule 337 (Background Paper's Appendix E) shows the existing limits that were changed in strikeout and underline format. This annotated rule also includes notes on the basis for coating limits.

    In general, staff compared the limits in the CTG and NESHAP to those in existing Rule 337 and other air districts. Lower ROC-content limits that have been achieved in practice were included in lieu of the limits recommended in the CTG or NESHAP.

20. Stealth aircraft coating limits (337.D.1).

    Question/Issue: What is the ROC-content limit for aircraft coatings that prevent the transmission of light?

    Answer/Response: PAR 337's definition of electric- or radiation-effect coating includes coatings that interact through absorption or reflection of light. The Table 337-2 limit for this category is 800 g/l. If the U.S. Dept. of Defense has designated an electric- or radiation-effect coating as classified, such coating is exempt from the Table 337-2 limit per Rule 337.B.12.

21. Debonding and reworking parts that have been glued (337.D.2, 337.J.1.a, 353.G.1, and 353.R).

    Question/Issue: Reworking parts that are being glued together requires special consideration. The process may involve cured or uncured adhesives. It overlaps the Rule 353 surface preparation and cleanup provisions.

    Answer/Response: The District agrees and has taken the following steps to clarify the requirements when reworking parts that have uncured or cured adhesives:

    1. A definition of **stripper** is added to Rules 337 and 353, which indicates:

       "Stripper" means any liquid that is applied to a surface to remove cured or dried coatings primers, adhesives (e.g., debonding or unglueing), topcoats, and temporary protective coatings.

    2. Adhesive provisions were added to Rule 337.

    3. Section R was added to Rule 353, which is similar to the Rule 337.D.2 stripper use provisions.

    Under the proposed amended rules, removal of **uncured** adhesives will be subject to either 337.J.1.a (200 g/l or less ROC content or a solvent with an ROC composite partial pressure of 45 mm of Hg at 20 degrees C or less) or Rule 353.G.1 (to become 25 g/l or ROC or less) depending on the source type.

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For removal of **cured or dried** adhesives (use of a stripper), Rule 337.D.2 or Rule 353.R will apply, depending on the source type. Both of these provisions are the same: 300 g/l or less ROC content or a solvent with an ROC composite partial pressure of 9.5 mm of Hg at 20 degrees C or less.

22. Using high ROC-content solvents when cleaning aerospace coatings from application equipment (337.J.1.b).

Question/Issue: Cleaning application equipment that applies epoxy polyamide topcoats to satellites requires a high ROC-content solvent (900 g/l). Will this be allowed under the proposed amended rules?

Answer/Response: Yes, provided an enclosed cleaning system is employed.

23. Option to use an enclosed cleaning system for cleaning application equipment in lieu of using low-ROC solvents (337.J.1.b and 353.G.2).

Question/Issue: Proposed amended Rules 337 and 353 allow the option of using an enclosed cleaning system when cleaning application equipment. However, Rules 330 and 349 do not include this option. Was this intentional?

Answer/Response: Yes, we followed the same approach used in other air districts. Sources subject to Rule 330 and 349 using enclosed cleaning systems need to ensure the solvent ROC content does not exceed 25 grams per liter.

24. Solvent cleaning of application equipment with an enclosed cleaning system (337.J.1.b and 353.G.2).

Question/Issue: Is an **enclosed cleaning system** for cleaning application equipment a **solvent cleaning machine**?

Answer/Response: No, unless a source is using an airless solvent cleaning machine or an air-tight solvent cleaning machine exclusively for cleaning application equipment. Airless and air-tight solvent cleaning machines are designed to remove the air inside the chamber before solvent is introduced into the cleaning chamber. Due to cost considerations, it is unlikely that a source would use an airless or air-tight solvent cleaning machine for cleaning application equipment.

25. Definition for **enclosed cleaning system** (337.J.1.b and 353.G.2).

Question/Issue: What constitutes an enclosed cleaning system for cleaning application equipment?

Answer/Response: The District added the following definition to Rule 102:

> **"Enclosed Cleaning System"** means any application equipment cleaner (e.g., an enclosed gun washer) that totally encloses spray guns, cups, nozzles, bowls, and other parts during solvent washing, rinsing, and draining procedures. An enclosed cleaning system for cleaning application equipment is not a solvent cleaning machine.

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26. Rule 353 applicability when a source applies aerospace vehicle and component adhesives (353.A).

Question/Issue: Is the use of adhesives on aerospace vehicles and components exempt from Rule 353 per Section B.1.f.1?

Answer/Response: Yes, and the proposed amended rule changes are intended to make the Rule 353.B.1.f.1 exemption less ambiguous. The legislative intent of existing Rule 353.B.1.f.a text was to exempt aerospace adhesives from Rule 353. Per the August 19, 1999 Rule 353 Board Package response to Public Comment number 1-2:

> The District amended Section B.1.f to list the adhesives and sealants that are exempt from Rule 353 because they are subject to Rule 337, Surface Coating of Aircraft or Aerospace Vehicle Parts and Products, or Rule 354, Graphic Arts.
>
> C&D Aerospace, an aircraft refurbishing facility, uses adhesives and sealants. Section B.1.f of Rule 353 exempts C&D Aerospace's adhesive and sealant operations from Rule 353. These adhesive and sealant operations are subject to Rule 337.
>
> The District initially believed some portions of operations at C&D Aerospace and The Jet Center @ Santa Barbara would be subject to Rule 353. However, after further analyses, we decided that aircraft and aerospace glues are highly specialized and should be regulated through Rule 337.

Also, the response to Public Comment number 1-10 from this same document indicates in part:

> C&D Aerospace adhesive and sealant applications are subject to Rule 337 and they are exempt from Rule 353 by Section B.1.f.

27. Exemption for avionic equipment (353.B.13.i).

Question/Issue: Why is avionic equipment included in the Rule 353.B.13.i exemption from Section G.1, H, and R?

Answer/Response: Without this exemption, avionic equipment would be subject to those Rule 353 solvent/stripping provisions.

Per the definition of **aerospace vehicle or component**, Rule 337 does not apply to electronic components. Rule 353.B.5.a exempts adhesives/sealants and associated solvents that are subject to Rule 337. Since Rule 337 does not apply to aerospace vehicle electronic components, the Rule 353.B.5.i exemption does not apply to such electronic components.

The District recognizes the need for maintaining a higher degree of cleanliness for avionic equipment (and other items identified in 353.B.13.i). Therefore, we have added a limited exemption for surface preparation, cleanup, and stripping operations associated with avionic equipment in Rule 353.

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28. What **surfaces** are included in the requirements for cleanup solvent and/or cleanup method (353.G.1)?

    Question/Issue: Please clarify the meaning of the term **surfaces** in the current Rule 353.G.1 provision:

    > Except as provided in Section I of this rule, no person shall use materials containing reactive organic compound for the removal of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primer from surfaces, other than spray application equipment, unless the reactive organic compound composite partial pressure of the solvent used is less than 45 millimeters (mm) of mercury (Hg) at 20 degrees (°) Celsius (C).

    Does this provision apply to only solvent used to clean work surfaces?

    Answer/Response: No, the provision applies to cleanup of any surface (e.g., product surfaces, jigs, clamps, benches, and any other work surfaces after adhesive has been applied), but not to solvents used to clean spray application equipment. Cleaning of product surfaces before the application of adhesives is subject to 353.H. If a source subject to Rule 353 is cleaning uncured adhesives from parts in a rework activity, then the Rule 353.G.1 provisions apply. If the adhesive has cured (dry to the touch), then the removal of the adhesive is part of a stripping operation and the new 353.R provisions apply.

29. Requiring use of low ROC content solvent or an enclosed gun washer when cleaning application equipment (353.G.2).

    Question/Issue: What are the costs associated with requiring a non-ROC solvent or an enclosed cleaning system in lieu of using a solvent wash station for cleaning application equipment?

    Answer/Response: The cost of an enclosed cleaning system ranges between $500 and $2,800 for an automated system. If an existing wash station has MEK solvent and acetone is used instead, there will be a solvent costs savings. IPA and acetone solvent costs are about the same.

    A wash station employed with acetone is not subject to Rule 321 because acetone is technically not classified as a solvent. Hence, a source could forgo enclosed gun washer costs or solvent cleaning machine modification costs if acetone is employed.

30. Architectural coating permit exemption vs. the tertiary-butyl acetate one gallon per year per stationary source permit exemption (202.D.14 & 202.D.10.l.2)

    Question/Issue: Bridge painting is permit-exempt by Rule 202.D.14. However, if the bridge coating materials contain tertiary-butyl acetate (tBAc) and tBAc use is in excess of one gallon, does Rule 202.D.10.l.2 require that the painting operation be permitted?

    Answer/Response: It depends; painting with materials where tBAc use exceeds 1 gallon per year per stationary source will trigger a permit if the bridge painted is part of a stationary source. Rule 202.D.10.l indicates, ". . . notwithstanding any exemption defined in this rule, no new or modified stationary source . . ." Thus, D.10.l.2 overrides the D.14 provision and a permit is required if the bridge is part of a stationary source. Otherwise, Rule 202.D.10.l is not applicable and the operation is exempt by Rule 202.D.14.

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31. Sources for solvent ROC and toxic air contaminant data

Question/Issue: Where can I find data on a particular solvent's ROC content and toxic air contaminant (TAC) classification?

Answer/Response: The District has summarized data on many solvents. To access this data, download the Rule 321 Staff Report from this link: www.sbcapcd.org/apcd/boardfiles/9-10-R321-BL.pdf. ROC and TAC data is shown in the Staff Report's Appendix N, Solvent Information Table, which begins on page 249 of the PDF file. All TAC compounds that had been classified as TACs as of September 2010 are shown in Appendix M, which begins on page 233 of the PDF.

Other sources of ROC/TAC data include material safety data sheets, product labels, and reference books.

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Appendix J
Santa Barbara County
Comparison of the Adjoining Air District Rules
that Apply to the Same Equipment or Source Type Covered in Rules 330, 337, 349, and 351

To navigate to the **aerospace vehicles and components performance standards** click here (begins on page J-12), the **polyester resin operation performance standards** click here (begins on page J-24), or the **adhesive and sealant performance standards** click here (begins on page J-31).

