

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

**RULE 31 - SURFACE PREPARATION AND COATING OF PLASTIC PARTS
AND PRODUCTS**

REGULATION 8

ORGANIC COMPOUNDS

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**REGULATION 8
ORGANIC COMPOUNDS
RULE 31
SURFACE PREPARATION AND COATING OF PLASTIC PARTS AND
PRODUCTS**

(Adopted September 7, 1983)

8-31-100 GENERAL

8-31-101 Description: The purpose of this Rule is to limit the emission of volatile organic compounds from the surface preparation and coating of plastic parts and products, including polyester resin (fiberglass) products.

(Amended 6/7/89; 10/16/02)

8-31-110 Exemption, Adhesives: The requirements of this Rule shall not apply to the application of adhesives. Application of adhesives is subject to Regulation 8, Rule 51.

(Amended 6/7/89; 2/3/93)

8-31-111 Exemption, Low Usage Coatings: The requirements of Sections 8-31-302, 306 and 309 shall not apply to any coating used in volumes less than 75.7 liters (20 gallons) in any one year, and provided the requirements in Section 8-31-403 are satisfied. A person shall be limited to 208.1 liters (55 gallons) total coating per year under this exemption.

(Amended 1/7/87; 4/1/87; 6/7/89; 6/1/94)

8-31-112 Deleted April 1, 1987

8-31-113 Exemption, Aerosol Cans: The provisions of this Rule shall not apply to coating operations employing hand-held aerosol cans. Such coating is subject to the provisions of Regulation 8, Rule 49 or to the California Air Resources Board aerosol coating product regulation found in Title 17 of the California Code of Regulations, beginning at Section 94520.

(Amended 1/7/87; 6/7/89; 6/20/90; 10/16/02)

8-31-114 Exemption, Touch-up: The provisions of this Rule shall not apply to touch-up operations.

(Amended 1/7/87; 6/7/89)

8-31-115 Deleted April 1, 1987

8-31-116 Deleted April 1, 1987

8-31-117 Deleted April 1, 1987

8-31-118 Exemption, Automobile Assembly Coatings: The requirements of this Rule shall not apply to coatings applied to parts in an automobile assembly plant, provided the following conditions are satisfied:

118.1 The parts are coated in a coating line subject to the requirements of Regulation 8, Rule 13.

118.2 The coating of these parts complies with the requirements which apply to other parts or products coated in the same coating line.

(Amended June 7, 1989)

8-31-119 Exemption, Aerospace Assembly Coatings: The requirements of this Rule shall not apply to coatings applied to plastic aerospace components subject to Regulation 8, Rule 29.

(Adopted June 7, 1989)

8-31-120 Exemption, Test Panels: The requirements of this Rule shall not apply to test panels used to evaluate coating performance. Such test panels are subject to Regulation 8, Rule 4.

(Adopted June 7, 1989)

8-31-121 Exemption, Stencil Coatings: The requirements of this Rule shall not apply to coatings that are applied by template in order to add designs, letters and/or numbers to the products.

(Adopted June 7, 1989)

8-31-122 Exemption, Spray Application Equipment: The requirements of Section 8-31-310 shall not apply to the following operations:

- 122.1 The application of high solids, solvent-borne coatings with a solids content of at least 60% by volume to pre-textured or hair-cell surfaces of plastic parts and products. This exemption only applies to coatings subject to the limits of Section 8-31-302.
- 122.2 The application of coatings to the inner surface area of pipes which require a spray gun nozzle extension.
- 122.3 The application of a textured finish coat.
- 122.4 The application of conductive coatings.

(Adopted February 3, 1993)

- 8-31-123 Exemption, Small User:** The spray application equipment limitations of Section 8-21-310 shall not apply to any facility where the total amount of all coatings used to coat plastic parts and products does not exceed 50 gallons/year.

(Adopted February 3, 1993)

- 8-31-124 Limited Exemption, Coating Records:** The requirements of subsection 8-31-501.2 shall not apply to individual source operations using less than 75.7 liters (20 gal) of coating in any calendar year, unless otherwise specified in permit conditions pursuant to Regulation 2-1-403. A person shall maintain monthly records of coating usage under this exemption.

