RULE 2.25 METAL PARTS AND PRODUCTS COATING OPERATIONS

REVISED April 27, 1994

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100 GENERAL

101 **PURPOSE:** The purpose of this rule is to limit the emission of volatile organic compounds in metal parts and products coating operations.

102 **APPLICABILITY:** Except as otherwise provided in Sections 110, 111, 112, 113, and 114 the provisions of this rule are applicable to the surface coating of metal parts and products.

110 **EXEMPTION - LOW USAGE OF NON-COMPLIANT COATINGS:** The provisions of Section 301 shall not apply to coatings used in volumes of less than 50 gallons per year.

111 **EXEMPTION - SPECIFIC COATINGS:** The provisions of Section 300 shall not apply to the following:

111.1 Stencil coatings;

111.2 Safety-temperature indicating coatings;

111.3 Powder coatings; and

111.4 Adhesive coatings upon the effective compliance dates of Rule 2.31, ADHESIVES.

112 **EXEMPTION - SPECIFIC COATING OPERATIONS:** The provisions of Section 302 shall not apply to the application of touch-up coatings, repair coatings, textured finish coatings, metallic coatings which have a metallic content of more than 30 grams per liter, mold-seal coatings, and to facilities that use less than one (1) gallon of coating per day, as applied, including any VOC-containing materials added to the original coating as supplied by the manufacturer.

113 **EXEMPTION - PERFORMANCE TESTING:** The provisions of Sections 301 and 302 shall not apply to the application of coatings while conducting performance tests on the coatings at paint manufacturing facilities provided that written prior approval has been obtained from the Air Pollution Control Officer.

114 **EXEMPTION - AUTOMOTIVE AND TRUCK REFINISHING:** The provisions of this rule shall not apply to coating operations subject to the provisions of Rule 2.26, MOTOR VEHICLE AND MOBILE EQUIPMENT COATING OPERATIONS, upon its effective compliance dates.

200 DEFINITIONS

201 **ADHESIVE:** Any substance that is used to bond surfaces together by attachment.

202 **AIR-DRIED COATING:** A coating that is cured at a temperature below $90^{O}C$ ($194^{O}F$).

203 **BAKED COATING:** A coating that is cured at a temperature at or above $90^{O}C$ ($194^{O}F$).

204 **CAMOUFLAGE COATINGS:** A coating used, principally by the military, to conceal equipment from detection.

205 **COATING:** A material which is applied to a surface and which forms a continuous film in order to beautify and/or protect such surface.

206 **ENCLOSED GUN WASHER:** A spray gun washing system that has an enclosed solvent container, and uses non-atomized solvent flow to flush the spray equipment and collects and returns the discharged solvent to the enclosed container.

207 **ETCHING FILLER:** A coating that contains at least 0.5 percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.

208 **EXEMPT COMPOUNDS:** The following compounds are exempt from the definition of VOC in Section 230:

208.1 Methane
208.2 Carbon Dioxide
208.3 Carbon Monoxide
208.4 Carbonic Acid
208.5 Metallic Carbides or Carbonates
208.6 Ammonium Carbonate
208.7 1,1,1-Trichloroethane
208.8 Methylene Chloride
208.9 Dichlorotrifluoroethane (HCFC-123)
208.10 2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)
208.11 Trichlorofluoromethane (CFC-11)
208.12 Dichlorodifluoromethane (CFC-12)
208.13 Trichlorotrifluoroethane (CFC-113)
208.14 Dichlorotetrafluoroethane (CFC-114)
208.15 Chloropentafluoroethane (CFC-115)

208.16 Pentafluoroethane (HFC-125)

208.17 1,1,2,2-Tetrafluoroethane (HFC-134)

208.18 Tetrafluoroethane (HFC-134a)

208.19 Dichlorofluoroethane (HCFC-141b)

208.20 Chlorodifluoroethane (HCFC-142b)

208.21 1,1,1-Trifluoroethane (HFC-143a)

208.22 Chlorodifluoromethane (HCFC-22)

208.23 Trifluoromethane (HFC-23)

208.24 1,1-Difluoroethane (HFC-152a)

208.25 The following four classes of perfluorocarbon 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.

d. Sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

Perfluorocarbon compounds shall be assumed to be absent from a product or process unless a manufacturer or facility operator identifies the specific compounds and the amounts present in the product or process and provides a validated test method which can be used to quantify the identified compounds.