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
General Coatings				
Baked	275 g/l	275 g/l	275 g/l	275 g/l
Air Dried	340 g/l	340 g/l	340 g/l	275 g/l
Multi-Component no listed below				
Baked				275 g/l
Air Dried				340 g/l
Camouflage				
Baked	360 g/l	360 g/l		360 g/l
Air Dried	420 g/l	420 g/l		420 g/l
Electric Insulating Varnish				
Baked		620 g/l	275 g/l	
Air Dried		620 g/l	420 g/l	
Etching Filler				
Baked		720 g/l		420 g/l
Air Dried		720 g/l		420 g/l
Extreme High Gloss				
Baked	360 g/l	360 g/l		
Air Dried	420 g/l	420 g/l		
Extreme Performance				
Baked	360 g/l	360 g/l	275 g/l	360 g/l
Air Dried	420 g/l	420 g/l	420 g/l	420 g/l
Heat Resistant				
Baked	360 g/l	360 g/l		360 g/l
Air Dried	420 g/l	420 g/l		420 g/l
High Gloss				
Baked				360 g/l
Air Dried				420 g/l
High Performance Architectural				
Baked	420 g/l	720 g/l		420 g/l

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
Air Dried	420 g/l	750 g/l		420 g/l
High Temperature				
Baked	420 g/l	720 g/l		420 g/l
Air Dried	420 g/l	720 g/l		420 g/l
Metallic Topcoat				
Baked	360 g/l	360 g/l		360 g/l
Air Dried	420 g/l	420 g/l		420 g/l
Military Specification				
Baked		275 g/l		
Air Dried		420 g/l		
Mold Seal				
Baked		750 g/l		420 g/l
Air Dried		750 g/l		420 g/l
Pan Baking				
Baked				420 g/l
Air Dried				420 g/l
Powder Coatings			50 g/l	
Prefabricated Architectural Component				
Baked		275 g/l		
Air Dried		420 g/l		
Pretreatment Wash Primer				
Baked	420 g/l	780 g/l		275 g/l
Air Dried	420 g/l	780 g/l		340 g/l
Repair				
Baked	360 g/l	360 g/l		
Air Dried	420 g/l	420 g/l		
Silicone Release				
Baked	420 g/l	420 g/l		420 g/l
Air Dried	420 g/l	420 g/l		420 g/l
Solar Absorbent				
Baked	360 g/l	360 g/l		360 g/l
Air Dried	420 g/l	420 g/l		420 g/l
Solid Film Lubricant				
Baked	880 g/l			

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
Air Dried	880 g/l			
Touch-Up Baked Air Dried	 360 g/l 420 g/l	 360 g/l 420 g/l		
Vacuum Metalizing Baked Air Dried		 800 g/l 800 g/l		 420 g/l 420 g/l
Zinc-Filled Primers Baked Air Dried		 420 g/l 420 g/l		
Application Equipment	Electrostatic, electrodeposition, flow coat, roll coat, dip coat, HVLP, brush coat, continuous coat, hand application, or other approved method that can demonstrate at least 65% transfer efficiency.	Electrostatic, flow coating, HVLP, or other approved method that can demonstrate at least 65% transfer efficiency.	Electrostatic, electro-deposition, flow coat, roll coat, dip coat, HVLP, hand application, detailing or touch-up guns, or other approved method that can demonstrate at least 65% transfer efficiency.	Electrostatic, flow coat, dip coat, HVLP, hand application, or other approved method that can demonstrate at least 65% transfer efficiency.
Control Equipment	Capture and control efficiency of 90% or greater. Use of the VOC emission control system shall not result in emissions in excess of those that would have been emitted had the operator complied with other applicable rule provisions.	Control equipment shall result in the same or greater emission reduction as would compliance with the rule.	Overall efficiency of 85.5% or greater. Use of the ROC emission control system shall not result in emissions in excess of those that would have been emitted had the operator complied with other applicable rule provisions.	Capture and control efficiency of 90% or greater.
Surface Preparation/Cleanup Solvent	Surface preparation and cleanup solvents shall have an ROC content of 25 g/l or less.	Closed containers.	Solvents shall have an ROC content of 25 g/l or less. (Becomes effective one-year after adoption of the amended rule.)	Surface preparation and cleanup solvents shall have an ROC content of 25 g/l or less.

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
Clean-Up Equipment, Cleaning of Application Equipment	Solvents shall have an ROC content of 25 g/l or less.	Enclosed gun washer or equivalent APCO-approved gun washer when using a solvent with a composite vapor pressure < 45 mm HG at 20 degrees C.	Solvents shall have an ROC content of 25 g/l or less. (Becomes effective one-year after adoption of the amended rule.)	Solvents shall have an ROC content of 25 g/l or less.
Evaporative Loss Minimization	Closed containers for storage and disposal of solvent soaked rags and paper. Solvent containers must be closed when not in use. Minimize VOC-containing materials spills and clean-up spills immediately.	Closed containers for storage and disposal of solvent soaked rags and paper. Solvent containers must be closed when not in use.	Closed containers for storage and disposal of ROC-containing materials (including cloth, paper, sand, etc.). Containers for ROC-contain materials must be closed when not in use. Minimize ROC-containing material spills and clean-up spills immediately. Dispose of wastes that contain ROCs by 1) a reclamation service, 2) a facility that treats, stores, or disposes of such wastes, or 3) recycling. Containers used to store ROC-containing materials shall be marked or clearly labeled indicating the name of the material they contain.	Closed containers for storage and disposal of solvent soaked rags and paper. Solvent containers must be closed when not in use.
Recordkeeping	Maintain records of VOC contents, mix ratios, coating categories used, coating and solvent use records. Maintain daily records of coating and solvent use. Keep record when using add-on emission control equipment.	-Have coating manufacturer's specification sheets, material safety data sheets (MSDS), or technical data sheets available for review. -Maintain records showing the amount and type of coatings and solvent used on a monthly basis, VOC content of coating and	-Maintain a current file of all ROC-containing materials that provides all information necessary to evaluate compliance, including: 1) material name and manufacturer ID, 2) application method, 3) material type, type operation, and for liquid coatings, the drying method	-Maintain a current list of all coatings that provides all information necessary to evaluate compliance, including: 1) the name and manufacturer of each coating and any catalysts and reducers used with each coating, 2) mix ratio of components used in coatings, 3) ROC content of

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
		solvents, application method, and amount of solvent disposed of or sent to a recycler.	and equipment coated, 4) specific mixing volumes of each components for each batch, 5) corresponding ROC content limit and as applied ROC content of materials used, and 6) current manufacturer's specification sheets, material safety data sheets (MSDS), product data sheets, or air quality data sheets, which lists the ROC content. available. Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container. -Maintain records for each ROC-containing material purchased for use. The records shall include the following: 1) material name and manufacturer ID, and 2) material type. -Maintain records of the disposal method each time waste solvent, waste solvent residue, or other waste material that contains ROCs is removed for disposal. -Keep monthly records of: 1) the volume of the ROC-containing materials used, 2) ROC content of the materials, and 3) resulting	coatings, as applied, and 4) coating category from §B.1 of each coating used. -Maintain records which shows the following for each ROC containing material used for cleanup, including equipment cleaning, and each ROC containing material used for substrate surface cleaning: 1) type, and 2) ROC content -Maintain records of the monthly volume of each complying coating and solvent used and daily volume of each noncompliant coatings used. -When using add-on emission control equipment, maintain daily records of key system operating and maintenance data. -All lists and records shall be maintained for a minimum of 2 years from the date of entry and shall be available to the District.

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
			ROC emissions. -If claiming the §B.1 or exemption, maintain: 1) daily volumes of non-complying coatings used by separate formulation, and 2) annual running totals of non-complying coating volumes used for each separate formulation and all formulations. -When using add-on emission control equipment, maintain daily records of key system operating and maintenance data. -Maintain records for 2 years unless otherwise required by state or federal regulations. Such records shall be available to the District.	
Submittal of an Annual Report			Submittal of an annual report is required if a person: 1) holds a permit for equipment subject to the rule, or 2) a person is subject to the rule and applies non-complying coatings. The report is to include: 1) monthly records required by §H.5, 2) annual totals, 3) if claiming the §B.1 exemption, the annual totals of non-complying coatings per §H.6.b, and 4) if permitted, the name and	

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
			address of the company or agency, and PTO number.	
Prohibition of Specification	No person shall solicit or require for use or specify the application of a coating subject to this rule if such use or application results in a violation of any of the provisions of this rule. The prohibition of this Section shall apply to all written or oral contracts under the terms of which any coating is to be applied to any metal part or product at any physical location within the District.	A person shall not use, apply, or specify any coating for use on any metal part or product subject to the provisions of this Regulation which contains volatile organic compounds in excess of the Section D.1 limits, as applied.		No person shall specify, solicit or require the application of any coating to any metal part or product, or the use of any equipment cleaning solvent, if such application or use would violate this rule. This prohibition applies to all written and oral contracts for which any coating subject to this rule is to be applied to any metal part or product at any location in Ventura County.
Coating Compliance Statement or Labeling Requirements	Manufacturer of coatings and solvents must provide VOC concentration, mixing instructions, formulation information, and recommendations regarding thinning, redacting, or mixing with any other VOC containing materials, and express the coating VOC content on an as applied basis when used in accordance with the manufacturer's recommendations.		Manufacturer of coatings and solvents must provide VOC concentration, mixing instructions, formulation information, and recommendations regarding thinning, redacting, or mixing with any other VOC containing materials, and express the coating VOC content on an as applied basis when used in accordance with the manufacturer's recommendations.	Manufacturer of coatings and solvents must provide VOC concentration, mixing instructions, formulation information, and recommendations regarding thinning, redacting, or mixing with any other VOC containing materials, and express the coating VOC content on an as applied basis when used in accordance with the manufacturer's recommendations.

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
Liquid Cleaning Material Compliance Statement or Labeling Requirements	Manufacturers of any solvents subject to this rule shall indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density of the solvent, as supplied. The VOC content shall be expressed in units of gm/liter or lb/gallon.			Manufacturer of liquid cleaning materials used in coating operations shall designate on product labels or data sheets: 1) VOC content as supplied, 2) recommendations regarding mixing with any other VOC containing materials, and 3) VOC content when used in accordance with the manufacturer's recommendation
Exemptions	-Okay to use noncompliant coatings if usage is 55 gallons per rolling, consecutive 365-day period or less. -Rule does not apply to the application of coatings to aircraft, aerospace vehicles, marine vessels, can, coils, and magnetic wire and equipment subject to other prohibitory rules (4602, 4612, 4684). -The rule provisions do not apply to stripping of cured coatings, cured adhesives, and cured inks, except the stripping of such materials from spray application equipment. -The 25 g/l of VOC solvent limit does not apply to the 1) cleaning of solar cells, laser	-Any coating used in volumes of less than 20 gallons in any calendar year is exempt from the coating VOC limit, provided that the source demonstrates that no complying coatings are available. Written approval must be obtained from the District. -Stationary sources using not more than four (4) gallons of paint, varnish, lacquer, thinner, and other solvent containing materials in any one day based on a monthly operating day average, provided the recordkeeping requirements in Subsections E.1 and E.2 of this Rule are satisfied. -Stationary sources electing	-Any non-complying coatings with separate formulation used in volumes of less than 20 gallons of each non-complying formulation per stationary source in any calendar year is exempt from the ROC limit. Coatings used for operations that are exempt per Sections B.2, B.3, B.4, B.5, B.6, B.10, and B.12 shall not be included in calculating the volume of coatings used under this exemption. To qualify for this exemption, the total volume of non-complying coatings at the stationary source shall not exceed 55 gallons annually. -The application method and recordkeeping requirements	- Coating limits do not apply if there is no complying coating available and total usage of all noncomplying coatings has not exceeded 55 gallons in any calendar year. - This rule does not apply to: a. Aircraft or aerospace vehicle coating operations b. Marine vessel exteriors c. Motor vehicle and mobile equipment coating. d. Aerosol coating products. - The provisions of this rule, except Subsection B.8 (Prohibition of Specifications), shall not apply to any stationary source that emits less than 200 pounds of ROC in every rolling period of 12 consecutive calendar months

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
	hardware, scientific instruments, or high precision optics; 2) cleaning in laboratory tests and analyses, or bench scale or research and development projects; 3) cleaning of paper-based gaskets; and 4) cleaning of clutch assemblies where rubber is bonded to metal by means of an adhesive. -The 25 g/l of VOC solvent requirement does not apply to the cleaning of application equipment used to apply 1) coatings on satellites, or 2) radiation effect coatings.	to utilize control equipment demonstrated to the satisfaction of the APCO to result in the same or greater emission reduction as would compliance with this rule. Emissions, for the purpose of this exemption, shall be calculated on an hourly basis. -The application equipment requirements do not apply when a source can demonstrate to the satisfaction of the APCO that a transfer efficiency of 65% cannot be achieved or metallic coatings that contain more than 30 grams of metal particles per liter are used.	do not apply to touch-up and repair and texture coatings, provided the ROC-content limits are met and records are maintained pursuant to a PTO. -Operations exempt from the rule include: 1) residential noncommercial coating operations, 2) coating operations where the metal involved does not constitute a substantive part of the total surface area, 3) coatings supplied as aerosol products, 4) operations subject to other prohibitory rules, and 5) stripping (except when cleaning application equipment). -Solvents are exempt (except for recordkeeping) that have two percent or less content of ROC and TAC. -The following are exempt from coating ROC content limits and the application methods: 1) stencil coatings, 2) safety-indicating coatings, 3) magnetic data storage disk coatings, 4) solid-film lubricants and 5) electric insulating and thermal conducting coatings. - The solvent cleaning provisions shall not apply to:	from metal parts and products coating operations. - The solvent cleaning provisions do not apply where total usage of noncomplying substrate surface cleaners does not exceed 5 galls per rolling 12-month period.