(Adopted February 3, 1993)

- 8-31-125 Exemption, Printed Circuit Boards:** The requirements of this Rule shall not apply to coatings applied to assembled printed circuit boards. This coating operation is subject to Regulation 8, Rule 4.

(Adopted February 3, 1993)

- 8-31-126 Exemption, Translucent Coatings:** The requirements of Section 8-31-302 shall not apply to translucent coatings applied to translucent plastic provided records are maintained as per Section 8-29-501. The application of translucent coating is subject to the requirements of Regulation 8, Rule 4.

(Adopted February 3, 1993)

- 8-31-127 Limited Exemption, Specific Surface Preparation and Cleaning Operations:** The surface preparation standards in Section 8-31-321 shall not apply to, (i) the surface preparation of medical devices or precision optics, (ii) surfaces prepared for adhesive bonding of dissimilar substrates, (iii) stripping of cured inks, coatings and adhesives or cleaning of resin, coating, ink and adhesive mixing, molding and application equipment, or (iv) surface preparation associated with research and development operations; performance testing to determine coating, adhesive or ink performance; or testing for quality control or quality assurance purposes.

(Adopted October 16, 2002)

- 8-31-128 Limited Exemption, Military Components:** The requirements of Section 8-31-321 shall not apply to the surface preparation of any military component for which a contract exists that specifies the use of an organic solvent that does not comply with the standards in Section 8-19-321, provided that contract has been entered into prior to December 1, 2005.

(Adopted October 16, 2002)

8-31-200 DEFINITIONS

- 8-31-201 Camouflage Coating:** A coating used on military equipment to conceal such equipment from detection.

- 8-31-202 Conductive Coating:** A coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference or static discharge.

- 8-31-203 Flexible Part or Product:** A part or product designed to withstand significant deformation without apparent damage, such as flexible automobile bumpers.

- 8-31-204 Metallic Topcoat:** A topcoat containing more than 5 g/l (0.42 lb/gal) of metal particles, as identified on a technical or material safety data sheet, where such metal particles are visible in the dried film.

(Amended 1/7/87; 6/1/94)

- 8-31-205 Volatile Organic Compound:** Any organic compound (excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and

ammonium carbonate) which would be emitted during use, application, curing or drying of a solvent or surface coating.

205.1 For purposes of calculating VOC content of a coating, any water or the following non-precursor organic compounds:

acetone

methyl acetate

parachlorobenzotrifluoride (PCBTF)

cyclic, branched or linear, completely methylated siloxanes (VMS)

shall not be considered to be part of the coating.

206.2 For the purposes of calculating the VOC content of a surface preparation or cleaning solvent, any water or the non-precursor organic compounds listed in subsection 8-31-206.1, above, shall be considered part of the volume of solvent but shall not be considered part of the VOC content of the solvent.

(Amended 1/7/87; 6/7/89, 12/20/95; 10/16/02)

8-31-206 Extreme Performance Coating: Any coating which during intended use is exposed to one or more of the following conditions:

206.1 Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleaners or abrasive scouring agents.

206.2 Repeated exposure to temperatures in excess of 121°C (250°F).

206.3 Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solution.

(Amended 1/7/87; 6/1/94)

8-31-207 Deleted June 7, 1989

8-31-208 Touch-up: That portion of the surface preparation or coating operation which is incidental to the main coating process but necessary to cover minor imperfections or mechanical damage incurred prior to intended use.

(Amended 1/7/87; 10/16/02)

8-31-209 Transfer Efficiency: The ratio of the amount of coating solids adhering to the object being coated to the total amount of coating solids used in the application process, expressed as a percentage.

8-31-210 Deleted January 7, 1987

8-31-211 High Gloss Coating: Any coating which achieves at least 85% reflectance on a 60o meter when tested by ASTM Method D-523-1989.

(Adopted June 7, 1989)

8-31-212 Adhesive: Any coating applied for the purpose of bonding surfaces together.

(Adopted June 7, 1989)

8-31-213 Electrostatic Spray: Equipment used to apply coating by charging atomized particles that are deposited by electrostatic attraction.

