

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

(Adopted March 6, 2009)

RULE 1144 VANISHING OILS AND RUST INHIBITORS

(a) Purpose

The purpose of Rule 1144 is to reduce volatile organic compound (VOC) emissions from the use of vanishing oils and rust inhibitors at industrial facilities.

(b) Applicability

The rule applies to all persons who use vanishing oils and rust inhibitors that come into direct contact with products and parts during manufacture and assembly; and all manufacturers and suppliers who supply, sell, or offer for sale vanishing oils and rust inhibitors for use at industrial facilities. This rule shall apply to all VOC containing fluids used for metal working, metal removal or lubricating operations where the vanishing oil comes into direct contact with products and parts including, but not limited to, broaching, cutting, drilling, drawing, forming, forging, grinding, heading, honing, lapping, milling, quenching, rolling, stamping, tapping, threading, turning and wire drawing. The rule also applies to VOC containing fluids used for rust and corrosion prevention and inhibition during the manufacture and assembly of products and parts. The provisions of this rule shall not apply to repair, maintenance or research operations.

(c) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) **ASSEMBLED AIRCRAFT** is any machine that is a complete vehicle, assembly of parts at an aircraft assembly facility or major partial section including wheel wells, fuselage sections, pressure decks, wings, blades or cockpit, designed to travel through the air, without leaving the earth's atmosphere, including airplanes, balloons, dirigibles, helicopters and missiles.
- (2) **DIRECT-CONTACT LUBRICANT** is a fluid that comes into direct contact with the product or part during manufacturing or assembly and is used to reduce heat and friction and to prolong the life of machine tools and machinery.
- (3) **EXEMPT COMPOUND** is as defined in Rule 102.
- (4) **GRAMS OF VOC PER LITER OF MATERIAL** is the weight of VOC per volume of material and can be calculated by the following equation:

Grams of VOC per liter of material =

$$\frac{W_s - W_w - W_{e.s}}{V_m}$$

Where: W_s = Weight of volatile compounds in grams
 W_w = Weight of water in grams
 $W_{e.s}$ = Weight of exempt compounds in grams
 V_m = Volume of material in liters

- (5) LAPPING is a manufacturing method that employs particles of an abrasive material, suspended in a liquid carrier, between rotating plates.
- (6) MANUFACTURING is the use of tools and labor to make things for sale.
- (7) METAL WORKING FLUID is a fluid functioning in the tool and workpiece interface used to improve product quality and carry away debris and may consist of straight oils, soluble oils and synthetic and semi-synthetic fluids.
- (8) RUST INHIBITOR is an inhibitor, preventative or protectant used to prevent the corrosion of metal surfaces. It is applied independently of any metal working, metal removal, lubricating or cleaning application.
- (9) SINKER ELECTRICAL DISCHARGE MACHINING (EDM) is a method of removing material by a series of rapid recurring electric arcing discharges between an electrode and the workpiece, in the presence of an energetic electric field, in an insulating oil.
- (10) SPACE VEHICLE is a vehicle designed to travel beyond the earth's atmosphere.
- (11) SOLICIT is to require for use or to specify, by written or oral contract.
- (12) VANISHING OIL is a direct-contact lubricant, metal working fluid or oil with a flash point less than 200 °F (93°C).
- (13) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.
- (d) Requirements
- (1) VOC Content
- A person shall not use or solicit the use of any vanishing oil or rust inhibitor that has a VOC content in excess of the limits contained in Table A of this paragraph:

Table A – Fluid Categories and VOC Limits

| FLUID | EFFECTIVE 1/1/2010 | EFFECTIVE 1/1/2012 |
|--------------------|---------------------------------|---------------------------------|
| | VOC g/l (lb/gal) | VOC g/l (lb/gal) |
| (A) Vanishing Oil | 50 (0.42) | |
| (B) Rust Inhibitor | 300 (2.50) | 50 (0.42) |

(2) Prohibition of Sale

(A) No person shall manufacture for use, offer for sale, sell or distribute directly to a person any vanishing oil or rust inhibitor for use in the District which, at the time of sale or manufacture, contains more VOC per liter of material after recommended dilution, and after the effective date, as listed in Table A.

(B) The prohibition of sale shall not apply to any manufacturer or supplier of vanishing oil or rust inhibitor provided:

(i) The product was sold to an independent distributor that was informed in writing by the manufacturer about the compliance status of the product with Rule 1144.

(3) Sell-Through Provision

Any vanishing oil or rust inhibitor that is manufactured prior to the effective date of the applicable limit, and that has a VOC content above that limit (but not above the limit in effect on the date of manufacture), may be sold, supplied, offered for sale, or applied for up to six months after the specified effective date.

