

**REGULATION 8
ORGANIC COMPOUNDS
RULE 29
AEROSPACE ASSEMBLY AND COMPONENT COATING OPERATIONS**

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REGULATION 8
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RULE 29
AEROSPACE ASSEMBLY AND COMPONENT COATING OPERATIONS

(Adopted August 4, 1982)

8-29-100 GENERAL

- 8-29-101 Description:** The purpose of this Rule is to limit the emission of volatile organic compounds from the surface preparation and coating of aerospace components and cleanup of aerospace coating equipment. (Amended November 1, 1989)
- 8-29-110 Exemption, Electronic Industries:** The requirements of 8-29-305 and 306 shall not apply to fabrication of electronic components, including but not limited to microprocessors, control systems and instrumentation. (Amended February 3, 1993)
- 8-29-111 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. (Amended February 3, 1993)
- 8-29-112 Exemption, Low Usage Coatings:** The requirements of Section 302 shall not apply to coatings with separate formulations that are used in volumes of less than 20 gallons per calendar year, provided the requirements of Section 8-29-402 are satisfied. No more than 200 gallons of low usage coating may be used per facility per calendar year. Records of coating usage shall be maintained as per Section 8-29-501. (Amended November 1, 1989; February 3, 1993; June 1, 1994)
- 8-29-113 Deleted February 3, 1993**
- 8-29-114 Exemption, Paper-Fabric-Film Coating:** The requirements of this Rule shall not apply to any source which is subject to and complies with the provisions of Regulation 8, Rule 12.
- 8-29-115 Exemption, Tank-type Stripper:** The requirements of Section 8-29-305 shall not apply to a tank-type stripper employing a sealing fluid at least four inches in depth which floats on the stripper surface and which consists of:
- 115.1 Water, or
 - 115.2 A fluid with a true vapor pressure of less than 10 mmHg (0.19 psia) at actual usage temperature. (Adopted December 7, 1983)
- 8-29-116 Exemption, Adhesives:** The requirements of this Rule shall not apply to the application of adhesives. Application of adhesive is subject to the requirements of Regulation 8, Rule 4. (Adopted November 1, 1989)
- 8-29-117 Exemption, Aerosol Cans:** The requirements of this Rule shall not apply to non-refillable handheld aerosol cans. Application of coating from aerosol cans is subject to the requirements of Regulation 8, Rule 49. (Adopted November 1, 1989, Amended June 20, 1990)
- 8-29-118 Exemption, Stencil Coatings:** The requirements of this Rule shall not apply to the application of coatings by template or hand in order to add designs, letters and/or numbers to the products. Stencil Coating is subject to the requirement of Regulation 8, Rule 4. (Adopted November 1, 1989)
- 8-29-119 Exemption, Solid Film Lubricant:** The provisions of this Rule shall not apply to any solid film lubricant (anti-chafe coating). The application of solid film lubricant is subject to the requirements of Regulation 8, Rule 4. (Adopted November 1, 1989)
- 8-29-120 Exemption, Test Panels:** The provisions of this Rule shall not apply to coating test panels used to evaluate coating performance. Such coating is subject to the requirements of Regulation 8, Rule 4. (Adopted November 1, 1989)
- 8-29-121 Exemption, Satellite Coatings:** The provisions of Section 8-29-302 shall not apply to the coating of satellites or satellite components, provided records are maintained as per Section 8-29-501. Application of satellite coating is subject to the requirements of Regulation 8, Rule 4. (Adopted November 1, 1989)
- 8-29-122 Exemption, High-Temperature-Curing Adhesive Bonding Primer:** The provisions of Section 8-29-302 and 310 shall not apply to the use of adhesive

bonding primer that has a cure temperature in excess of 325°F, provided records are maintained as per Section 8-29-501. Application of high-temperature-curing adhesive bonding primer is subject to the requirements of Regulation 8, Rule 4.

(Adopted November 1, 1989; Amended February 3, 1993)

8-29-123 Exemption, Spray Application Equipment: The requirements of Section 8-29-310 shall not apply to the following provisions:

123.1 The application of coatings to surface areas with limited access due to visual impairment which require a 360° spray-gun nozzle extension.

123.2 The application of waterborne extreme performance interior topcoat coatings.

123.3 The application of adhesive bonding primers and pretreatment wash primers.

123.4 The application of a textured finish coat. (Adopted February 3, 1993)

8-29-124 Limited Exemption, Coating Records: The requirements of Subsection 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)

8-29-200 DEFINITIONS

8-29-201 Aerospace Component: The fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle. For the purposes of this Rule, an aerospace component shall include any aerospace prototype or test model.