209 **EXTREME PERFORMANCE COATING:** A coating used on a metal surface where the coated surface, in its intended use, is frequently or chronically exposed to:

209.1 Corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solution;

209.2 Repeated exposure to temperatures in excess of 250^{O}F; or

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

210 **HAND COAT:** The application of coatings by manually held nonmechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe

daubers, and sponges.

211 **HEAT-RESISTANT COATING:** A coating applied to a substrate that must withstand a temperature of at least 204^{o}C (400^{o}F) during normal use.

212 **HIGH GLOSS COATING:** A coating which, when tested in accordance with ASTM Test Method D-523-1989, has a reflectance of 85 percent or more on a 60^{o} meter.

213 **HIGH PERFORMANCE ARCHITECTURAL COATING:** A coating used to protect architectural subsections and which is required to meet the specifications of the Architectural Aluminum Manufacturer Association's publication number AAMA 605.2-1980.

214 **HIGH TEMPERATURE COATING:** A coating applied to a substrate that must withstand a temperature of 538^{o}C (1000^{o}F) during normal use.

215 **HIGH-VOLUME, LOW-PRESSURE (HVLP) SYSTEM:** A coating application system which is operated on a delivered air pressure between 0.1 and 10 psig.

216 **METAL PARTS AND PRODUCTS:** Any components or complete units fabricated from metal, except those subject to the provisions of other District source specific rules.

217 **METALLIC TOP COATING:** A coating which contains more than 5 grams of metal per liter of coating, as applied, where such particles are visible in the dried film.

218 **MOLD-SEAL COATING:** The initial coating applied to a new mold or repaired mold and associated tooling to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold or to the tooling.

219 **PAN BACKING COATING:** A coating applied to the surface of pots, or other cooking implements that are exposed directly to a flame or other heating elements.

220 **POWDER COATING:** Any coating applied as a dry (without solvent or other carrier) finely divided solid, which when melted and fused, adheres to the substrate as a paint film.

221 **PRETREATMENT WASH PRIMER:** A coating which contains no more than 12 percent solids by weight, at least 0.5 percent acid by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

222 **REPAIR COATING:** A coating used to recoat portions of a product which has sustained mechanical damage to the coating following normal painting operations.

223 **SAFETY-TEMPERATURE INDICATING COATING:** A coating which changes physical characteristics, such as color, to indicate unsafe conditions.

224 **SILICONE RELEASE COATING:** Any coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.

225 **SOLAR-ABSORBANT COATING:** A coating which has as its prime purpose the absorption of solar radiation.

226 **STENCIL COATING:** 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.

227 **TEXTURED FINISH:** A rough surface produced by spraying large drops of coating onto a previously applied coating.

228 **VACUUM-METALIZING COATING:** The undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film.

229 **VOLATILE ORGANIC COMPOUND:** Any compound containing at least one atom of carbon, except exempt compounds defined in Section 208.

300 STANDARDS

301 **COATING LIMITS:** Except as indicated, effective April 27, 1994, a person shall not apply to metal parts and products any coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, which contain VOC in excess of the limits in **Table 1**.