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
			1) semiconductors and microelectromechanical devices (thin film deposition, vacuum deposition, dry etching, metal lift-off, and associated maintenance activities), 2) electronic components, 3) small encasements for electronic components, 4) parts, subassemblies, or assemblies exposed to strong oxidizers or reducers, 5) transparencies, polycarbonate, or glass substrates, 6) solar cells, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, and military fluid systems, and 7) cleaning/stripping of personal protective equipment. - The rule does not apply coatings that contain less than 20 grams of reactive organic compound per liter (0.17 pounds of reactive organic compound per gallon) of coating, less water and less exempt compounds, as applied.	

Regulated Component	Surface Coating of Metal Parts and Products Performance Standards			
	San Joaquin Valley Unified APCD Rule 4603 (09/17/2009)	San Luis Obispo County APCD Rule 411 (01/28/1998)	Santa Barbara County APCD Rule 330 (Proposed)	Ventura County APCD Rule 74.12 (04/08/2008)
Applicability	The provisions of this rule shall apply to the surface coating of metal parts or products, large appliances parts or products, metal furniture, and plastic parts and products, automotive/transportation and business machine plastic parts and products, and pleasure crafts, and to the organic solvent cleaning, and the storage and disposal of all solvents and waste solvent materials associated with such coating.	This Rule is applicable to any person who applies or specifies the use of surface coatings to metal parts and products	This rule is applicable to any person who manufactures any metal part coating or product coating for use within the District, as well as any person who uses, applies, or solicits the use or application of any metal part or product coating or associated solvent within the District.	The provisions of this rule apply to any person who applies or specified the use of surface coatings to metal parts or products.
Comments	The SJV Rule 4603 has exemptions and limits for the following that have been omitted from this analysis for brevity: -Dip coated steel joists, -Large appliance parts and products, -Metal furniture, -Plastic parts, and -Pleasure craft.		The SBC Rule 330 only has a few coating categories. The **specialty coating** categories, which are specified in other air districts (e.g., pretreatment wash primer, high temperature, high gloss, etc.), are subject to the SBC Rule 330 **general coating** limits.	

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
Ablative Coating[2]	After 12/31/2012: 600	600	
Adhesion Promoter	850	850 - to become 250 (effective 24 months after the date of adoption)	850
Adhesives			
Commercial Interior Adhesive[2]		760	
Cyanoacrylate Adhesive[2]		1020	
Fuel Tank Adhesive[2]		620	
Non-Structural	250	250	250
Rocket Motor Bonding Adhesive[2]		890	
Rubber-Based Adhesive[2]		850	
Structural			
Autoclavable	50	50	50
Nonautoclavable	850	850	850
Adhesive Bonding Primers			780
New Commercial Aircraft	250	250	
All Military Aircraft	805	805	
Remanufactured Commercial Aircraft Parts	805	805	
Sonic and Acoustic Applications	805	805	
Long Term	250	250	
Short Term	250	250	
Antichafe Coatings	600	600 - to become 420 (effective 24 months after the date of adoption)	600
Barrier Topcoat	420	420	420
Bearing Coating[2]	After 12/31/2012: 620	620	
Caulking and Smoothing Compounds[2]	After 12/31/2012: 850	850	
Chemical Agent-Resistant Coating[2]	After 12/31/2012: 550	550	
Clear Topcoat	520	520	
Commercial Exterior Aerodynamic Structure Primer[2]		350	
Compatible Substrate Primer[2]		350	
Conformal Coating	750		750
Corrosion Prevention System Compound[2]		710	
Cryogenic Flexible Primer[2]		350	
Cryoprotective Coating[2]		600	

[1] The San Luis Obispo County APCD is omitted from this table as they have no rule for this equipment/operation category.
[2] This category is from the 1997 Control Techniques Guideline for Coating Operations at Aerospace Manufacturing and Rework Operations.
Santa Barbara County APCD

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
Dry Lubricative Materials			
Fastener Manufacturing	120	120	250
Nonfastener Manufacturing	675	675	880
Electric/Radiation Effect Coatings	800	800	800
Electrostatic Discharge and Electromagnetic Interference Coating[2]	After 12/31/2012: 800	800	
Elevated-Temperature Skydrol-Resistant Commercial Primer[2]		350	
Epoxy Polyamide Topcoat[2]	After 12/31/2012: 660	660	
Exterior Primer[3]		**350**	
Extreme Performance Interior Topcoat[2]		420	
Fastener Sealants	675 After 12/31/2012: 600	675 - to become 600 (effective 24 months after the date of adoption)	675
Fire-Resistant (interior) Coating		600	
Fire Resistant Coatings			
Civilian (Interior)	650		650
Flexible Primer[2]		350	
Flight Test Coatings Used on			
Missiles or Single-Use Target Craft	420	420	420
All others	600	600	600
Fuel Tank Coating (Excluding Fuel Tank Adhesive)[2]		420	
Fuel Tank Coatings			420
General	420		
Epoxy	420		
Fuel Tank Adhesives	620		620
High Temperature Coating	850	720	850
Impact Resistant Coating	420		420
Insulation Covering[2]		740	
Intermediate Release Coating[2]		750	
Lacquer[2]	After 12/31/2012: 830	830	
Maskants - Chemical Milling	250		250
Optical Anti-Reflective Coating	700		700
Maskants:			

[3] The proposed amended Rule 337 lists this coating type in Table 337-1, Reactive Organic Compound Content Limits for Coatings Other than Specialty Coatings. The six coating types in that table were modeled on categories found in 40 CFR, Part 63, Subpart GG, National Emission Standards for Aerospace Manufacturing and Rework Facilities (Section 63.741 *et seq.*). Coatings types from this NESHAP are shown in **bold**.

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
Bonding Maskant[2]		1,230	
Critical Use and Line Sealer Maskant[2]		1,020	
Seal Coat Maskant[2]		1,230	
Metallized Epoxy Coating[2]	After 12/31/2012: 740	700	
Mold Release[2]	After 12/31/2012: 780	780	
Optical Anti-Reflective Coating[2]		700	
Part Marking Coating[2]	After 12/31/2012: 850	850	
Pretreatment Coatings	780	780	780
Primer[3]		**350**	
Primers			
General	350		
Commercial Exterior Aerodynamic Structure	350		350
Primers Not Resistant to Phosphate Esters			350
Primers Resistant to Phosphate Esters			
Rain Erosion Resistant Coating	800	600	420
Rocket Motor Nozzle Coating	After 12/31/2012: 660	660	
Scale Inhibitor	880	880	880
Sealant			600
Extrudable/Rollable/Brushable Sealant[2]	600 After 12/31/2012: 280	280	
Sprayable Sealant[2]		600	
Sealant Primer		720	
Self-Priming Topcoat[3]		**420**	
Silicone Insulating Material	After 12/31/2012: 850	850	
Solid Film Lubricants			
Fastener Manufacturing	250	250	
Fastener Installation	880	880	880
Nonfastener Manufacturing	880	880	880
Space Vehicle Coatings			
Electrostatic Discharge Protection	800	800	800
Other Space Vehicle Coatings	1000	1000	1000
Adhesives	800		800
Specialized Function Coating[2]	After 12/31/2012: 890	890	
Temporary Protective Coatings	250	250	250
Thermal Control Coating[2]	After 12/31/2012: 800	800	
Topcoat[3]		**420**	
Topcoats	420		420

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
Type I Chemical Milling Maskant[3]		**250**	
Type II Chemical Milling Maskant[3]		**160**	
Unicoats (Self Priming Topcoats)	420		420
Wet Fastener Installation Coating[2]	After 12/31/2012: 675	675	
Wing Coating	750	750	420
Wire Coatings			
Electronic	420		420
Anti-Wicking	420		420
Pre-Bonding Etching	420		420
Phosphate Ester Resistant Ink	925		925
Spray Application Equipment Transfer Requirements	Electrostatic, electrodeposition, flow coat, roll coat, dip coat, brush coat, or HVLP. In lieu of meeting this requirement add-on control equipment may be used.	Electrostatic, electrodeposition, flow coat, roll coat, dip coat, HVLP, hand application, detailing or touch-up guns, or other approved method that can demonstrate at least 65% transfer efficiency. Specific provisions allow use of air-atomized spray for certain adhesives.	Electrostatic, flow coat, dip coat, HVLP, hand application, or other approved method that can demonstrate at least 65% transfer efficiency.
Control Equipment Capture and Control Efficiency	Overall capture and control efficiency of 85.5% or greater.	Overall capture and control efficiency of 85.5% or greater. Compliance through the use of add-on exhaust control equipment shall not result in affected pollutant emissions in excess of the affected pollutant emissions that would result from compliance with other applicable portions of the rule.	Overall capture and control efficiency of 85% or greater.
Solvent Use, Surface Preparation, and Clean Up	The solvent is to contain less than 200 grams of ROC per liter of material, as applied, or have an ROC composite partial pressure less than or equal to 45 mm Hg at a temperature of 20^{o} C. In lieu of meeting this requirement add-on control equipment may be used.	The following becomes effective one-year after adoption of the amended rule.: When performing surface preparation for coating application and cleanup (other than spray application equipment cleaning) the solvent is to contain less than 200 grams of ROC per liter of material, as applied, or have an ROC composite partial pressure less than or equal to 45 mm Hg at a temperature of 20 ^{o}C.	No person shall use a solvent for surface cleaning, clean-up or engine gas path cleaning excluding stripping coatings or cleaning coating application equipment unless 1) contains less than 200 grams of ROC per liter of material, as applied, or 2) ROC composite partial pressure of the solvent is less than or equal to 25 mm Hg at a temperature of 20 ^{o}C.