(e) Control Equipment

In lieu of complying with the requirements of subdivision (d), a person may operate an emission control system provided:

(1) The control device reduces VOC emissions from an emission collection system by at least 95 percent by weight or the output of the air pollution control device is no more than 5 PPM VOC by volume calculated as carbon with no dilution; and

- (2) The emission collection system has been demonstrated to collect at least 90 percent by weight of the VOC emissions generated by the sources of VOC emission.
- (f) **Administrative Requirements**
- (1) Effective January 1, 2010, containers, for sale or distribution, of any vanishing oil or rust inhibitor subject to this rule shall display the date of manufacture of the contents or a code indicating the date of manufacture. The manufacturers of such vanishing oils or rust inhibitors shall file with the Executive Officer of the District an explanation of each code.
- (g) **Recordkeeping Requirements**
- (1) Records shall be maintained pursuant to Rule 109 for all applications subject to this rule. Vanishing oils and rust inhibitors that contain 50 grams of VOC per liter of material or less shall be considered Super Compliant Materials per Rule 109 (b)(6).
 - (2) Any person using an emissions control system as a means of complying with this rule shall maintain daily records of all key system parameters, including hours of operation, temperatures, pressures and flow rates, that are necessary to ensure control efficiency requirements.
 - (3) Manufacturers utilizing the provision of subparagraph (d)(2)(B) shall maintain notification letters for five (5) years, which shall be made available to the Executive Officer or designee upon request.
- (h) **Test Methods and Procedures**
- The following test methods and procedures shall be used to determine compliance with this rule. Other applicable test methods may be used if they are determined to be equivalent and approved in writing by the Executive Officer, the California Air Resources Board and the U.S. Environmental Protection Agency.
- (1) **Determination of VOC Content**
 - (A) USEPA Reference Method 24 (Code of Federal Regulations Title 40 Part 60, Appendix A). The exempt solvent content shall be determined by SCAQMD Method 303 (Determination of Exempt Compounds) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual; or,
 - (B) SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the

SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(C) Exempt Perfluorocarbon Compounds

The following classes of compounds:

cyclic, branched, or linear, completely fluorinated alkanes;
cyclic, branched, or linear, completely fluorinated ethers
with no unsaturations;

cyclic, branched, or linear, completely fluorinated tertiary
amines with no unsaturations; and

sulfur-containing perfluorocarbons with no unsaturations
and with sulfur bonds only to carbon and fluorine,

will be analyzed as exempt compounds for compliance with paragraph (d), only when manufacturers specify which individual compounds are used in the coating formulation. In addition, the manufacturers must identify the USEPA, CARB, and the SCAQMD approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Flash Point

ASTM D93 - 07 Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.

(3) Determination of Efficiency of Emission Control System

(A) The capture efficiency of an emission control system shall be determined by verifying the use of a Permanent Total Enclosure (PTE) and 100% capture efficiency as defined by U.S. EPA Method 204 "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a U.S. EPA Method 204 defined PTE is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in U.S. EPA technical guidance document "Guidelines for Determination Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the U.S. EPA technical guidelines shall be determined by:

(i) The Temporary Total Enclosure (TTE) approach of U.S. EPA Method 204 through 204F; or

(ii) The SCAQMD "Protocol for Determination of Volatile organic Compounds (VOCs) Capture efficiency."

- (B) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by U.S. EPA's Test Method 18, or Air Resources Board (ARB) Method 422 for the determination of emissions of Exempt Compounds and U.S. EPA's Test Methods 25, 25A, SCAQMD Method 25.1 for the determination of Total Gaseous Non-Methane Organic Emissions as Carbon, or SCAQMD Method 25.3 for the determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources, as applicable.
- (C) The overall efficiency of an emission control system shall be determined using the following equation:

$$\begin{aligned} &\text{Overall Efficiency} \\ &= (\text{Capture Efficiency}) \times (\text{Control Equipment Efficiency})/100 \end{aligned}$$

(i) Exemptions

- (1) Paragraph (d)(2) and subdivision (f) shall not apply to vanishing oils and rust inhibitors subject to the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.
- (2) Until January 1, 2011, paragraph (d)(1) shall not apply to vanishing oils and rust inhibitors subject to the California Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.
- (3) The provisions of this rule shall not apply to vanishing oils and rust inhibitors sold in this District for shipment outside of this District or for shipment to other manufacturers for repackaging.
- (4) The provisions of subdivisions (d) and (f) of this rule shall not apply to vanishing oils and rust inhibitors subject to VOC limits in other Regulation XI rules.
- (5) The provisions of subdivision (d) shall not apply to the following operations:
 - (A) Lapping;
 - (B) Sinker EDM;
 - (C) Rust inhibitors and vanishing oils applied to avionics and assembled aircraft;

- (D) Space vehicle components;
- (E) Fluids utilizing the control device option in subdivision (e);
- (F) Until January 1, 2011, rust inhibitors used in association with a military specification, military standard, Department of Defense document or Production Part Approval Process (PPAP). The specifications for the part shall be made available to the Executive Officer upon request.