(Adopted February 3, 1993)

8-31-214 High Volume, Low Pressure (HVLP) Spray: Equipment used to apply coating by means of a gun which is designed to be operated and which is operated between 0.1 and 10.0 psig air atomizing pressure measured dynamically at the center of the air cap and at the air horns.

(Adopted 2/3/93; 10/16/02)

8-31-215 Pre-Textured or Hair-Cell Surface: The rough or uneven surface impressed upon a manufactured plastic part during molding processes that exists before applying a semi-transparent or colored surface coating.

(Adopted February 3, 1993)

8-31-216 Detailing Gun: Small air spray equipment, including air brushes, that operate at no greater than 5 cfm air flow and no greater than 50 psig air pressure.

(Adopted February 3, 1993)

8-31-217 Approved Emission Control System: A system for reducing emissions to the atmosphere, consisting of an abatement device and a collection system, which achieves the abatement efficiency specified in the applicable standards at all times during the operation and meets the requirements of Regulation 2, Rule 1.

(Adopted February 3, 1993)

8-31-218 Translucent Coating: A clear or colored coating which is formulated to allow light transmission.

(Adopted February 3, 1993)

- 8-31-219 Textured Finish Coat:** Any non-smooth, patterned surface that is intentionally produced and applied as a final coat by spraying drops of coating over a previously applied base coating.
(Adopted February 3, 1993)
- 8-31-220 Optical Coating:** Any coating applied to ophthalmic lenses to provide a scratch resistant, protective film.
(Adopted February 3, 1993)
- 8-31-221 Mold Release Coating:** A temporary protective coating with a solids content of less than 120 grams solids per liter (1 pound solids per gallon) that reduces or prevents adhesion between the mold surface and the surface being molded.
(Adopted February 3, 1993)
- 8-31-222 Key System Operating Parameter:** An emission control system operating parameter, such as temperature, flow rate or pressure, that ensures operation of the abatement equipment within manufacturer specifications and compliance with the standards in Sections 8-31-302, 306, 309, and 310.
(Adopted June 1, 1994)
- 8-31-223 Medical Device:** An instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory that is (i) intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of diseases, or (ii) is intended to affect the structure or any function of the body, or (iii) is defined in the National Formulary or the United States Pharmacopoeia or any supplement to it.
(Adopted October 16, 2002)
- 8-31-224 Precision Optics:** The optical elements used in electro-optical devices that are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes of light energy levels.
(Adopted October 16, 2002)
- 8-31-225 Surface Preparation:** The cleaning of plastic parts and products prior to coating, further treatment, sale, or intended use. Surface preparation of plastic parts subject to and in compliance with Regulation 8, Rule 16: Solvent Cleaning Operations, is not subject to the surface preparation standards in this Rule.
(Adopted October 16, 2002)
- 8-31-300 STANDARDS**
- 8-31-301 Deleted June 7, 1989**
- 8-31-302 Limit:** A person shall not apply to any plastic part or product any coating with a VOC content in excess of 340 grams of VOC per liter of coating applied (2.8 lb/gal), excluding water, unless emissions to the atmosphere are controlled to an equivalent level by use of an air pollution abatement device with an abatement device efficiency of at least 85% that meets the requirements of Regulation 2, Rule 1.
(Amended 1/7/87; 4/1/87; 6/7/89; 2/3/93)
- 8-31-303 Deleted February 3, 1993**
- 8-31-304 Deleted June 7, 1989**
- 8-31-305 Deleted June 7, 1989**
- 8-31-306 Flexible Coatings:** A person shall not apply to any flexible part or product any coating which has a VOC content in excess of the following limits expressed as grams of VOC per liter (lb VOC per gal) of coating applied, excluding water, unless emissions to the atmosphere are controlled to an equivalent level by use of an air pollution abatement device with an abatement device efficiency of at least 85% that meets the requirements of Regulation 2, Rule 1.
- | | | |
|-------|--|------------------------------|
| 306.1 | Flexible primer | 490 grams/liter (4.1 lb/gal) |
| 306.2 | Color topcoat | 450 grams/liter (3.8 lb/gal) |
| 306.3 | Base coat/clear coat (combined system) | 540 grams/liter (4.5 lb/gal) |
- (Amended 1/7/87; 4/1/87; 6/7/89; 2/3/93)*
- 8-31-307 Prohibition of Specification:** No person shall require for use or specify the application of a coating or solvent 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 or solvent is to be applied to any plastic part or product at any physical location within the District.