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
		Except for solvent cleaning of spray application equipment, any person performing solvent cleaning with a solvent containing more than 25 grams per liter of material shall use one or more of the following cleaning devices or methods: 1) Wipe cleaning where solvent is dispensed to wipe cleaning materials from containers that are kept closed to prevent evaporation, except while dispensing solvent or replenishing the solvent supply; 2) Application of solvent from hand-held spray bottles, squirt bottles, or other closed containers with a capacity of one liter or less; or 3) Non-atomized solvent flow, dip, or flush cleaning method where pooling on surfaces being cleaned is prevented or drained, and all solvent runoff is collected in a manner that enables solvent recovery or disposal. The collection system shall be kept closed to prevent evaporation except while collecting solvent runoff or emptying the collection system.	
Evaporative Loss Minimization	An 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	Closed containers for storage and disposal of ROC-containing materials (including cloth, paper, sand, etc.). Containers for ROC-contain materials must be closed when not in use. Minimize ROC-containing material spills and clean-up spills immediately. Dispose of wastes that contain ROCs by 1) a reclamation service, 2) a facility that treats, stores, or disposes of such	Closed containers shall be used for disposal and storage of cloth, paper, or other solvent-containing materials used for surface preparation, coating, cleanup, or paint removal.

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
	is empty.	wastes, or 3) recycling. Containers used to store ROC-containing materials shall be marked or clearly labeled indicating the name of the material they contain.	
Solvent Use, Cleaning of Application Equipment	An 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. In lieu of meeting this requirement add-on control equipment may be used.	Use a solvent with an ROC content of 25 grams per liter. In lieu of meeting the reactive organic compound-content limit, a person may use an enclosed cleaning system, or equipment that is proven to the satisfaction of the Control Officer to be equally effective as an enclosed cleaning system at controlling emissions. (Becomes effective one-year after adoption of the amended rule.)	Use of 1) an enclosed gun washer or "low emission spray gun cleaner" that has been approved in writing by the APCO, which is properly used for spray equipment cleaning, and 2) The ROC composite partial pressure of organic solvent used is less than 45 mm Hg at 20^{o}C.
Stripper	No operator 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. In lieu of meeting this requirement add-on control equipment may be used.	No person shall apply any stripper unless it contains less than 300 grams of ROC per liter, as applied, and/or unless its ROC composite partial pressure is 9.5 mm Hg or less at 20 ^{o}C.	No person shall use a coating stripper unless it contains less than 300 grams of ROC per liter, as applied, or unless its ROC composite partial pressure is 9.5 mm Hg or less at 20 ^{o}C.
Prohibition of Solicitation	No person shall solicit, specify, or require an operator to use any coating, solvent, spray	No person shall specify the use of any coating on any aerospace vehicle or component subject to the	No person shall solicit, specify or require any other person to use in the District any coating,

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
	equipment, or VOC emission control system that does not meet the limits or requirements of this rule.	provisions of this rule, which, as applied, contains reactive organic compounds in excess of the limits shown in the tables. No person shall specify the use of any stripper unless it complies with the provisions of the rule.	adhesive, solvent, spray equipment, or control equipment that does not meet the limits or requirements of this rule.
Coating Labeling or Seller Information Requirements (Compliance Statement)		Coatings manufacturers shall display on product labels a statement recommending thinning (does not apply if thinning with water). The recommendation shall specify that the coating is to be employed without thinning or diluting under normal environmental and application conditions unless any thinning recommended on the label for normal environmental and application conditions does not cause a coating to exceed its applicable standard for reactive organic compound content. Each container of any coating subject to the rule shall display the maximum reactive organic compound content of the coating, as applied, and after any thinning as recommended by the manufacturer.	Coatings manufacturers shall designate on product labels or data sheets, the ROC content or the Volatile Organic Compounds (VOC) content of coatings including coating reducers and catalysts, as supplied. This designation shall include recommendations regarding thinning, reducing, or mixing with any other ROC containing materials, and express the coating ROC or VOC content on an as applied basis when used in accordance with the manufacturer's recommendations.
Liquid Cleaning Material Labeling or Seller Information Requirements (Compliance Statement)			The manufacturer of liquid cleaning materials used in coating operations shall designate on product labels or data sheets the ROC content and ROC Composite Partial Pressure of cleaning materials as supplied. This designation shall include recommendations regarding mixing with any other ROC

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
			containing materials, and express the cleaning material ROC content when used in accordance with the manufacturer's recommendations.
Recordkeeping	Maintain records of ROC contents, mix ratios, daily usage records of coatings, adhesives strippers, and solvents and items coated. Also, for solvents, maintain a record of the vapor pressure. Okay to maintain monthly records of material use if only using complying materials. Keep record when using add-on emission control equipment.	-Maintain a current file of all ROC-containing materials that provides all information necessary to evaluate compliance, including: 1) material name and manufacturer ID, 2) application method, 3) manufacturer's specific use instructions (e.g., specific use for which the material is intended), type operation (e.g., coating, stripping, or solvent cleaning), and for coatings operations, the coating type from Tables 337-1 or 337-2 and the type equipment coated, 4) specific mixing volumes of each components for each batch, 5) corresponding ROC content limit and as applied ROC content of materials used, and 6) current manufacturer's specification sheets, material safety data sheets (MSDS), product data sheets, or air quality data sheets, which lists the ROC content. available Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container. -Maintain records for each ROC-containing material purchased for use. The records shall include the following: 1) material name and manufacturer ID, and 2) material type (e.g., coating type from Table	Maintain records of ROC contents, mix ratios, daily usage records of coatings, adhesives strippers, and solvents. Also, for solvents, maintain records of the ROC composite partial pressure. Okay to maintain monthly records of material use if only using complying materials. Keep record when using add-on emission control equipment.

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
		337-1 or Table 337-2, cleanup solvent, stripper, etc.). - Maintain records of the disposal method each time waste solvent, waste solvent residue, or other waste material that contains ROCs is removed for disposal. -Keep monthly records of: 1) the volume of the ROC-containing materials used, 2) ROC content of the materials, and 3) resulting ROC emissions. -If claiming the §B.1 exemption, maintain: 1) daily volumes of non-complying coatings used by separate formulation, and 2) annual running totals of non-complying coating volumes used for each separate formulation and all formulations. -When using add-on emission control equipment, maintain daily records of key system operating and maintenance data. -Any records required to be maintained pursuant to the rule shall be kept on site for at least 2 years unless a longer retention period is otherwise required by state or federal regulation(s). Such records shall be readily available for inspection and review by the District.	
Submittal of an Annual Report		Submittal of an annual report is required if a person: 1) holds a permit for equipment subject to the rule, or 2) a person is subject to the rule and applies non-complying coatings. The report is to include: 1) monthly records required by	

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
		§H.4, 2) annual totals, 3) if claiming the §B.1 exemption, the annual totals of non-complying coatings per §H.7.b, and 4) if permitted, the name and address of the company or agency, and PTO number.	
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.	-This rule is applicable to any person who manufactures any aerospace vehicle coating or component coating for use within the District, as well as any person who uses, applies, or solicits the use or application of any aerospace vehicle or component coating or associated solvent within the District. Rule 337 does not apply to electronic components.	This rule is applicable to the manufacturing, assembling, coating, masking, bonding, paint stripping, and surface cleaning of aerospace components and the cleanup of equipment associated with these operations. Where Rule 74.12, Surface Coating of Metal Parts and Products, applies to the coating or cleaning of metal parts, including but not limited to tooling operations, this rule shall not apply.
Exemptions	-Jet engine or rocket engine flushing operations using any solvent other than trichloroethylene are exempt from this rule. - Except for the recordkeeping provisions of Sections 6.1.1 and 6.1.4, 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.	-Any non-complying coatings with separate formulation used in volumes of less than 20 gallons of each of each non-complying formulation per stationary source in any calendar year is exempt from the ROC limit. To qualify for this exemption, the total volume of non-complying coatings at the stationary source shall not exceed 200 gallons annually. Coatings used for operations that are exempt per Sections B.2, B.3, B.6, B.8, B.11, B.12, and B.13 shall not be included in calculating the volume of coatings used under this exemption. -The application method and recordkeeping requirements do not	-Except for the prohibition of solicitation provisions, The rule does not apply to any stationary source that emits < 200 lbs in every rolling period of 12 consecutive months from assembly and component manufacturing operations. Emissions from cold cleaners, vapor degreasers, and aerosol products, shall not be included in this determination. -Coating limits do not apply to: any coating with separate formulations used in volumes of less than 20 gallons in any calendar year or any adhesive with separate formulations

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
	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. - 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. -The coating and adhesive limits do 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	apply to touch-up and repair, provided Section D.1 limits are met and records are maintained pursuant to a PTO. -The provisions of the rule do not apply to coatings supplied as aerosol products. -Any coating and associated solvent cleaning subject to the requirements of this rule shall be exempt from the requirements of Rule 317, Organic Solvents, and Rule 322, Metal Surface Coating Thinner and Reducer. -Solvents are exempt (except for recordkeeping) that have two percent or less content of ROC and TAC. -The rule does not apply coatings that contain less than 20 grams of reactive organic compound per liter (0.17 pounds of reactive organic compound per gallon) of coating, less water and less exempt compounds, as applied. - Stripper and solvent requirements do not apply when performing space vehicle manufacturing and rework. -The rule does not apply to chemical milling, metal finishing, and electrodeposition (except for electrodeposition of coatings). -The solvent cleaning provisions shall not apply to: 1) small encasements for electronic components, 2) parts, subassemblies, or assemblies exposed to strong oxidizers or reducers, 3) transparencies,	used in volumes of less than 10 gallons in any calendar year at a stationary coating source, provided that the total volume of noncomplying coatings (excluding noncomplying adhesives) used at a stationary source does not exceed 200 gallons annually. In addition, a person claiming the 20 gallons of coating per year exemption shall notify the APCO in writing that substitute complying coatings are not available. -Surface cleaning requirements do not apply to the cleaning of aerospace assembly and subassembly surfaces that are exposed to strong oxidizers or reducers such as nitrogen tetroxiode, liquid oxygen or hydrazine. -The coating transfer efficiency requirements do not apply to the application of coatings that contain less than 20 grams of ROC per liter of coating less water and less exempt organic compounds. -The rule does not apply to aerosol coating products.

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
	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. --The coating transfer efficiency requirements do not apply to the application of coatings that 1) contain less than 20 grams of ROC per liter of coating less water and less exempt organic compounds, or 2) Are dispensed from hand-held aerosol cans.	polycarbonate, or glass substrates, and 4) solar cells, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, and military fluid systems. - The application method requirements do not apply to 1) any situation that normally requires the use of an airbrush or an extension on the spray gun to properly reach limited access spaces, or 2) the use of airbrush application methods for stenciling, lettering, and other identification markings. -Section D.1, Table 337-1 chemical milling maskant limits shall not apply to: 1) touch-up of scratched surfaces or damaged maskant, and 2) touch-up of trimmed edges. -Section D.1 shall not apply to electric- and radiation-effect coatings that have been designated as "classified" by the United States Department of Defense. -The rule shall not apply to coatings (including adhesive products and sealant products) subject to the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq. - Stripping/solvent requirements to do not apply to the cleaning of personal protective equipment. -wipe cleaning of breathing oxygen systems, surfaces prior to adhesive bonding, aircraft and ground support equipment that are exposed to fluid,	

Regulated Component	Surface Coating of Aerospace Vehicles and Components Performance Standards[1]		
	San Joaquin Valley Unified APCD Rule 4605 (06/16/2011)	Santa Barbara County APCD Rule 337 (Proposed)	Ventura County APCD Rule 74.13 (11/11/2003)
		fuel cells/tanks, confined spaces, associated with upholstery, curtains, and honeycomb cores.	
Comments		Staff included definitions and coating categories from the 1997 Control Techniques Guidelines and the federal NESHAP for aerospace manufacturing and rework facilities.	