(Amended November 1, 1989)

8-29-202 Adhesive Bonding Primer: A coating applied in a very thin film to aerospace metal for the primary purpose of providing a primer for a subsequent coat of structural adhesive. (Amended November 1, 1989)

8-29-203 Deleted November 1, 1989

8-29-204 Electric or Radiation Effect Coatings: Electrical conductive or insulative coatings and coatings used on radar and antennae enclosures. (Amended November 1, 1989)

8-29-205 Flight Test Coating: The coating applied to test aircraft to protect the test aircraft from corrosion and to provide required marking during flight test evaluation.

8-29-206 Fuel Tank Coating: A coating applied to the interior of a fuel tank or fuel-wetted areas of aircraft to protect it from corrosion. (Amended November 1, 1989)

8-29-207 Maskant for Chemical Processing: A coating applied directly to an aerospace component to protect surface areas when chemical milling, anodizing, aging, bonding, plating, etching and/or performing other chemical operations on the surface of the component.

8-29-208 Pretreatment Wash Primer: A coating which contains a minimum of 0.5% acid by weight for surface etching and is applied directly to bare metal surfaces to provide corrosion resistance and adhesion. (Amended November 1, 1989)

8-29-209 Primer: A coating applied directly to the aerospace component for purposes of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings. (Amended November 1, 1989)

8-29-210 Deleted November 1, 1989

8-29-211 Stripper: An organic compound mixture applied to remove temporary protective coating, maskant for chemical processing, surface coating or coating residue.

(Amended February 3, 1993)

8-29-212 Temporary Protective Coating: A coating applied to an aerospace component to protect it from any mechanical or environmental damage during manufacturing.

(Amended February 3, 1993)

8-29-213 Topcoat: Coatings applied over a primer or intermediate coating for purposes such as appearance, identification or protection. (Amended November 1, 1989)

8-29-214 Tank-type Stripper: A tank employing a stripping solution where parts are immersed for removal of temporary protective coating, maskant for chemical processing, surface coating or coating residue.

(Adopted December 7, 1983; Amended February 3, 1993)

- 8-29-215 Interior Topcoat:** A topcoat used in interior habitable spaces of aircraft.
(Adopted November 1, 1989; Amended February 3, 1993)
- 8-29-216 Electrostatic Spray:** Equipment used to apply coating by charging atomized particles that are deposited by electrostatic attraction.
(Adopted November 1, 1989; Amended February 3, 1993)
- 8-29-217 Extreme Performance Interior Topcoat:** A topcoat used in interior spaces of aircraft areas requiring fluid, stain or nicotine barrier. (Adopted November 1, 1989)
- 8-29-218 Fire Insulation Coating:** A coating used to provide a layer of insulation in the event of an aircraft or engine fire. (Adopted November 1, 1989)
- 8-29-219 High-Temperature Coating:** A coating that, during normal use, must withstand temperatures in excess of 350oF. (Adopted November 1, 1989)
- 8-29-220 High-Volume, Low-Pressure (HVLP) Spray:** Equipment used to apply coating by means of a gun that operates between 0.1 and 10 psig air atomizing pressure.
(Adopted November 1, 1989; Amended February 3, 1993)
- 8-29-221 Sealant:** A coating applied for the purpose of filling voids and providing a barrier against penetration of water, fuel or other fluids or vapors.
(Adopted November 1, 1989)
- 8-29-222 Self-priming Topcoat:** A coating applied directly to the aerospace component that is not subsequently overcoated. (Adopted November 1, 1989)
- 8-29-223 Transfer Efficiency:** The ratio of the amount of coating solids adhering to an object being coated to the total amount of coating solids used in the application process, expressed as a percentage. (Adopted November 1, 1989)
- 8-29-224 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, surface coating, or stripper.
- 224.1 For purposes of calculating VOC content of a coating, any water or any of the following non-precursor organic compounds shall not be considered to be part of the coating:
methylene chloride
1,1,1 trichloroethane
trichlorotrifluoroethane (CFC-113)
trichlorofluoromethane (CFC-11)
dichlorodifluoromethane (CFC-12)
dichlorotetrafluoroethane (CFC-114)
chloropentafluoroethane (CFC-115)
acetone
parachlorobenzotrifluoride (PCBTF)
cyclic, branched or linear completely methylated siloxanes (VMS)
- 224.2 For purposes of calculating the VOC content of a stripper, methylene chloride and water shall not be considered a part of the VOC content of the stripper.
(Adopted November 1, 1989; Amended February 3, 1993, December 20, 1995)
- 8-29-225 Solid Film Lubricant:** A very thin coating consisting of an organic 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. (Adopted November 1, 1989; February 3, 1993)
- 8-29-226 Sealant Bonding Primer:** A coating applied in a very thin film to an aerospace component for the purpose of providing a primer for a subsequent coat of silicone sealant. (Adopted November 1, 1989)
- 8-29-227 Structural Adhesive:** A coating which is applied for the purpose of bonding structural components together. (Adopted November 1, 1989)
- 8-29-228 Satellite:** A device intended to orbit the earth above the earth's atmosphere.
(Adopted November 1, 1989)
- 8-29-229 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)