(Adopted 1/7/87, Amended 6/7/89; 10/16/02)

- 8-31-308 Compliance Statement Requirement:** The manufacturer of coatings and solvents subject to this Rule shall provide on the coating container or as an accompanying data sheet a designation of VOC (as defined in Section 8-31-205), expressed in grams per liter or pounds per gallon of coating. Effective September 1, 1993, the designation shall include the VOC content of the coating as supplied and at the maximum recommended thinning ratio to maintain compliance with the VOC limits of this Rule.

(Adopted 1/7/87; Amended 7/7/89; 2/3/93; 10/16/02)

- 8-31-309 Specialty Coating Limitations:** A person shall not apply to any plastic part or product any specialty coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter (lb VOC per gal) of coating applied, excluding water, unless emissions to the atmosphere are controlled to an equivalent level by use of an air pollution abatement device with an abatement device efficiency of at least 85% that meets the requirements of Regulation 2, Rule 1.

Effective January 1, 1994

309.1	Camouflage	420 (3.5)	
309.2	Conductive	700 (5.8)	325 (2.7)
309.3	Metallic Topcoat	420 (3.5)	
309.4	Extreme Performance	750 (6.2)	
309.5	High Gloss	420 (3.5)	
309.6	Optical	800 (6.7)	

Any person seeking to use a coating subject to subsection 8-31-309.4 shall also comply with the following provisions:

- a. Usage is limited to 3785 liters (1000 gal) in any calendar year.
- b. Requirements of Section 8-31-401 must be satisfied.

(Adopted 4/1/87; Amended 6/7/89; 2/3/93)

- 8-31-310 Spray Application Equipment Limitations:** Effective July 1, 1994, a person who uses spray application equipment to apply coatings to plastic parts and products within the District shall use one or more of the following application methods, unless emissions are controlled by an approved emission control system with an overall abatement efficiency of at least 85%:

- 310.1 High Volume, Low Pressure (HVLP) spray, operated in accordance with the manufacturer's recommendations, or
- 310.2 Electrostatic Spray, operated in accordance with the manufacturer's recommendations, or
- 310.3 Detailing Gun, or
- 310.4 Any other coating spray application, which has been demonstrated to the satisfaction of the APCO to achieve an equivalent transfer efficiency compared to the spray application methods listed in subsections 310.1 through 310.3. Prior written approval from the APCO shall be obtained for each alternative method used.

(Adopted February 3, 1993)

- 8-31-320 Solvent Evaporative Loss Minimization:** Unless emissions to the atmosphere are controlled by an approved emission control system with an overall abatement efficiency of at least 85%, any person using organic solvent for surface preparation and cleanup or mixing, using or disposing of coating, catalyst or thinner containing organic solvent:

- 320.1 Shall use closed containers for the storage or disposal of cloth or paper used for solvent surface preparation and cleanup.
- 320.2 Shall not use organic solvent for the cleanup of spray equipment including paint lines with a VOC content in excess of 50 g/l (0.42 lbs/gal) unless either (i) the VOC can be pressurized through spray equipment with the atomizing air off or dispensed from a small non-atomizing container, and collected and stored in a closed container until recycled or properly disposed of offsite, or (ii) a spray gun washer subject to and in compliance with the requirements of Regulation 8, Rule 16 is used.
- 320.3 Shall close containers of coating, catalyst or solvent when not in use.

(Adopted 6/7/89; Amended 2/3/93; 10/16/02)

- 8-31-321 Surface Preparation Standards:** Effective June 1, 2003, no person shall use a surface preparation solvent with a VOC content that exceeds 50 g/l (0.42 lbs/gal) for surface preparation of any plastic part or product unless emissions to the atmosphere are controlled to an equivalent level by an approved emission control system with an abatement device efficiency of at least 85 percent that meets the requirements of Regulation 2, Rule 1.