Regulated Component	Polyester Resin Operations Performance Standards[4]		
	San Joaquin Valley Unified APCD Rule 4684 (06/16/2011)[5]	Santa Barbara County APCD Rule 349 (Proposed)	Ventura County APCD Rule 74.14 (04/12/2005)
General Polyester Resin Material or General Purpose Resin[6]	35%	35%	
Marble or Cultured Resins - VC Term Marble Resins - SJV Term	After 12/31/2012: 10% or 32%, as supplied, with no fillers	2-years after rule adoption: 10% or 32%, as supplied, with no fillers	10% or 32% as supplied, no filler
Solid Surface Resins	After 12/31/2012: 17%	2-years after rule adoption: 17%	17% by weight monomer content.
Tub/Shower Resins	After 12/31/2012: 24% or 35%, as supplied, with no fillers	2-years after rule adoption: 24% or 35%, as supplied, with no fillers	24% or 31% as supplied, no filler
Lamination Resins	After 12/31/2012: 31% or 35%, as supplied, with no fillers	2-years after rule adoption: 31% or 35%, as supplied, with no fillers	31% or 35% as supplied, no filler
Tooling Resin[6]			
Atomized (spray) 30%	After 12/31/2012: 30%	2-years after rule adoption: 30%	
Non-atomized 39%	After 12/31/2012: 39%	2-years after rule adoption: 35%	
Specialty Resin[6]	50% and use of low VOC polyester resins.	50%	
Fire Retardant Resin	After 12/31/2012: 38%	2-years after rule adoption: 38%	38%
High Strength Materials	After 12/31/2012: 40%	2-years after rule adoption: 40%	40%

[4] The San Luis Obispo County APCD is omitted from this table as they have no rule for this equipment/operation category.
[5] The San Joaquin Valley Unified APCD Rule 4684 has special provisions for **fiberglass boat manufacturing**. Essentially those provisions require the use of a closed molding process and the monomer content limits shown in the table, coupled with solvent cleaning provisions, and solvent storage and disposal requirements. In lieu of meeting those provisions, there are various compliance options. For the purposes of brevity, additional details of the SJV Rule 4684 provisions on **fiberglass boat manufacturing** are omitted from this analysis.
[6] The monomer content of the material shall not be more than the percentages specified, by weight, as applied.
Santa Barbara County APCD

Regulated Component	Polyester Resin Operations Performance Standards[4]		
	San Joaquin Valley Unified APCD Rule 4684 (06/16/2011)[5]	Santa Barbara County APCD Rule 349 (Proposed)	Ventura County APCD Rule 74.14 (04/12/2005)
Corrosion Resistant Resin	After 12/31/2012: 48%	2-years after rule adoption: 48%	48%
All Other Resin[6]	After 12/31/2012: 35%	2-years after rule adoption: 35%	35%
Corrosion-Resistant Materials or Resins[6]	See Specialty Resins.	See Specialty Resins.	
Fire Retardant Materials or Resin	See Specialty Resins.	See Specialty Resins.	
Tooling Gel Coat	After 12/31/2012: 40%	2-years after rule adoption: 40%	
Gel Coat	See Clear Gel Coat and Pigmented Gel Coat.	See Clear Gel Coat and Pigmented Gel Coat.	See Clear Gel Coat and Pigmented Gel Coat.
Clear Gel Coat[6]	50%	50%	
Marble Resins	After 12/31/2012: 40%	2-years after rule adoption: 40%	40%
All Other Resins	After 12/31/2012: 44%	2-years after rule adoption: 44%	44%
Pigmented Gel Coat[6]	45% and use of low VOC pigmented gel coats.	45%	
White and Off White	After 12/31/2012: 40%	2-years after rule adoption: 30%	30%
Non-White	After 12/31/2012: 37%	2-years after rule adoption: 37%	37%
Primer	After 12/31/2012: 28%	2-years after rule adoption: 28%	28%
Specialty Gel Coat	After 12/31/2012: 48%		
Resin Containing Vapor Suppressant	Weight loss from ROC emissions <60 g/sq. m.	Weight loss from ROC emissions <60 g/sq. m.	Weight loss from ROC emissions <60 g/sq. m.
Closed Mold System	Yes, no limit.	Yes, no limit.	Yes, no limit.
Thinning or Diluting Prohibition			Complying formulations shall not be thinned or diluted with any ROC or changed in any manner that may increase ROC emissions after testing, but prior to or during application.
Spray Application Equipment Transfer Requirements	Spray application of polyester resin shall only be performed using airless, air assisted airless, high-volume, low-pressure (HVLP) spray equipment, or electrostatic spray equipment. High-Volume, Low-Pressure (HVLP) spray equipment shall be operated in accordance with the manufacturer's recommendations.	Spraying operation shall use only airless, air-assisted airless, high volume low pressure spray equipment, or electrostatic spray equipment as approved by the Control Officer and operated in accordance with the manufacturer's recommendations.	Airless, air-assisted airless, electrostatic, or high volume-low pressure spray equipment shall be used in any spray application, except for touch-up or repair using a hand-held, air-atomized spray gun utilizing an attached resin container of no more than one quart capacity.
Control Equipment Capture and Control Efficiency	90% overall capture and control efficiency or greater.	85%, which becomes 90% two years after adoption, overall	90% overall capture and control efficiency or greater.

Regulated Component	Polyester Resin Operations Performance Standards[4]		
	San Joaquin Valley Unified APCD Rule 4684 (06/16/2011)[5]	Santa Barbara County APCD Rule 349 (Proposed)	Ventura County APCD Rule 74.14 (04/12/2005)
		capture and control efficiency or greater. Compliance through the use of an emission control system shall not result in affected pollutant emissions in excess of the affected pollutant emissions that would result from compliance with the other applicable rule provisions.	
Solvent Use, Surface Preparation, and Clean Up	All cleaning solvents (including product cleaning during manufacturing, surface preparation, and repair and maintenance cleaning) shall have an ROC content of 25 g/l or less.	The following becomes effective one-year after adoption of the amended rule: All cleaning solvents (including product cleaning during manufacturing, surface preparation, and repair and maintenance cleaning) shall have an ROC content of 25 g/l or less.	Cleaning material used on lines, rollers, brushes, spray equipment and personnel, shall be either a Clean Air Solvent or shall not exceed 25 grams ROC per liter of material as applied.
Evaporative Loss Minimization	An owner or operator shall store or dispose of all uncured polyester resin materials, fresh or spent solvents, waste solvent cleaning materials such as cloth, paper, etc., coatings, adhesives, catalysts, and thinners in self-closing, 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.	Closed containers for storage and disposal of ROC-containing materials (including cloth, paper, sand, etc.). Containers for ROC-contain materials must be closed when not in use. Minimize ROC-containing materials spills and clean-up spills immediately. Dispose of wastes that contain ROCs by 1) a reclamation service, 2) a facility that treats, stores, or disposes of such wastes, or 3) recycling.	All materials containing reactive organic compounds, used or unused, including but not limited to semi-solid or liquid polyester resin materials and solid or liquid cleaning materials, shall be stored in closed containers and shall not leak.
Solvent Use, Cleaning of Application Equipment	Solvents shall have an ROC content of 25 g/l or less.	Solvents shall have an ROC content of 25 g/l or less. (Becomes effective one-year after adoption of the amended rule.)	Cleaning material used on lines, rollers, brushes, spray equipment and personnel, shall be either a Clean Air Solvent or shall not exceed 25 grams ROC per liter of material as applied.
Recordkeeping	-An operator subject to this rule	Maintain records of 1) the type of	Records shall contain: 1)

Regulated Component	Polyester Resin Operations Performance Standards[4]		
	San Joaquin Valley Unified APCD Rule 4684 (06/16/2011)[5]	Santa Barbara County APCD Rule 349 (Proposed)	Ventura County APCD Rule 74.14 (04/12/2005)
	shall maintain the following records: 1) daily records of the type and quantity of all resins, gel coats, fillers, catalysts, and cleaning materials (including cleaning solvents) used in each operation, 2) records of the VOC content, in weight percent, of all polyester resin and gel coat, filler materials, including the weight percent of non-monomer VOC content of the resin and gel coat, used or stored at the stationary source, 3) records of the VOC content of all cleaning materials used and stored at the stationary source, and 4) records showing the weight loss per square meter during resin polymerization for each vapor-suppressed resin. -An operator claiming the 20 gallons per month exemption shall maintain records of polyester materials usage to support the claim of exemption.	resin, catalyst, and cleaning materials used, 2) if applying polyester resin materials in spraying operations, the spray application method used (e.g., airless, air-assisted airless, etc.), 3) for approved vapor suppressed resins, the weight loss in g/sq. m, monomer percent, and gel time, 4) if mixing solvents, specific solvent mixing volumes of each component for each batch, 5) the actual as applied ROC compound content of solvent and, when not using a closed mold system, the corresponding monomer content limits from Sections D.1.a, b, or c, and the actual as applied monomer contents, or if using a vapor suppressant the actual polyester or vinyl ester resin weight loss rate of the material used, and 6) current polyester resin material and solvent manufacturer's specification sheets, material safety data sheets (MSDS), product data sheets, or air quality data sheets, which lists the ROC content. Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container. -Maintain records for each ROC-containing material purchased for use. The records shall include the following: 1) material name and manufacturer ID, and 2) material type.	monthly reports (initialed by operator) of the manufacturer and product number of each polyester resin material and cleaning material used, 2) the monomer content in percent by weight of each polyester resin material used, both as applied and as supplied. For cleaning material, the ROC content in grams of ROC per liter of material as applied. Documentation shall be available to support these records. If using add-on control equipment, daily reports of the continuous control efficiency monitoring information. If claiming the 20 gallons per month exemption, in lieu of 1, 2, and 3 above, maintain monthly records of the amount of polyester resin material used.

