

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

RULE 1141.2. -- SURFACTANT MANUFACTURING

*(Adopted July 6, 1984)(Amended November 17, 2000)
(Amended January 11, 2002)*

(a) Applicability

This rule applies to all manufacturers of surface-active agents, including detergents, wetting agents, and emulsifiers.

(b) Definitions

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

- (1) CONDENSER is a jacketed tube which has a cooling fluid, often water, flowing through the jacket and which cools and liquefies gases flowing through the inside of the tube.
- (2) DEGASSER is any piece of equipment which removes dissolved gases from liquids.
- (3) LABORATORY APPROVAL PROGRAM (LAP) is a program administered by the District that grants test-method-specific approvals to independent testing laboratories or firms that perform tests to determine compliance with District rules and regulations.
- (4) MINERALIZER is any piece of equipment in which minerals or chemicals, such as lime or iodine, are suspended in a surfactant.
- (5) NEUTRALIZER is any piece of equipment in which materials are added to a liquid in order to change the acidity or alkalinity of the liquid.
- (6) SOAP is a substance used with water to produce suds for washing or cleaning and is the sodium or potassium salts of fatty acids produced by the action of an alkali, such as caustic soda or potash, on fats or oils.
- (7) STRIPPER is any piece of equipment which removes a material from a mixture of materials.
- (8) SURFACTANT is a surface-active agent, which is any compound that reduces surface tension or interfacial tension, when in solution. Surfactants are divided into three categories: detergents, wetting agents, and emulsifiers.

- (9) SURFACTANT MANUFACTURER is a person who produces a synthetic surfactant, most commonly by reacting an organic compound with a sulfonating or sulfating compound.
- (10) SURFACTANT MANUFACTURING EQUIPMENT includes any or all of the following equipment: surfactant reactors, process condensers, degassers, neutralizers, strippers, and mineralizers.
- (11) SURFACTANT REACTOR is any equipment in which organic and/or other materials are reacted to produce a surfactant; this may include stripping columns, condensers, and water separators.
- (12) VENT is a port or opening whose function is to allow gases to discharge to the atmosphere when leaving a reactor or other equipment.
- (13) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.

(c) Requirements

A surfactant manufacturer shall not produce surfactants unless:

- (1) the total emissions of volatile organic compounds (VOC) from the surfactant manufacturing equipment, before being vented to the atmosphere, are reduced:
 - (A) to 0.5 pound per 1000 pounds of surfactant produced, or
 - (B) by 95 percent (wt) or more; and
- (2) all ports used for inspection, taking samples, or adding ingredients are closed when not in use.

(d) Compliance

- (1) A surfactant manufacturer shall:
 - (A) On or before January 1, 1985, submit for District approval, a Compliance Plan describing the methods and equipment to be used to achieve compliance with subparagraph (c)(1)(A) or (c)(1)(B), and
 - (B) On or before July 1, 1986, submit applications for new permits to construct or operate, as necessary, for new or modified equipment involved in such methods.
- (2) On or after July 1, 1986, a surfactant manufacturer shall operate under the approved conditions specified in the Compliance Plan for compliance with paragraph (c)(1), and/or under conditions included in permits to construct

or operate issued for applications submitted pursuant to subparagraph (d)(1)(B).

(e) Test Methods

The following test methods and procedures shall be used to determine compliance with this rule. All test methods referenced below shall be the most recent version issued by the respective organization. Alternative 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 Efficiency of Emission Control Systems:

- (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 US EPA Method 204, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a US 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 the US EPA technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the US EPA technical guidelines shall be determined by:
 - (i) The Temporary Total Enclosure (TTE) approach of US EPA Methods 204 through 204F (40 CFR, part 51, Appendix M); or
 - (ii) The District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency."
- (B) The control equipment efficiency of an emission control system, on a mass emissions basis, and the VOC concentrations in the exhaust gases shall be determined by US EPA Test Methods 25, Gaseous Nonmethane Organic Emissions, 25A, Gaseous Organic Concentration (Flame Ionization), District Method 25.1, Total Gaseous Non-Methane Organic Emissions, or District Method 25.3, Determination of Low Concentration Non-Ethane Non-Methane Organic Compound Emissions from Clean-fueled Combustion Sources, as applicable. US EPA Test Method 18, (40 CFR, part 60, Appendix A) VOC by Gc, or ARB Method 422,

Exempt Halogenated VOCs I Gases, shall be used to determine emissions of exempt compounds.

- (C) The overall efficiency of an emission control system for determining compliance with subparagraph (c)(1)(A) or (c)(1)(B) shall be determined using the following equation (all efficiencies expressed in percent):

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

(2) Multiple Test Methods

When more than one test method or set of test methods are specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of the rule.

- (3) All test methods referenced in this section shall be the most recent version approved by the Executive Officer, CARB, and EPA.

(4) Laboratory Approval

The sampling, analysis, and reporting shall be conducted by a laboratory that has been approved under the District Laboratory Approval Program (LAP) for the cited District reference test methods, where LAP approval is available. For District reference test methods for which no LAP program is available, the LAP approval requirement shall become effective one year after the date that the LAP program becomes available for that District reference test method.

(f) Exemptions

The provisions of this rule shall not apply to:

- (1) Soap manufacturing operations,
- (2) Facilities that only blend and package surfactants,
- (3) Facilities that emit less than 5 pounds per day or less than 110 pounds per calendar month of VOC from surfactant manufacturing. Records of VOCs emitted shall be maintained pursuant to Rule 109.

(g) Fees

For the purpose of determining the appropriate processing fees only, the filing of a Compliance Plan(s) as provided in paragraph (d)(1) shall be considered the

equivalent of filing an application for a permit. The person submitting the Plan shall be assessed a filing and an evaluation fee as described in Rule 306.