TABLE 1	

Grams of VOC per Liter (or Pounds of VOC per Gallon) of Coating Less Water, and Less Exempt Compounds		
VOC CONTENT G/L(LBS/GAL)		
COATING CATEGORY	**BAKED**	**AIR DRIED**
General Coatings	275 (2.3)	340 (2.8)
Specialty Coatings: Etching Filler	420 (3.5)	420 (3.5)
Solar-Absorbent	360 (3.0)	420 (3.5)
Heat-Resistant	360 (3.0)	420 (3.5)
High Gloss	360 (3.0)	420 (3.5)
Metallic	360 (3.0)	420 (3.5)
Extreme Performance	420 (3.5)	420 (3.5)
Silicone Release	420 (3.5)	420 (3.5)
High Performance Architectural	420 (3.5)	420 (3.5)
Camouflage	360 (3.0)	420 (3.5)
Vacuum-Metalizing	420 (3.5)	420 (3.5)
Mold-Seal	420 (3.5)	420 (3.5)
High Temperature	420 (3.5)	420 (3.5)
Pan Backing	420 (3.5)	420 (3.5)
Pretreatment Wash Primer*	420 (3.5)	420 (3.5)

* No maximum solids content restriction.

302 **APPLICATION METHODS:** Effective April 27, 1995 a person shall not apply coatings to metal parts and products subject to the provisions of this rule unless the coatings are applied using properly operated equipment, and by using one of the following application methods or other high transfer efficiency application equipment which has been approved, in writing, by the Air Pollution Control Officer:

302.1 Electrostatic attraction operated in accordance with manufacturer's recommendations;

302.2 High-Volume, Low-Pressure (HVLP) spray system operated in accordance with manufacturer's recommendations;

302.3 Flow coat;

302.4 Dip coat;

302.5 Hand coat; or

302.6 Roll coat.

303 **ADD-ON CONTROLS:** Alternatively, a person may comply with the provisions of Section 301 by using air pollution control equipment, provided that the overall efficiency (capture efficiency multiplied by destruction efficiency) of the system shall not be less than 85 percent by weight in reducing volatile organic compounds. The emission control system, as well as the operational and maintenance plan necessary to compliance on an on-going basis, shall be approved in writing by the Air Pollution Control Officer.

304 **SURFACE PREPARATION AND CLEAN-UP SOLVENTS:**

304.1 Effective April 27, 1995 a person shall not use materials which have a VOC content in excess of 200 grams per liter of material for surface preparation unless such material has an initial boiling point of greater than 190^{o}C as determined by the method specified in Section 501.6.

304.2 A person shall not use VOC-containing materials for the clean-up of equipment used in coating operations unless:

a. Such material is collected in a container which is closed when not in use; and

b. The spray equipment is disassembled and cleaned in an enclosed gun washer or other low emission washing system that has been demonstrated to be at least equivalent to an enclosed system. The alternative low emission washing system must have approval in writing by the Air Pollution Control Officer.

304.3 A person shall use closed containers for the disposal of cloth, paper, or other materials including solvent and spent solvent used for surface preparation, clean-up, and paint removal.

400 ADMINISTRATIVE REQUIREMENTS

401 **PROHIBITION OF SPECIFICATION:** A person shall not specify the use of any coating to be applied to any metal parts and products subject to the provisions of this rule that does not meet the limits and requirements of this rule where such applications result in a violation of this rule. The requirements of this Section shall apply to all written or oral contracts.

402 **QUALIFICATION FOR CLASSIFICATION AS EXTREME PERFORMANCE COATING:** A person shall apply to the Air Pollution Control Officer to have a coating classified as an extreme performance coating prior to application of such coating. The Air Pollution Control Officer may classify a coating as an extreme performance coating provided that the petitioner demonstrates that the intended use of each coated object would require an extreme performance coating and has successfully demonstrated that general compliant coatings are unsuitable.

403 **COMPLIANCE STATEMENT REQUIREMENT:** Effective April 27, 1994, manufacturers of coatings subject to this rule shall provide on coating containers or on separate data sheets the designation of VOC content (as supplied) including any recommended thinning ratio. The VOC content shall be expressed as grams per liter of coating less water and less exempt compounds.