Regulated Component	Polyester Resin Operations Performance Standards[4]		
	San Joaquin Valley Unified APCD Rule 4684 (06/16/2011)[5]	Santa Barbara County APCD Rule 349 (Proposed)	Ventura County APCD Rule 74.14 (04/12/2005)
		- Maintain records of the disposal method each time waste solvent, waste solvent residue, or other waste material that contains ROCs is removed for disposal. -Keep monthly records of volumes used, polyester resin material as-applied monomer content and solvent ROC content, and resulting ROC emissions. -Maintain records when using add-on emission control equipment. -If claiming the §B.1 exemption, maintain monthly records of styrene volumes used to support the exemption claim. - Any records required to be maintained pursuant to the rule shall be kept on site for at least 2 years unless a longer retention period is otherwise required by state or federal regulation(s). Such records shall be readily available for inspection and review by the District.	
Submittal of an Annual Report		Submittal of an annual report is required if a person holds a permit for equipment subject to the rule. The report is to include: 1) monthly records required by §F.4, 2) annual totals, 3) if claiming the §B.1 exemption, the annual totals of styrene used per §F.6, and 4) the name and address of the company or agency and the PTO the polyester resin operation is subject to.	
Applicability	Applicability The provisions of	This rule shall apply to any	This rule is applicable to the

Regulated Component	Polyester Resin Operations Performance Standards[4]		
	San Joaquin Valley Unified APCD Rule 4684 (06/16/2011)[5]	Santa Barbara County APCD Rule 349 (Proposed)	Ventura County APCD Rule 74.14 (04/12/2005)
	this rule apply to commercial and industrial polyester resin operations, fiberglass boat manufacturing operations, and to the organic solvent cleaning, and the storage and disposal of all solvents and waste solvent materials associated with such operations.	person owning or operating any commercial or industrial polyester resin operation.	manufacture of products from or the use of polyester resin material, including touch-up, repair and rework activities.
Exemptions	-Other than the recordkeeping requirements, the provisions of this rule shall not apply polyester resin operation using less than 20 gallons per month of polyester resin material. -The solvent cleaning provisions do not apply to 1) cleaning of solar cells, laser hardware, scientific instruments, or high precision optics, and 2) cleaning in laboratory tests and analyses, or bench scale or research and development projects. -Resins and gel coats used for touch up, repair, or small jobs, may have a monomer content limit up to 10% more than the applicable limit set forth in Table 1. Such resins or gel coats shall only be applied by a hand-held atomized spray gun which has a container for the resin or gel coat as part of the gun. Resins or gels applied by another method shall comply with the applicable limit in Table 1. Total material use for all small jobs at a facility shall not exceed two (2) gallons a day.	-Polyester resin material limits do not apply to the addition or use of styrene, provided the volume of styrene used is less than 50 gallons per calendar year per stationary source. -Solvents are exempt (except for recordkeeping) that have two percent or less content of ROC and TAC. -This rule shall not apply to polyester resin operations performed with polyester resin materials that contain no reactive organic compounds. -The solvent cleaning provisions shall not apply to: 1) semi-conductors and microelectro-mechanical devices (thin film deposition, vacuum deposition, dry etching, metal lift-off, and associated maintenance activities), 2) electronic components, 3) small encasements for electronic components, 4) parts, subassemblies, or assemblies exposed to strong oxidizers or reducers, 5) transparencies, polycarbonate, or glass	The provisions of Section B of this rule shall not apply to stationary sources using not more than 20 gallons per month of polyester resin material.

Regulated Component	Polyester Resin Operations Performance Standards[4]		
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		substrates, 6) solar cells, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, and military fluid systems, 7) cleaning/stripping of coating off of personal protective equipment, and 8) space vehicles. -Section H shall not apply to polyester resin operations production or rework of the following products, provided the solvents used contain 200 grams of reactive organic compound per liter of material or less or have a composite partial pressure of a 45 millimeter of mercury at 20 degrees Celsius: 1) satellites, satellite components, aerospace vehicles, aerospace vehicle components, aerospace vehicle payloads, or aerospace vehicle payload components. -Solvent cleaning shall not apply to polyester resin operations production or rework of products used in any laboratory tests or analyses, including quality assurance or quality control applications, bench scale projects, or short-term (less than 2 years) research and development projects. Records are to be kept when claiming this exemption. -Solvent cleaning shall not apply to cleaning/stripping of polyester resin material off of personal protective equipment.	
Comments		Per ARB suggestions, we are: 1)	

Regulated Component	Polyester Resin Operations Performance Standards[4]		
	San Joaquin Valley Unified APCD Rule 4684 (06/16/2011)[5]	Santa Barbara County APCD Rule 349 (Proposed)	Ventura County APCD Rule 74.14 (04/12/2005)
		lowering the polyester resin material monomer content limits, and 2) increasing the emission control equipment efficiency. The District is also amending the rule's solvent cleaning provisions per the 2010 Clean Air Plan commitment.	

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
ADHESIVES/SEALANT PRODUCTS - SPECIFIC APPLICATION LIMITS			
Adhesives			
ABS welding	400 (325)	400	400
Cellulosic plastic welding	(100)		
Ceramic floor tile	(65)		65
Ceramic tile installation	130 (65)	130	65
Computer diskette jacket manufacturing		850	
Contact bond (contact adhesive)	250 (80)	250	80
Contact bond-specialty substrates	250	400	250
Cove base installation	150 (50)	150	50
CPVC welding	490	490	490
Drywall	(50)		50
Elastomeric	(750)		
Flexible vinyl	(250)		
Floor covering installation	(150)		
Indoor carpet or carpet pad	(50)		50
Indoor floor covering installation (except ceramic tile installation)	150	150	
Metal to urethane/rubber molding or casting		850 (250, effective 12 months	

[7] The San Luis Obispo County APCD is omitted from this table as they have no rule for this equipment/operation category.
[8] Rule 4653 and Rule 74.20 group the materials in a manner that deviates from the model rule in the ARB Reasonably Available Control Technology and Best Available Control Technology guidance document for adhesives and sealants. Staff has attempted to show the SJV and VC limits for the categories that correspond to that model rule. The SJV Rule4653 has stricter requirements that go into effect on January 1, 2012. The values shown in parentheses reflect the limits that become effective in 2012.
Santa Barbara County APCD

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
		after the date of amended rule adoption)	
Motor vehicle	(250)		
Motor vehicle weatherstrip	(750)		
Multipurpose construction (except cove base installation)	200 (70)	200 (70, effective 12 months after the date of amended rule adoption)	70
Nonmembrane roof installation/repair	300	300	300
Other flooring			150
Other plastic cement welding	450 (250)	510 (250, effective 12 months after the date of amended rule adoption)	500
Outdoor floor covering installation (outdoor carpet)	(150)	250	150
Nonmembrane roof installation/repair	(300)	300	300
Panel	(50)		50
Perimeter bonded sheet vinyl flooring installation	660	660	
Plastic cement welding	(400)		
PVC welding	510	510 (500, effective 12 months after the date of amended rule adoption)	
Rubber flooring	(60)		60
Rubber vulcanization	850		
Sheet-applied rubber installation		850	850
Single-ply roof membrane installation/repair	(250)	250	250
Staple and nail manufacturing	640		
Structural glazing	100	100	100
Structural wood member	(140)		140
Styrene-acrylonitrile welding	(100)		100
Subfloor	(50)		50
Thin metal laminating	(780)	780	
Tire retread	100	100	100
Top and Trim Adhesive	(540)		540
Traffic marking tape	(150)	150	150
VCT and asphalt tile	(50)		50
Waterproof resorcinol glue	170	170	
Wood flooring	(100)		100

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
Sealants			
Architectural	(250)	250	250
Marine deck	(760)	760	760
Nonmembrane roof installation/repair	(300)	300	300
Roadway	(250)	250	250
Single-ply roof membrane	(450)	450	450
Other	(420)	420	420
Adhesive Primers	250		
Automotive glass	(700)	700	700
Plastic cement welding		650	650
Rubber vulcanization	850		
Single-ply roof membrane		250	
Traffic marking tape	(150)	150	
Other		250	250
Other plastic welding			500
Sealant Primers			
Architectural – non porous	(250)	250	250
Architectural – porous	(775)	775	775
Marine deck	(760)	760	460
Modified bituminous	(500)		
Other	(750)	750	760

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
NONSPECIFIC APPLICATIONS OF ADHESIVES/SEALANT PRODUCTS ONTO SUBSTRATES			
Flexible vinyl		250	250
Fiberglass	(80)	200 (80, effective 12 months after the date of amended rule adoption)	80
Metal to metal	30	30	30
Plastic foam	120 (50)		50
Porous material	120 (50)	120 (50, effective 12 months after the date of amended rule adoption)	
Porous material (except wood and plastic foam)			50
Pre-formed rubber products	250		
Reinforced plastic composite	250 (200)		
Rubber		250	
Wood	30		30
Other substrates	250	250	
Thinning or Diluting Prohibition			
Spray Application Equipment Transfer Requirements	Electrostatic, electrodeposition, flow coat, roll coat, dip coat, HVLP, hand application, detailing or touch-up guns, or other approved method that can demonstrate a transfer efficiency equivalent to or greater than the HVLP efficiency. Specific provisions allow use of air-atomized spray for certain adhesives.	Electrostatic, electrodeposition, flow coat, roll coat, dip coat, HVLP, hand application, detailing or touch-up guns, or other approved method that can demonstrate at least 65% transfer efficiency. Specific provisions allow use of air-atomized spray for certain adhesives.	
Solvent Use, Surface Preparation, and Clean Up	Product Cleaning During Manufacturing Process and Surface Preparation : 1. General: 25 g/l of ROC 2. Surface preparation before rubber vulcanization process: 850 g/l Repair and Maintenance Cleaning: 25 g/l of ROC	Effective [one year from the date of amended rule adoption], except as provided in Section I (add-on control equipment), no person shall use any solvent containing more than 25 g/l ROC for the removal of uncured adhesive products or uncured sealant products from surfaces.	Surface Preparation: -Single Ply Roof Membrane Installation: ROC Composite Partial Pressure ≤ 45 mm of Hg Partial Pressure at 20°C. -Inkjet Printer Head Assembly: ROC Content ≤ 200 g/l of material. -All Others: ROC Content ≤ 70

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
			g/l of material. Cleanup (other than application equipment cleaning): ROC Composite Partial Pressure ≤ 45 mm of Hg Partial Pressure at 20°C.
Evaporative Loss Minimization	An operator shall store or dispose of adhesive products, sealant products, catalysts, thinners, fresh or spent solvents, and waste solvent materials such as cloth, paper, etc., 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. The containers used for disposal of adhesive materials, solvents, or any unused VOC containing materials shall be self-closing. Minimize VOC-containing materials spills and clean-up spills immediately.	Closed containers for storage and disposal of ROC-containing materials (including cloth, paper, sand, etc.). Containers for ROC-contain materials must be closed when not in use. Minimize ROC-containing material spills and clean-up spills immediately. Dispose of wastes that contain ROCs by 1) a reclamation service, 2) a facility that treats, stores, or disposes of such wastes, or 3) recycling. Containers used to store ROC-containing materials shall be marked or clearly labeled indicating the name of the material they contain.	All ROC-containing materials shall be stored in nonabsorbent, nonleaking containers, which shall be closed except when adding or removing materials.
Solvent Use, Cleaning of Application Equipment	25 g/l of VOC. If cleaning application equipment used to apply rubber vulcanization primers or adhesives without add-on controls, a solvent with a VOC content > 25 g/l and ≤ 850 g/l may be used if certain cleaning methods and prohibitions are followed. When using a VOC-containing material to clean spray equipment, an enclosed cleaning system shall be used.	Use a solvent with an ROC content of 25 grams per liter. In lieu of meeting the reactive organic compound-content limit, a person may use an enclosed cleaning system, or equipment that is proven to the satisfaction of the Control Officer to be equally effective as an enclosed cleaning system at controlling emissions. (Becomes effective one-year after adoption of the amended rule.)	Use of 1) an enclosed gun washer or "low emission spray gun cleaner" that has been approved in writing by the APCO, which is properly used for spray equipment cleaning, and The ROC composite partial pressure of organic solvent used is less than 45 mm Hg at 20°C, or 2) A solvent ≤ 70 g/l ROC shall be used for cleaning, flushing or soaking of filters, flushing lines, pipes, pumps, and other parts of the application equipment. Parts

