

(Adopted September 15, 2000)(Amended June 6, 2003)

RULE 1131. FOOD PRODUCT MANUFACTURING AND PROCESSING OPERATIONS

(a) Purpose and Applicability

The purpose of this rule is to reduce emissions of Volatile Organic Compounds (VOCs) from solvents used in food product manufacturing and processing operations. This rule applies to any person using solvents in any food product manufacturing and processing operation except food supplements in tablet or capsule form.

(b) Definitions

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

- (1) BREWERY is a facility that manufactures malt liquors, including but not limited to beers and ales, using a steeping, boiling and fermentation process or an infusion and fermentation process.
- (2) DEEP-FAT FRYING is the cooking of any food product by immersion in hot fat or oil.
- (3) DISTILLERY is a facility that manufactures alcoholic beverages, including but not limited to whiskey, rum, tequila, vodka, gin, brandy, and liqueurs, using a distillation process.
- (4) EXEMPT COMPOUND is as defined in Rule 102.
- (5) FACILITY means a business or businesses engaged in food product manufacturing and processing operations which are owned or operated by the same person or persons and are located on the same or contiguous parcels.
- (6) FOOD PRODUCT is any material consisting of any combination of proteins, carbohydrates, and fats, and is intended for human consumption. Colorings, flavorings, spices, and extracts or any other additive contained in such a material is considered to be a food product.
- (7) FOOD PRODUCT MANUFACTURING AND PROCESSING OPERATION is any activity or equipment used in the production, formulation, or configuration of any food product. Such manufacturing and processing operations include, but are not limited to distillation,

extraction, reacting, blending, drying, crystallizing, granulating, separation, sterilization, and filtering.

- (8) FOOD SUPPLEMENT is any vitamin or herb in tablet or capsule form, and is ingested into the human body to provide additional nutritional benefits than those provided by food products alone. Food bars and powdered drink mixes shall not be considered to be food supplements.
- (9) GRAMS OF VOC PER LITER OF MATERIAL is the weight of VOC per volume of material and can be calculated by the following equation:

$$\text{Grams of VOC per liter of material} = \frac{W_s - W_w - W_{e.s.}}{V_m}$$

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

- (10) LIQUID LEAK is the dripping of liquid volatile organic compounds at the rate of more than three drops per minute or any visible liquid mist.
- (11) PERSON is any firm, business establishment, association, partnership, corporation or individual, whether acting as principal, agent, employee, or other capacity including any governmental entity or charitable organization.
- (12) SOLVENT is any liquid VOC-containing material.
- (13) SOLVENT CLEANING is the removal of loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants which include but is not limited to dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas.
- (14) STERILIZATION is a process or operation that removes or prevents the growth of bacteria and other living microorganisms.
- (15) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.
- (16) WINERY is a facility that manufactures wine or champagne using a fermentation process.

(c) Requirements

- (1) Effective October 1, 2002, a person shall not use solvents in any food product manufacturing or processing operation, except sterilization processes, unless one of the following is met:
 - (A) the VOC content of each solvent used in such operations does not exceed 120 grams of VOC per liter of material; or
 - (B) a VOC emission control system, consisting of a collection device that collects 90 percent, by weight, of the emissions generated from the food product manufacturing equipment or operation, and a control device that removes 95 percent, by weight, of the collected emissions.
- (2) A person shall not use solvents for the sterilization of food manufacturing and processing equipment unless:
 - (A) the solvent contains no more than 400 grams of VOC per liter of material, effective October 1, 2002.
 - (B) the solvent contains no more than 200 grams of VOC per liter of material, effective October 1, 2005.

In lieu of meeting the VOC limits specified in these subparagraphs, a person may comply by using a VOC emission control system that meets the requirements of subparagraph (c)(1)(B).

- (3) Effective upon adoption of this rule, a person shall not operate equipment used in food product manufacturing and processing operations unless the equipment is free of liquid leaks, visible tears, or cracks that result in VOC emissions to the atmosphere. In addition, the person shall repair any liquid leak, visible tear, or crack detected pursuant to the provisions of this subparagraph within 48 hours, or the person shall drain the equipment of all solvent and shut down until replaced or repaired.
- (4) Effective upon adoption of this rule, a person shall carry out solvent cleaning, excluding sterilization, of equipment, parts, products, tools, machinery, equipment, general work areas, and the storage and disposal of VOC-containing materials used in cleaning operations, pursuant to Rule 1171 – Solvent Cleaning Operations.