404 **CALCULATION FOR DETERMINATION OF VOC CONTENT PER VOLUME OF COATING:** The VOC content per volume of coating shall be calculated less water and less exempt compounds as follows:

$$VOC = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

where:

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

405 **CALCULATION FOR DETERMINATION OF VOC CONTENT PER VOLUME OF SURFACE PREPARATION OR CLEANUP MATERIAL:** The VOC content per volume of surface preparation and cleanup materials is calculated using the following equation:

$$VOC = \frac{W_s - W_w - W_{es}}{V_m}$$

where:

W_w	=	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

500 MONITORING AND RECORDS

501 RECORDS:

501.1 **Coating and Solvent Records:** Any person subject to the requirements of Section 300 of this Rule shall maintain:

a. A current list of coatings and solvents in use, which includes the following information:

(i) Name and manufacturer information;

(ii) Mixing instructions;

(iii) VOC content of coatings and surface preparation and cleanup solvents as applied;

(iv) Weight percent water;

(v) Weight percent exempt solvent; and

(vi) Thinning solvent composition and density

b. The amounts of coatings and VOCs used according to the following schedule:

(i) Monthly records showing the types and amounts of coatings used that meet the coating standard contained in Section 301; and

(ii) Daily records showing the types and amounts of coatings used that do not meet the requirements of Section 301, and whether such usage was in conjunction with emission control equipment.

c. Usage records of coatings that are exempt from the requirements of this rule by Section 110 can be kept on a quarterly basis.

d. Usage records of coatings shall be kept on a daily basis by those facilities, using less than one gallon per day, exempted under Section 112.

e. Monthly records showing the types and amounts of solvents used for surface preparation and cleanup.

501.2 **Emission Control Equipment Records:** Any person complying with the provisions of Section 301 by using air pollution control equipment shall maintain daily records of key

system operating parameters, such as temperatures, pressures, and/or flowrates, for the emission control equipment which will demonstrate continuous operation and compliance of the equipment during periods of emission producing activity.

501.3 **Record Retention:** All records maintained pursuant to this Section shall be retained for the previous two calendar years, and shall be made available to the Air Pollution Control Officer upon request.

502 TESTING PROCEDURES:

502.1 **VOC Content:** The Volatile organic compound content of coatings and solvents subject to the provisions of this rule excluding exempt compounds shall be determined by procedures contained in EPA Reference Test Method 24 (40 CFR 60, Appendix A).

502.2 **Exempt Compounds:** Measurement of exempt compounds shall be conducted and reported in accordance with ASTM Test Method D 4457-85. For exempt compounds where no reference test method is available, a facility requesting the exemption shall provide appropriated test methods approved by the Air Pollution Control Officer and approvable by EPA.

502.3 **Acid Content:** Measurement of acid content shall be conducted and reported in accordance with ASTM Test Method D 1613-85.

502.4 **Metal Content:** Measurement of metal content shall be conducted and reported in accordance with the South Coast Air Quality Management District's Spectrographic Method 311.

502.5 **Capture Efficiency:** The measurement of capture efficiency of an emission control system shall be determined by and reported in accordance with 40 CFR 52.741, Appendix B, "VOM Measurement Techniques for Capture Efficiency".

502.6 **Boiling Range of Liquid Containing VOC:** Determinations of the initial boiling point of a liquid containing VOC shall be performed in accordance with ASTM Test Method D

1078-86.

502.7 **Control Efficiency:** Determination of control efficiency shall be conducted and reported in accordance with EPA Method 25A.

502.8 **Solids Content:** Measurement of solids content shall be conducted and reported in accordance with EPA Reference Test Method 24.

502.9 **Transfer Efficiency:** The transfer efficiency for alternative coating applications methods described in Section 302 of this Rule shall be determined in accordance with the South Coast Air Quality Management District "Procedure for Testing Spray Equipment Transfer Efficiency (TE)".

502.10 **Spray Gun Cleaning Systems:** The determination of emissions of VOC from spray gun cleaning systems shall be made using South Coast Air Quality Management District "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems"' dated October 3, 1989.