8-29-230 Approved Emission Control System: A system for reducing emissions to the atmosphere, consisting of an abatement 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)

8-29-231 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)

8-29-232 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)

8-29-233 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 8-29-302, 306.1, and 310.

(Adopted June 1, 1994)

8-29-300 STANDARDS

8-29-301 Deleted November 1, 1989

8-29-302 Coating Limitations: A person shall not apply to aerospace components any coating with a VOC content in excess of the following limits, expressed as grams VOC per liter (lbs/gal) of coating as applied, excluding water, unless emissions to the atmosphere are controlled to an equivalent level by air pollution abatement equipment with an abatement device efficiency of at least 85 percent that meets the requirements of Regulation 2, Rule 1.

302.1	Primer	350 (2.9)
302.2	Adhesive bonding primer	850 (7.1)
302.3	Interior Topcoat	340 (2.8)
302.4	Electric or Radiation Effect Coating	800 (6.7)
302.5	Extreme Performance Interior Topcoat	420 (3.5)
302.6	Fire Insulation Coating	600 (5.0)
302.7	Fuel Tank Coating	720 (6.0)
302.8	High-Temperature Coating	720 (6.0)
302.9	Sealant	600 (5.0)
302.10	Self-priming Topcoat	420 (3.5)
302.11	Topcoat	420 (3.5)
302.12	Pretreatment Wash Primer	420 (3.5)
302.13	Sealant Bonding Primer	720 (6.0)
302.14	Temporary Protective Coating	250 (2.1)

(Amended November 1, 1989; February 3, 1993)

8-29-303 Deleted November 1, 1989

8-29-304 Solvent Evaporative Loss Minimization: Any person using organic solvent for surface preparation and cleanup or mixing, using or disposing of coating or stripper containing organic solvent:

- 304.1 Shall use closed containers for the storage or disposal of cloth or paper used for solvent surface preparation and cleanup.
- 304.2 Shall not use organic compounds for the cleanup of spray equipment including paint lines unless equipment for collecting the cleaning compounds and minimizing their evaporation to the atmosphere is used.
- 304.3 Shall close containers of stripper subject to this Rule, coating, catalyst, thinner, or solvent when not in use.

(Amended November 1, 1989; February 3, 1993)

8-29-305 Stripper Limitations: A person shall not use a stripper unless it complies with one or both of the following:

- 305.1 The stripper contains less than 400 grams/liter (3.3 lbs/gal) of precursor organic compounds.

305.2 The stripper has a true vapor pressure of less than 10 mmHg (0.19 psia) at actual usage temperature. (Amended December 7, 1983)

8-29-306 Maskant for Chemical Processing Limitations: A person shall not apply any maskant for chemical processing to aerospace components unless:

306.1 The VOC emissions from coating operations are reduced by 85 percent, or

306.2 The coating contains less than 600 grams of VOC per liter of coating excluding water, as applied. (Amended December 4, 1985, November 1, 1989)

8-29-307 Deleted November 1, 1989

8-29-308 Prohibition of Specification: No person shall 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 aerospace component at any physical location within the District.