(d) Recordkeeping Requirements

- (1) A person shall maintain records pursuant to Rule 109 for all solvents used in food product manufacturing and processing operations.

- (2) A person shall maintain records for the detection of any liquid leak, visible tear, or crack referenced in paragraph (c)(2). The records shall include, at a minimum, the following:
 - (A) the date and time the leak, tear, or crack was detected;
 - (B) specific identification of the equipment associated with the leak, tear, or crack;
 - (C) the date and time the leak, tear, or crack was repaired.Such records shall be retained for two years and shall be made available at the request of the Executive Officer or his representative.

(e) Test Methods

For the purpose of this rule, the following test methods shall be used. Other test methods determined to be equivalent after review by the staffs of the District, the Air Resources Board, and the United States Environmental Protection Agency, and approved in writing by the District Executive Officer may also be used.

(1) Determination of VOC Content

The VOC content of materials subject to the provisions of this rule shall be determined by the following methods:

- (A) United States Environmental Protection Agency (U.S. EPA) Reference Method 24 (Code of Federal Regulations, Title 40, Part 60, Appendix A). The exempt compounds' content shall be determined by the South Coast Air Quality Management District's (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 (VOC) 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 subdivision (c), only when manufacturers specify which individual compounds are used in the solvent formulation and identify the United States Environmental Protection Agency, California Air Resources Board, and the District approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Presence of VOC in Solvents

The presence of VOC in the headspace over the cleaning material shall be determined by SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in a Headspace] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

The presence of VOC in liquid cleaning materials shall be determined by SCAQMD Method 308 (Quantitation of Compounds by Gas Chromatography) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(3) Determination of Efficiency of Emission Control System

(A) The efficiency of the collection device of the emission control system as specified in subparagraph (c)(1)(B) shall be determined by the U.S. EPA method cited in 55 Federal Register 26865, June 29, 1990, or any other alternative method approved by the United States Environmental Protection Agency, the California Air Resources Board, and the District.

(B) The efficiency of the control device of the emission control system as specified in subparagraph (c)(1)(B) and the VOC content in the control device exhaust gases, measured and calculated as carbon, shall be determined by U.S. EPA Test Methods 25, 25A or SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) as applicable. U.S. EPA Test Method 18 or ARB Method 422 shall be used to determine emissions of exempt compounds.

(4) Multiple Test Methods

When more than one test method or set of test methods is 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 this rule.

- (5) All test methods referenced in this section shall be the most recently approved version.

- (f) **Rule 442 Applicability**
Any solvent which is exempt from all or a portion of this rule shall be subject to the applicable requirements of the applicable Regulation XI source specific rule. If there is no applicable Regulation XI source specific rule, the solvent shall be subject to Rule 442 - Usage of Solvent.

- (g) **Exemptions**
 - (1) The provisions of this rule, except paragraphs (c)(2) and (d)(1), shall not apply to:
 - (A) any person or facility with total aggregate VOC emissions less than 440 pounds in any calendar month from all food product manufacturing and processing operations subject to this rule.
 - (B) Operations exclusively using solvents containing no more than 50 grams of VOC per liter of material.
 - (2) The provisions of this rule shall not apply to the following:
 - (A) Deep-fat frying operations.
 - (B) Operations conducted at breweries, wineries, or distilleries.
 - (C) Equipment subject to Rule 472 – Reduction of Animal Matter.
 - (D) The production of food supplements as defined in paragraph (b)(8) of the rule. Such food supplements shall be subject to Rule 1103 – Pharmaceuticals and Cosmetics Manufacturing Operations. The manufacturing and production of all other food supplement products are subject to the requirements of this rule.
 - (E) Operations subject to Rule 1138 – Control of Emissions from Restaurant Operations.
 - (F) Operations subject to Rule 1153 – Commercial Bakery Ovens. Records shall be maintained pursuant to paragraph (d)(1) for solvents used for the sterilization of equipment exempted in this paragraph.
 - (3) Operations exclusively using solvents containing no more than 50 grams of VOC per liter of material are not subject to any provision of this rule.