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
			containing dried adhesive may be soaked in an organic solvent as long as the ROC composite partial pressure of the solvent is 9.5 mm Hg or less at 20 ^{o}C.
Stripper		The following becomes effective one-year after adoption of the amended rule: No person shall apply any stripper unless it contains less than 300 grams of ROC per liter, as applied, and/or unless its ROC composite partial pressure is 9.5 mm Hg or less at 20 ^{o}C.	No person shall use an adhesive stripper unless its ROC composite partial pressure is 9.5 mm Hg or less at 20 ^{o}C.
Aerosol Adhesives Reactive Organic Compound Limit		Except as provided in Section I (use of add-on control equipment), no person shall use any aerosol adhesive unless the reactive organic compound content complies with the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.	
Control Equipment Capture and Control Efficiency	Overall efficiency of 85% or greater. Use of the ROC emission control system shall not result in emissions in excess of those that would have been emitted had the operator complied with other applicable rule provisions.	Overall efficiency of 85.5% or greater. Use of the ROC emission control system shall not result in emissions in excess of those that would have been emitted had the operator complied with other applicable rule provisions.	Overall efficiency of 85% or greater.
Prohibition of Sales	Except as provided in Section 4.3 (products shipped out of air district or sold to facilities with add-on controls), no person shall supply, sell, or offer for sale any adhesive product or sealant	Except as provided in Section B.10, no person shall supply, sell, or offer for sale any: 1) adhesive product or sealant product that, at the time of sale, is defined under a product category in Table 353-	No person shall supply, sell, or offer for sale any adhesive, sealant or primer which, at the time of sale, is defined under a product category in Subsection B.2, and exceeds the ROC limits

Regulated Component	Adhesive and Sealant Performance Standards[7]		
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	product that does not meet the limits as specified in Section 5.1 (material VOC limits) or 5.4 (add-on control equipment limits).	1 and exceeds the reactive organic compound limit listed in Table 353-1, and 2) aerosol adhesive unless, at the time of sale, the provisions of the Air Resources Board consumer product regulation, found in Title 17 of the California Code of Regulations, section 94507 et seq., are met.	listed in Subsection B.2 after the specified effective dates. This provision only applies to products that are supplied to or sold to persons within the District. The prohibition of sales does not apply when the sale is to a user that has add-on control equipment.
Prohibition Specification	No person shall solicit, require for use, or specify the application of any adhesive products or sealant products, if such use or application results in a violation of the provisions of this Rule. This prohibition shall apply to all written or oral contracts.	No person shall solicit, require for use, or specify the application of any adhesive products, sealant products, or associated solvent if such use or application results in a violation of the provisions of this rule. This prohibition shall apply to all written or oral contracts.	No person shall solicit, require for use, or specify the application of any adhesive, primer or sealant, if such use or application results in a violation of the provisions of this Rule. This prohibition shall apply to all written or oral contracts.
Manufacturer Compliance Statement or Labeling Requirements	Manufacturers of adhesive products, sealant products, and solvents shall label the materials: 1) VOC Content: Each container of adhesive product and sealant product subject to this rule shall display the maximum VOC content of the adhesive product or sealant product as applied. VOC content shall be displayed as grams of VOC per liter of adhesive product or sealant product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products. Each container of solvent subject to this rule shall display the maximum VOC content (in grams of VOC per liter of	The manufacturer of any adhesive products or sealant products subject to this rule shall display the maximum volatile organic compound content as supplied, determined by the appropriate test method, on labels or containers. This designation shall display recommendations regarding thinning, reducing, or mixing with any other volatile organic compound containing material. This information shall include the maximum volatile organic compound content on an as-applied basis when used in accordance with the manufacturer's recommendations.	The manufacturer of any adhesive, sealant, sealant primer or adhesive primer subject to this rule and manufactured after July 19, 1997, shall include a designation of the maximum ROC or VOC content as supplied, including adhesive components, expressed in grams per liter or pounds per gallon excluding water and exempt organic compounds from the appropriate test method, on containers and data sheets. This designation shall include recommendations regarding thinning, reducing, or mixing with any other ROC or VOC-containing materials. This statement shall include the

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
	material) as supplied; 2) each container of adhesive product or sealant product subject to this rule shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing of the adhesive product with any other VOC containing material. Mixing recommendations shall specify a ratio which results in a compliant, as applied, adhesive product, or sealant product; and 3) indicate on the solvent container, or on a separate product data sheet or material safety data sheet, the name of the solvent, manufacturer's name, the VOC content, and density of the solvent, as supplied. The VOC content shall be expressed in units of grams per liter or lb/gallon.		maximum ROC or VOC on an as-applied basis when used in accordance with the manufacturer's recommendations.
Liquid Cleaning Material Compliance Statement or Labeling Requirements	See above.		The manufacturer of liquid cleaning materials subject to this rule shall designate on product containers and data sheets the ROC content and ROC Composite Partial Pressure of cleaning materials as supplied. This designation shall include recommendations regarding mixing with any other ROC containing materials, and express the cleaning material ROC content when used in accordance with the manufacturer's recommendations. All letters and numbers used to designate ROC

Regulated Component	Adhesive and Sealant Performance Standards[7]		
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			or VOC content on product labels shall be visible and legible.
Sell-Through of Adhesives and Sealants	1) An adhesive product or sealant product manufactured prior to the effective date specified for that product in Section 5.1 (VOC limits), may be sold, supplied, or offered for sale for up to 12 months after the specified effective date. 2) An adhesive product or sealant product manufactured prior to the effective date specified for that product in Section 5.1 (VOC limits) may be applied up to 24 months after the specified effective date. 1) and 2) above only apply to those adhesive products or sealant products which are labeled to display the date or date code indicating when the product was manufactured and that complied with the standards in effect at the time the product was manufactured.		See exemptions.
Recordkeeping	An operator subject to the rule's adhesive/sealant product VOC limits shall maintain the following records: 1) records of the VOC content, in grams VOC per liter, of all adhesive materials used and stored at the stationary source; 2) records of the VOC content of all solvents used and stored at the stationary source; and 3) effective on and after January 1, 2012, records of the	-Maintain a current file of all ROC-containing materials that provides all information necessary to evaluate compliance, including: 1) material name and manufacturer ID; 2) application method; 3) material type, manufacturer's specific use instructions (e.g., specific use for which the material is intended), type operation (e.g., coating, stripping, or solvent cleaning),	As required by a District permit condition, maintain a file/records of ROC contents, mix ratios, and monthly usage rates of coatings, adhesives strippers, and solvents and items coated. Also, if complying with the ROC composite partial pressure, maintain a record of the ROC composite partial pressure. Keep daily records of non-compliant material use. Maintain records

Regulated Component	Adhesive and Sealant Performance Standards[7]		
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	VOC content, in grams VOC per liter, of all sealant materials used and stored at a stationary source. -An operator that claims an exemption from the prohibition of sales (i.e., materials shipped out of the air district or sold to customers with add-on controls) shall: 1) Keep a copy of the manufacturer's product data sheet or material safety data sheet of the solvents used for organic solvent cleaning activities; and Name, address, and telephone number of the persons to whom the adhesive products or sealant products are sold. -Solvent cleaning records shall include: 1) manufacturer's product data sheet or material safety data sheet of the solvents used for organic solvent cleaning activities; 2) a current list of solvents that are being used for organic solvent cleaning activities. The list shall include the following information: a) the name of the solvent and its manufacturer's name; b) the VOC content of the solvent expressed in grams per liter or lb/gallon; c) when the solvent is a mixture of different materials that are blended by the operator, the mix ratio of the batch shall be recorded and the VOC content of the batch shall be calculated and recorded in order to determine compliance with the specified	and for coating operations, the product type, type of substrate coated, and type of application (i.e., adhesive and sealant product type from Table 353-1 or Table 353-2); 4) specific mixing volumes of each components for each batch, 5) corresponding ROC content limit and as applied ROC content of materials used; and 6) current manufacturer's specification sheets, material safety data sheets (MSDS), product data sheets, or air quality data sheets, which lists the ROC content. Compliance with this provision may be done by ensuring the manufacturer's specifications are listed on the product container. -Maintain records for each ROC-containing material purchased for use. The records shall include the following: 1) material name and manufacturer ID, and 2) material type (e.g., adhesive product and sealant product type from Tables 353-1 and 353-2, cleanup solvent, stripper, etc.). - Maintain records of the disposal method each time waste solvent, waste solvent residue, or other waste material that contains ROCs is removed for disposal. -Keep monthly records of: 1) the volume of the ROC-containing materials used, 2) ROC content of the materials, and 3) resulting ROC emissions.	when using add-on emission control equipment.

Regulated Component	Adhesive and Sealant Performance Standards[7]		
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	limits of VOC content, as applied; d) the type of cleaning activity for each solvent that is being used in accordance with the applicable cleaning category specified in Table 6 of this rule; and e) the quantity of solvents used for cleaning operations shall be kept on a daily basis.	-When using add-on emission control equipment, maintain daily records of key system operating and maintenance data. - Any records required to be maintained pursuant to the rule shall be kept on site for at least 2 years unless a longer retention period is otherwise required by state or federal regulation(s). Such records shall be readily available for inspection and review by the District.	
Submittal of an Annual Report		Submittal of an annual report is required if a person holds a permit for applying adhesive products or sealant products subject to the rule. The report is to include: 1) monthly records required by §O.4, 2) annual totals, and 3) the name and address of the company or agency and PTO number.	
Applicability	This rule is applicable to any person who supplies, sells, offers for sale, or applies any adhesive product, sealant product, or associated solvent, used within the District.	This rule is applicable to any person who supplies, sells, offers for sale, manufactures, or distributes any adhesive product, sealant product, or associated solvent for use within the District, as well as any person who uses, applies, or solicits the use or application of any adhesive product, sealant product, or associated solvent within the District.	The provisions of this rule apply to any person who supplies, sells, offers for sale, manufactures, solicits the application of, or uses adhesives, sealants, sealant primers or adhesive primers in Ventura County.
Exemptions	-A stationary source that uses 20 gallons or less of adhesives products in a calendar year shall not be subject to coating and	-The rule does not apply to: 1) adhesives and associated solvents used in tire repair operations, provided a label on the adhesive	-With the exception of Section K (Prohibition of Sales), the rule does not apply to any stationary source that has total reactive