(Adopted November 1, 1989)

8-29-309 Compliance Statement Requirement: The manufacturer of coatings subject to this Rule shall provide on the coating container or as an accompanying data sheet a designation of VOC (as defined in Section 8-29-224), 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 November 1, 1989; Amended February 3, 1993)

8-29-310 Spray Application Equipment Limitations: Effective July 1, 1994, a person who uses spray application equipment to apply coatings to aerospace components within the District shall use one or more of the following high transfer efficiency application methods, unless emissions to the atmosphere 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 manufacturer's recommendations, or

310.2 Electrostatic Spray, operated in accordance with 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)

8-29-400 ADMINISTRATIVE REQUIREMENTS

8-29-401 Deleted November 1, 1989

8-29-402 Low Usage Coating Petition: Any person seeking to satisfy the requirements of Section 8-29-112 shall comply with the following requirements:

402.1 The user or specifier shall notify the APCO in writing of coatings to be qualified pursuant to this exemption.

402.2 Such notification shall be repeated on an annual basis.

402.3 The notification shall contain volumes and maximum VOC levels of coatings to be used.

402.4 Records must be maintained as in Section 8-19-501.

(Adopted November 1, 1989; Amended June 1, 1994)

8-29-403 Methylene Chloride Reduction Plan: By January 1, 1995, any person using stripper subject to this Rule shall submit a methylene chloride reduction plan. The plan shall include the following:

403.1 Methylene chloride emissions inventory by source

403.2 Description of reduction measures to be implemented

403.3 Implementation schedule for the reduction measures

403.4 Anticipated emission reductions and projected costs for each reduction measure (Adopted February 3, 1993)

8-29-500 MONITORING AND RECORDS

8-29-501 Records: Any person subject to Sections 8-29-302, 305 and/or 306 shall:

- 501.1 Maintain current data necessary to evaluate compliance, including the following information as applicable:
 - a. coating stripper, catalyst, and reducer used
 - b. VOC content of coating and stripper as applied
- 501.2 Record coating usage on a weekly basis including the following information, as applicable, unless otherwise specified in permit conditions imposed per Regulation 2-1-403:
 - a. coating and mix ratio of components in the coating used as applied
 - b. quantity of each coating applied
- 501.3 Record on a daily basis coating usage and key system operating parameters when air pollution abatement equipment is used to comply with the requirements of Sections 302, 306, or 310.
- 501.4 Record cleanup solvent usage on a monthly basis the type and amount of solvent used for cleanup and surface preparation, unless otherwise specified in permit conditions imposed per Regulation 2-1-403.
- 501.5 Records on a monthly basis the amount of stripper used, unless otherwise specified in permit conditions imposed per Regulation 2-1-403. A person using a tank-type stripper shall maintain records on a monthly basis showing the amount of stripper added to each tank.
- 501.6 Records shall be retained and available for inspection by the APCO for the previous 24-month period
- 501.7 The requirements of Section 8-29-501.2, 501.4 and 501.5 shall not apply to any person who complies with an alternate recordkeeping plan that provides for an enforceable daily record which meets the following requirements:
 - a. The APCO must be petitioned in writing that complying with Sections 8-29-501.2, 501.4 and 501.5 would constitute an undue burden.
 - b. A list of coatings and solvents subject to the plan.
 - c. A description of the calculation methodology, and estimated annual usage for coatings and solvent.
 - d. Effective August 1, 1994 and annually thereafter, any facility operating under this provision must submit an update to the plan that identifies any changes in coating and solvent usage, and the annual usage for the preceding year.
 - e. A violation of Sections 8-29-302, 305 or 306 within the reporting period, as established by the plan, shall be considered a violation for each day of the reporting period.

(Adopted 11/1/89; Amended February 3, 1993; October 6, 1993; June 1, 1994)

8-29-600 MANUAL OF PROCEDURES

8-29-601 Analysis of Coating Samples: Samples of volatile organic compounds as specified in Sections 8-29-302 and 306 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 21 or 22.

(Amended November 1, 1989; February 3, 1993)

8-29-602 Determination of Emissions: Emissions of volatile organic compounds as specified in Section 8-29-302, 306, and 310 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 in violation if the VOC emissions measured by any of the referenced test methods exceed the standard of the rule.

(Amended November 1, 1989; February 3, 1993; June 1, 1994)

8-29-603 Analysis of Stripper Samples: Samples of volatile organic compounds of stripper as specified in Section 8-29-305 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 31. (Adopted November 1, 1989)

- 8-29-604 Determination of Acid Content:** Measurement of acid content as specified in Section 8-29-208 shall be determined in accordance with ASTM Method D-1613-85.
(Adopted February 3, 1993)
- 8-29-605 Analysis of Mold Release Coating Samples:** Samples of mold release coatings containing volatile organic compounds as specified in Section 8-29-302 shall be analyzed as prescribed in the Manual of Procedures, Volume III, Method 31.
(Adopted February 3, 1993)