(Adopted November 3, 1989)(Amended January 5, 1990)
(Amended May 13, 1994)(Amended September 7, 2007)

RULE 1175. CONTROL OF EMISSIONS FROM THE MANUFACTURE OF POLYMERIC CELLULAR (FOAM) PRODUCTS

(a) Applicability

This rule shall apply to polymeric cellular products manufacturing operations including but not limited to expandable polystyrene, polystyrene foam extrusion, polyurethane, isocyanurate and phenolic foam operations. All steps of the manufacturing operation and the storage of the final product for a maximum of 48 hours are subject to the requirements of this rule.

(b) Definitions

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

(1) APPROVED EMISSION CONTROL SYSTEM means any system used to reduce manufacturing and storage emissions and consists of an emission collection system and a control device, which are approved, in writing, by the Executive Officer, ~~.~~that has been ~~The control system must~~ demonstrated to ~~be~~ perform and operate~~d~~ ~~subject~~ according to the following provisions:

(A) The emission collection system shall collect at least ~~a~~ 90 percent by weight of the manufacturing emissions; and

(B) The emission collection system shall collect at least 90 percent by weight of the storage emissions; and

(C~~B~~) The control device shall reduce emissions from the emission collection system by at least 95 percent, by weight.

(2) BLOWING AGENT means a liquid, gaseous or solid material that facilitates the formation of a cellular product from raw polymeric material.

(3) CERTIFICATE OF ANALYSIS is a written document that cites the range of pentanes in expandable polystyrene bead, expressed as the percentage by weight of a manufactured bead-lot, prior to shipment from the manufacturer. It also contains the name of the manufacturer, a bead-lot number, and grade and type identifiers, along with a signature of an officer or an officer's designee of the bead-lot manufacturer.

(4~~3~~) CHLOROFLUOROCARBON (CFC) is any chlorinated fluorinated compound of carbon, excluding;

chlorodifluoromethane (HCFC-22),
dichlorotrifluoroethane (HCFC-123),
tetrafluoroethane (HFC-134a),
dichlorofluoroethane (HCFC-141b),
chlorodifluoroethane (HCFC-142b)
2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124),

(5~~4~~) EXEMPT COMPOUNDS ~~are any of the following compounds:~~ (see Rule 102 - Definition of Terms)

~~(A) Group I (General)~~

~~trifluoromethane (HFC-23)~~
~~pentafluoroethane (HFC-125)~~
~~1,1,2,2-tetrafluoroethane (HFC-134)~~
~~tetrafluoroethane (HFC-134a)~~
~~1,1,1-trifluoroethane (HFC-143a)~~
~~1,1-difluoroethane (HFC-152a)~~
~~chlorodifluoromethane (HCFC-22)~~
~~dichlorotrifluoroethane (HCFC-123)~~
~~2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)~~
~~dichlorofluoroethane (HCFC-141b)~~
~~chlorodifluoroethane (HCFC-142b)~~
~~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~~
~~sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine~~

~~(B) Group II~~

~~methylene chloride~~
~~1,1,1-trichloroethane (methyl chloroform)~~
~~trifluoromethane (FC-23)~~
~~trichlorotrifluoroethane (CFC-113)~~
~~dichlorodifluoromethane (CFC-12)~~
~~trichlorofluoromethane (CFC-11)~~
~~dichlorotetrafluoroethane (CFC-114)~~
~~chloropentafluoroethane (CFC-115)~~

~~The use of Group II compounds and/or carbon tetrachloride may be restricted in the future because they are toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. By January 1, 1996, chlorofluorocarbons (CFC), 1,1,1, trichloroethane~~

~~(methyl chloroform), and carbon tetrachloride will be phased out in accordance with the Code of Federal Regulations Title 40, Part 82 (December 10, 1993).~~

(6~~5~~) EXPANDABLE POLYSTYRENE (EPS) MOLDING OPERATIONS consist of a series of processes, where polystyrene beads and blowing agent are expanded by exposure to steam or any other expansion agent and processed through cup, block or shape molding into low-density, closed cell, cellular products. EPS products include but are not limited to drinking cups, insulation board, packaging material, and ice chests.

(7) LOW-PENTANE BEAD is an expandable polystyrene bead containing pentane as a blowing agent with an upper limit less than 4.0 percent by weight, prior to shipment, as certified upon delivery by an accompanying bead lot manufacturer's Certificate of Analysis.

(8~~6~~) MANUFACTURING EMISSIONS are any emissions of VOC, CFC, or methylene chloride that occur during the manufacturing operation.

(9~~7~~) MANUFACTURING OPERATION means every step of the processing of a polymeric material from the delivery of the raw material, until the storage of the final cellular product.

(10) MID PENTANE BEAD is an expandable polystyrene bead containing pentane as a blowing agent within the range of 4.0 to 5.2 percent by weight, prior to shipment, as certified upon delivery with an accompanying bead lot manufacturer's Certificate of Analysis.

(11~~8~~) RAW MATERIAL means all polystyrene beads, polyurethane, and blowing agent used in the manufacture of polymeric cellular products.

(12~~9~~) RIGID POLYURETHANE is a closed cell polyurethane, primarily manufactured as rigid slabstock, laminated boardstock, field spray foam or pour-in-place foam.

(13) STORAGE EMISSIONS are VOC emissions occurring for a maximum of 48 hours after the polymeric cellular foam product is manufactured.

(14~~0~~) VOLATILE ORGANIC COMPOUND (VOC) ~~is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and exempt compounds~~(see Rule 102 - Definition of Terms).

(c) Emission Control Requirements

(1) Manufacturing Operations, Excluding Expandable Polystyrene (EPS) Molding Operations

(A) By January 1, 1994, each polyurethane operation subject to the rule shall discontinue its use of CFCs, VOCs, or methylene chloride.