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
	solvent limits and work practices. -The following are exempt from the rule: 1) the use of adhesive products or sealant products containing less than 20 grams VOC per liter; 2) The use of adhesives in tire repair provided the label states "for tire repair use only;" 3) The use of aerosol spray adhesive products; 4) household adhesive products subject to Article 2, Consumer Products, Sections 94507 - 94517, Title 17, California Code of Regulations; 5) contact adhesives that are subject to the Consumer Product Safety Commission regulations in 16 CFR, Part 1302, that have a flash point greater than 20°F as determined pursuant to those regulations, and that are sold in packages that contain 128 fluid ounces or less; and 6) stripping of cured adhesives, except the stripping of such materials from spray application equipment. -The provisions of this rule, except for the work practices required pursuant to Sections 5.3 and 5.6 do not apply to: 1) The testing and evaluation of adhesives in research laboratories, analytical laboratories, or quality assurance laboratories.- laboratory operators shall maintain monthly records documenting the type and quantity of adhesive products used and provide the records to	used states "For Tire Repair Only;" 2) adhesives and associated solvents used in the assembly and manufacturing of undersea-based weapon systems; 3) solvent welding operations and associated cleaning solvents used in the manufacturing of medical devices, such as, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheotomy tubes, blood oxygenators, and cardiatory reservoirs; 4) adhesive product and sealant product coating operations and associated solvent use subject to Rules 337 and 354; 5) adhesive products and sealant products that contain less than 20 grams of reactive organic compound per liter (0.17 pounds of reactive organic compound per gallon) of adhesive or sealant, less water and less exempt compounds, as applied; 6) cyanoacrylate adhesives; 7) adhesive products and sealant products, which are sold or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; and 8) adhesive products (including aerosol adhesives) and sealant products subject to the Air Resources Board consumer products. regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.	organic compound emissions less than 200 pounds per calendar year from adhesive products sealant products, and associated solvents. -ROC limits do not apply to: 1) assembly and manufacturing of undersea-based weapon systems; 2) testing and evaluation of adhesive or sealant products in any research and development or analytical laboratories; 3) welding operations and associated cleaning solvents used in the manufacturing of medical devices; 4) tire repair operations, provided a label on the adhesive used states "For Tire Repair Only;" 5) Manufacturing operations of the following products: diving suits, rubber fuel bladders, inflatable boats, life preservers or other products designed for immersion in liquids. The adhesive products used by these operations must be labeled "For the bonding of immersible products only;" 6) inkjet printer head assembly operations where the ROC content of the adhesive used for laminating is less than 100 grams per liter of material; 7) thin film laminating operations of magnetic or electronic components excluding inkjet printer head assembly operations; and 8) glass bonding and priming processes in automotive

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
	the District upon request; 2) the use of adhesives that are sold or supplied with 8 fluid oz. or less of adhesive in non-reusable containers; 3) the use of aerosol adhesive or aerosol adhesive primer products; 4) adhesive products used in assembly, repair, or manufacture of undersea-based weapon systems; 5) adhesive products used in medical equipment manufacturing operations; 6) cyanoacrylate adhesive application processes; and 7) processes using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities. -A stationary source that uses 20 gallons or less of sealant products in a calendar year shall not be subject to coating and solvent limits and work practices. -The provisions of this rule, except for the work practices required pursuant to Sections 5.3 and 5.6 do not apply to the testing and evaluation of sealant products in research laboratories, analytical laboratories, or quality assurance laboratories. Laboratory operators shall maintain monthly records documenting the type and quantity of sealant products used and provide the records to the	-The rule's coating limits and solvent cleanup/surface preparation limits do not apply to materials used in laboratory tests and analyses, including quality assurance and quality control applications, bench scale projects, or short-term (less than 2 years) research and development projects. Records are to be kept when claiming this exemption. -With the exception of Section K (Prohibition of Sales), the rule does not apply to any stationary source that has total reactive organic compound emissions less than 200 pounds per calendar year from adhesive products sealant products, and associated solvents. -The sales prohibitions have several exemptions (e.g., products being shipped outside of the County for use outside of the County, companies that have installed add-on controls). -Solvents are exempt from the rule (except for recordkeeping) that have two percent or less content of ROC and TAC. -The stripper/solvent requirements do not apply to solvents and strippers used on: 1) cotton swabs to remove cottonseed oil before cleaning of high-precision optics; 2) paper gaskets; 3) clutch assemblies where rubber is bonded to metal	convertible top manufacturing operations. -The following specific adhesives are exempt from the rule: 1) any adhesive, primer, or sealant that contains less than 20 grams of ROC per liter of material; 2) any aerosol adhesive; and 3) any cyanoacrylate or methacrylate-based adhesive. -The provisions of Subsection B.3 (substrates or nonspecific operations) do not apply to any person who uses less than 10 gallons per rolling period (consisting of 12 consecutive calendar months) per stationary source of an adhesive, a sealant, or primer in a separate formulation provided the total volume of noncomplying adhesives, sealants, or primers at a stationary source does not exceed 55 gallons per rolling period (consisting of 12 consecutive calendar months). If a specific adhesive, sealant, sealant primer or adhesive primer can be defined under one of the product categories in Subsection B.2 (specific applications), then this exemption does not apply. -Sell Through of Adhesives: A person may supply, sell, offer for sale, or apply a noncomplying adhesive for up to 6 months after the applicable effective date provided that: 1) product complies with the ROC limit in

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
	District upon request. -Except for the records required in Section 6.1.3, the prohibition of sale in Section 5.7 (prohibition of sale) shall not apply to: 1) adhesive products and sealant products shipped, supplied, or sold exclusively to persons outside the District for use outside the District; and 2) adhesive products and sealant products sold to any person who complies with the requirements of Section 5.4 (add-on control equipment). -The solvent ROC content limits do not apply to 1) cleaning of solar cells, laser hardware, scientific instruments, or high-precision optics; 2) cleaning in laboratory tests and analyses, or bench scale or research and development projects; 3) cleaning of clutch assemblies where rubber is bonded to metal by means of an adhesive; and 4) cleaning of paper-based gaskets.	by means of an adhesive; 4) semiconductors and microelectromechanical devices (thin film deposition, vacuum deposition, dry etching, metal lift-off, and associated maintenance activities), 5) electronic components, 6) small encasements for electronic components, 7) parts, subassemblies, or assemblies exposed to strong oxidizers or reducers, 8) transparencies, polycarbonate, or glass substrates, 9) solar cells, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, and military fluid systems, and 10) cleaning/stripping of personal protective equipment.	effect at the time of manufacture; 2) product was manufactured prior to the effective date; and 3) date of manufacture or a code indicating that date is clearly displayed on the product. If a manufacturer uses a date code to justify this sell-through exemption, the manufacture shall file an explanation of each code with the Air Pollution Control Officer.

Regulated Component	Adhesive and Sealant Performance Standards[7]		
	San Joaquin Valley Unified APCD Rule 4653 (09/16/2010)[8]	Santa Barbara County APCD Rule 353 (Proposed)	Ventura County APCD Rule 74.20 (01/11/2005)[7]
Comments			Section B.10 prohibits the use of primers, sealants, or adhesives that contain 1,1,1-trichloroethane (CAS 71-55-6) or methylene chloride (CAS 75-09-2). Exceptions to the prohibition on methylene chloride are allowed for plastic welding. Section F indicates: Violations Failure to comply with any provision of this rule, including the requirement to maintain records or supply VOC or ROC information, or supply ROC composite partial pressure information, shall constitute a violation of this rule. Noncompliance determined by any test method specified or referenced in this Rule is a violation of this Rule. Where more than one approved test method may be applicable, sources shall not be required to demonstrate compliance using more than one approved test method.

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Appendix K
Santa Barbara County
Impacts from the Revised Rules

Industry Impacts

The impacts from the revised rules will depend on the type of parts, products, and equipment being cleaned and the cleaning processes employed. In general, the amended Rules 330, 349, and 353 will require the use of solvents with an ROC content of 25 grams per liter or less. For solvent cleaning operations requiring higher ROC contents to achieve greater degrees of cleanliness, an exemption has been added to Rules 330, 337, 349, and 353. Generally, these exemptions are consistent with the industry standards and exemptions found in other air district rules.

Proposed amended Rule 337's solvent cleaning requirements specify a source is to either meet a 200 g/l ROC content limit or comply with an ROC composite partial pressure of 45 mm Hg at 20 ℃. Further, when employing a solvent with an ROC content greater than 25 g/l, certain cleaning devices or methods are to be used (e.g., wipe cleaning, spray bottles, non-atomized solvent flow). The District anticipates that these provisions are easily met and there should be no impacts from them.

The Rule 337 stripper requirement ROC-content limit is being lowered slightly. However, strippers currently in use (e.g., methylene chloride) meet the lower limit. Also, the lower polyester resin monomer content limits proposed in Rule 349 should not cause impacts as these materials are generally in use and available in California.

Rules 337 and 353 will allow the use of higher ROC solvents when cleaning spray application equipment, provided an enclosed cleaning system is used. Some sources may need to purchase enclosed cleaning systems or switch to a low or no ROC cleaning material to comply. Hence, there may be purchasing costs ($500 to $2,800 per system) associated with new enclosed cleaning systems. The enclosed gun washer purchase costs will be offset by reduced labor costs and reduced solvent costs (purchase and disposal). If a source is currently using IPA or MEK solvents, switching to acetone would result in neutral or a cost savings for purchased solvent, respectively. And, by switching to acetone, the source would not need to modify the spray application equipment cleaning methods. (Acetone is a non-ROC, non-TAC cleaning material and is not subject to the District rules.)

The project includes a slight revision to Rule 321, Solvent Cleaning Machines and Solvent Cleaning. The Rule 321.B.6 exemption change will clarify that solvent cleaning machines used in conjunction with one of the types of operations covered by the listed rules is not exempt from Rule 321. There are no impacts anticipated from the rule revision beyond those indicated in the September 20, 2010 Staff Report for Rule 321.

The following provides impact information from the various rule revisions.

RULE 102, DEFINITIONS

With the addition of four exempt compounds to the definition of **reactive organic compounds**, operators will have additional options for using compounds that will not be subject to the District's new source review, prevention of significant deterioration, or prohibitory rule requirements.

RULE 202, EXEMPTIONS TO RULE 201

The replacement of the EPA test method with the South Coast AQMD method addresses concerns about the sensitivity of the EPA tests when analyzing low-ROC solvents. The District is unaware of any potential impacts due to changing the test method.

Sources complying with the amended rule provisions may need to:

a. Replace the solvent used in **solvent cleaning** with a lower ROC- and/or lower TAC-content solvent;

b. Follow new or improved solvent handling techniques per the **general operating requirements** sections of the rules (Sections 330.F, 337.F, 349.D.3, and 353.J);

c. Modify their existing **solvent cleaning** techniques to be consistent with the new requirements (i.e., employ sanctioned devices and methods);

d. Change to a coating and polyester resin material that meet the lower ROC-content limits in Rules 337, 349, and 353; and/or

e. Implement enhanced recordkeeping procedures.

The District estimates that the increased costs for complying with the amended recordkeeping provisions will be about $1,000 per facility per year on the average. Also, there will likely be a slight increase in the administrative costs associated with preparing annual reports due to the changes in recordkeeping. This increase only affects permitted facilities and the District estimates it will be on the order of $200 to $300 per facility.

District Impacts

There should be minimal impacts to the District associated with the revised rules. Staff anticipates that the majority of the impacts from this rulemaking action will involve outreach and education efforts and enforcement activities. These costs will be integrated into the District general compliance verification program.

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