(Adopted October 16, 2002)

8-31-400 ADMINISTRATIVE REQUIREMENTS

- 8-31-401 Extreme Performance Coating Petition:** A person seeking to come within the provisions of subsection 8-31-309.4, shall comply with the following requirements:

- 401.1 A petition shall be submitted to the APCO stating the performance requirements, volume of coating, and VOC level which is attainable.
- 401.2 If the APCO grants written approval, such petition will be repeated on an annual basis.
- 401.3 If the APCO grants written approval, such approval shall contain volume and VOC limit conditions.
- 401.4 Records shall be maintained as in Section 8-31-501.

(Amended 1/7/87; 4/1/87; 6/7/89; 2/3/93)

8-31-402 Deleted June 7, 1989

- 8-31-403 Low Usage Coating Petition:** A person seeking to satisfy the conditions of Section 8-31-111 shall comply with the following requirements:

- 403.1 The user or specifier shall petition the APCO in writing that substitute complying coatings are not available.
- 403.2 If the APCO grants written approval, such petition will be repeated on an annual basis.
- 403.3 If the APCO grants written approval, such approval shall contain volume and VOC limit conditions.
- 403.4 Records shall be maintained as in Section 501.

(Adopted June 7, 1989)

8-31-500 MONITORING AND RECORDS

- 8-31-501 Records:** Any person using coatings or solvents subject to this Rule shall:

- 501.1 Maintain current data necessary to evaluate compliance, including the following information as applicable:
 - a. coating catalyst and reducer used
 - b. VOC content of coating as applied
 - c. VOC content of surface preparation and cleanup solvents, as applied.
- 501.2 Record coating usage on a weekly basis, including the following information as applicable:
 - a. coating and mix ratio of components in the coating used as applied
 - b. quantity of each coating applied
 - c. identification of specialty coating limit category
 - d. oven temperature
- 501.3 Record coating usage and key system operating parameters on a daily basis when air pollution abatement equipment is used to comply with the requirements of Sections 8-31-302, 306, 309, 310, 320 and/or 321.
- 501.4 Record cleanup solvent usage on a monthly basis showing the type and amount used for cleanup and surface preparation, unless more frequently specified in permit conditions imposed per Regulation 2-1-403.
- 501.5 Records shall be retained and available for inspection by the APCO for the previous 24-month period.

(Adopted 1/7/87; Amended 4/1/87; 6/7/89; 2/3/93; 6/1/94; 10/02/16)

8-31-502 Deleted February 3, 1993

8-31-600 MANUAL OF PROCEDURES

- 8-31-601 Analysis of Coating Samples:** Samples of volatile organic compounds as specified in Sections 8-31-302, 306 and 309 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 21 or 22.
(Adopted 1/7/87; Amended 4/1/87; 2/3/93)
- 8-31-602 Determination of Emissions:** Emissions of volatile organic compounds as specified in Sections 8-31-302, 306, 309, 310, 320 and/or 321 shall be measured as prescribed by any of the following methods: 1) BAAQMD Manual of Procedures, Volume IV, ST-7, 2) EPA Method 25 or 25A. When either EPA Method 25 or 25A is used, control device equivalency shall be determined as prescribed in 55 FR 26865 (June 29, 1990). A source shall be considered to be in violation if the VOC emissions measured by any of the referenced test methods exceed the standards of this rule.
(Adopted 1/7/87; Amended 4/1/87; 2/3/93; 6/1/94; 10/16/02)
- 8-31-603 Analysis of Mold Release Coating Samples:** Samples of mold release coatings containing volatile organic compounds as specified in Section 8-31-302 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 31.
(Adopted February 3, 1993)
- 8-31-604 Analysis of Solvent Samples:** Samples of volatile organic compounds as specified in Section 8-31-320 or 321 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 31.
(Adopted October 16, 2002)
- 8-31-605 Analysis of Exempt Compounds:** Samples of PCBTF, VMS, and methyl acetate shall be analyzed by the Manual of Procedures, Volume III, Method 41, 43 and by ASTM Method D-6133-00, respectively.
(Adopted October 16, 2002)