(B) Each manufacturing operation, excluding rigid polyurethane operations shall reduce yearly emissions from its 1988 emissions baseline, based on Rule 301 emission fees filing, by 100 percent, beginning calendar year 1994.

(2) Expandable Polystyrene (EPS) Molding Operations

The owner or operator of an expandable polystyrene (EPS) molding operation shall demonstrate, to the satisfaction of the Executive Officer, that manufacturing emissions and post-manufacturing emissions, assuming all the blowing agent is released from the product, are less than 2.4 lbs per 100 lbs of raw material processed.

(3) The owner or operator of any polymeric cellular manufacturing operation, subject to the requirements of ~~sub~~paragraph<u>s</u> (c)(1) or (c)(2), shall submit a plan to ~~the District subject to~~ <u>be</u> approve<u>d</u>~~d~~ by the Executive Officer~~'s designee~~, that ~~will~~ demonstrate<u>s</u> compliance with ~~sub~~paragraph (c)(1) or (c)(2).

(4) The owner or operator of any polymeric cellular manufacturing operation that has not achieved the requirements specified in ~~sub~~paragraph~~s~~ (c)(1), (c)(2), or (c)(3) shall:

(A) Submit permit applications for the installation of an emission control system within four months of the date that compliance with such requirement was not achieved; and

(B) Within <u>twelve</u> ~~12~~ months of failing to meet the requirements of ~~sub~~paragraph (c)(1), (c)(2), or (c)(3), the following provisions must be satisfied:

(i) An approved emission control system is installed and operate<u>d</u>~~ding~~ with all sources of manufacturing emissions <u>collected and reduced according to subparagraphs (b)(1)(A) and (b)(1)(C)</u> ~~vented only to the approved emission control system~~; and

(ii) <u>All sources of storage</u> emissions from the final manufactured product are <u>collected and reduced according</u>

to subparagraphs (b)(1)(B) and (b)(1)(C)~~vented only to the approved emission control system~~ for at least:

(I) 48 hours, in the case of expandable polystyrene molding operations that process more than 800,000 pounds per calendar year of raw material; or

(II) 24 hours, in the case of all other manufacturing operations~~.~~; or

(iii) Expanded polystyrene (EPS) block molding operations may, in lieu of complying with the specific control requirements of clauses (c)(4)(B)(i) and (c)(4)B)(ii), collect and reduce, through a combination of emission control systems and operational techniques, as approved by the Executive Officer, manufacturing emissions by at least 93 percent overall by weight (the product of capture and control device efficiencies), provided, at least 60 percent of the annual EPS block throughput is manufactured with low-pentane bead and the remainder with mid-pentane bead.

(d) Exemptions

(1) The provisions of paragraph (c) shall not apply to any:

(A) Expandable polystyrene operation that processes less than~~.~~ 200 pounds per day of raw material.

(B) Rigid polyurethane operation that processes less than 1,000 pounds per day of raw material.

(2) The provisions of ~~subparagraph~~ clause (c)(4)(B)(ii) shall not apply to any facility that only manufactures:

(A) rigid polyurethane foam; or

(B) EPS foam and the highest concentration of the blowing agent in the cellular product is 1.8 percent or less by weight within 15 minutes of completion of the manufacturing operation. Verification of the concentration shall be demonstrated annually, pursuant to a protocol submitted to ~~the District~~ and ~~subject to~~ approved~~al~~ by the Executive Officer.

(e) Recordkeeping

(1) Any owner or operator subject to this rule or claiming an exemption under paragraph (d) shall maintain a daily record of operations, including but not limited to the amount of raw material processed, the equipment used, and the type of blowing agent used. Such records shall be retained in the operator's files for a period of two years and be available to ~~a District representative~~ the Executive Officer upon request.

(2) Owners and/or operators using an emission control system as a means of complying with this rule shall maintain daily records of the operation and maintenance of the emission control system. These records shall include key system operating parameters such as temperatures, pressures, flowrates, and other measures to demonstrate compliance with paragraph (c)(4).

(f) ~~Test Methods~~Methods of Analysis

All applicable methods of analysis shall be as cited in paragraphs (f)(1) through (f)(6) below, or any other applicable method approved by the Executive Officer, the United States Environmental Protection Agency (U.S. EPA), and the California Air Resources Board (CARB), provided the approved alternative method is equivalent to those listed above.

(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 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 will be analyzed as exempt compounds for compliance with ~~paragraph~~ subdivision (c), only when manufacturers specify which individual compounds are used in the ~~coating formulation~~ manufacture of polymeric cellular products:

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.

In addition, the manufacturers must identify ~~the test methods approved and used by the United States Environmental Protection Agency~~ the U.S. EPA, ~~California Air Resources Board~~ CARB, and ~~the District~~ SCAQMD ~~to~~ approved test methods used to quantify the amount of each exempt compound.

(2) Determination of Pentanes in Expandable Styrene Polymers

The weight percent pentane in expandable polystyrene polymer shall be determined by SCAQMD Method 306 (Analysis of Pentanes in Expandable Styrene Polymers) 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 required in paragraph (c)(4) shall be determined by the~~ Capture efficiency specified in paragraph (b)(1) or phrase (c)(4)(B)(iii) shall be determined by the procedures presented in the U.S. EPA technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995", or U.S. EPA Methods 204 A-F.~~USEPA method cited in 55 Federal Register 26865 (June 29, 1990), or any other 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 ~~required~~ specified in paragraph ~~(c)(4)~~ (b)(1) or phrase (c)(4)(B)

(iii) 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), or SCAQMD Method 25.3 (Determination of Low Concentration of Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources) 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 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.