State of California
AIR RESOURCES BOARD

Resolution 85-5

January 24, 1985

Agenda Item No.: 85-1-5

WHEREAS, the Air Resources Board ("Board") and the Environmental Protection Agency have established health-based ambient air quality standards for oxidant and ozone, respectively, and for particulate matter, and the Board has established standards for visibility reducing particles, and these standards are frequently violated in several of the State's air basins;

WHEREAS, Health and Safety Code Sections 39003, 39500, 39602, and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to act as necessary to execute the powers and duties granted to and imposed upon the Board and to assist the air pollution control districts;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as proposed if feasible alternatives or mitigation measures are available;

WHEREAS, the statewide Technical Review Group for Suggested Control Measure Development (TRG) has approved a proposed Suggested Control Measure for Control of Emissions of Reactive Organic Compounds From Resin Manufacturing (the "Suggested Control Measure") and has forwarded the Suggested Control Measure to the Board for consideration;

WHEREAS, the Board has held a duly noticed public meeting to consider approval of the Suggested Control Measure and has heard and considered the comments presented by representatives of the Board, districts, affected industries, and other interested persons and agencies; and

WHEREAS, the Board finds that:

Emissions of reactive organic compounds from resin manufacturing facilities contribute to concentrations of oxidant and ozone and of photochemically generated particulate matter in excess of state and national ambient air quality standards in some of the State's air basins;

Methods to reduce emissions of reactive organic compounds from resin manufacturing facilities can include condensing such emissions in condensers or chillers, combusting the exit gases from the resin manufacturing equipment with a flame incinerator or afterburner, and recovering vapors during on-loading or off-loading raw materials and products;

The technology to control emissions from resin manufacturing plants to the extent provided in the Suggested Control Measure is reasonably available and cost-effective; and

The proposed Suggested Control Measure is consistent with the Environmental Protection Agency Control Techniques Guideline covering the manufacture of polystyrene resins; and

No significant adverse environmental impacts associated with the proposed Suggested Control Measure have been identified and no potentially significant adverse environmental effects are likely to result from the adoption and implementation of the proposed Suggested Control Measure.

NOW, THEREFORE, BE IT RESOLVED that the Board approves the Suggested Control Measure for Control of Emissions of Reactive Organic Compounds from Resin Manufacturing as set forth in Attachment A to this Resolution.

BE IT FURTHER RESOLVED that the Executive Officer shall forward the Suggested Control Measure to districts for consideration and adoption in regulatory form to the extent necessary to provide for the attainment and maintenance of the ambient air quality standards.

I hereby certify that the above is a true and correct copy of Resolution 85-5, as adopted by the Air Resources Board.

Harold Holmes, Board Secretary

Proposed Rule - Control of Reactive Organic Gases from Resin Manufacturing

(a) Definitions

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

(1) REACTIVE ORGANIC GASES (ROG) means any gaseous chemical compound which contains the element carbon; excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates, metallic carbides, methane, [1, 1, 1 trichloroethane, methylene chloride,][1] [trifluoromethane and chlorinated fluorinated hydrocarbons.][2]

(2) AN ORGANIC RESIN REACTOR is any piece of equipment in which organic and/or other materials are reacted to produce an organic resin, and any stripping columns, condensers, and water separators which are used in connection with such equipment and which return evaporated solvent to the reaction vessel.

(3) ORGANIC RESIN is a solid or semi-solid, water insoluble, organic material with little or no tendency to crystallize and is used as the basic component of plastics and/or as a component of surface-coating formulations.

(4) A VENT is a port or opening that allows gases to discharge to the atmosphere when leaving a reactor or other equipment. Where a product recovery condenser is used, the vent is the point of discharge from the condenser to the atmosphere.

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1) As a matter of prudent public health policy, the District Control Board may wish to control these compounds pending consideration of potential toxicity.

2) In accordance with EPA policy (45 Federal Register 48941, July 22, 1980) the District Control Board may wish to substitute the following compounds for the compounds shown: trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), chlorodifluoromethane (CFC-22), trifluoromethane (FC-23), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane(CFC-114), chloropentafluoroethane (CFC-115).

(5) A THINNING TANK is a vessel which receives organic resin and/or reaction products from an organic resin reactor and to which solvents may be added in order to thin the product.

(6) A BLENDING TANK is a vessel in which organic resin is blended with solvents and/or other materials, normally to produce a final product blend.

(7) A CONDENSER is a jacketed tube which has a cooling fluid, often water, flowing through the jacket and which cools and liquifies gases entering the inside of the tube.

(8) A RESIN MANUFACTURER is a person who reacts organic compounds to produce an organic resin and is classified as 2821 in the Standard Industrial Classification Manual.

(9) COMPLETED RESIN is organic resin solids, solvents, and additives as delivered for sale or use.

(10) A CONTINUOUS POLYSTYRENE PROCESS is the reaction of styrene and other ingredients and the purification of the reaction products, to produce a normally uninterrupted flow of resin.

(11) A VACUUM DEVOLATILIZER SYSTEM consists of equipment used in the vacuum separation of polystyrene from styrene monomer and reaction by-products.

(12) A STYRENE RECOVERY SYSTEM consists of equipment that separates styrene monomer from reaction by-products.

(5) A THINNING TANK is a vessel which receives organic resin and/or reaction products from an organic resin reactor and to which solvents may be added in order to thin the product.

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(12) A STYRENE RECOVERY SYSTEM consists of equipment that separates styrene monomer from reaction by-products.

(b) Requirements

(1) On and after (one year from date of adoption) a resin manufacturer shall not manufacture organic resin unless the total emissions of reactive organic gases (ROG) from the vents of the organic resin reactor, thinning tanks, blending tanks, vacuum devolatilizer, and styrene recovery systems, before being vented to the atmosphere, are reduced:

(A) to 0.5 pound per 1000 pounds of completed organic resin produced, or

(B) by 95 percent or more.

(2) On and after (two years from date of adoption) a resin manufacturer shall not manufacture organic resin by a continuous polystyrene process unless the total emissions of ROG from the vacuum devolatilizer system and styrene recovery system, before being vented into the atmosphere, are reduced to 0.12 pound per 1000 pounds of completed organic resin produced.

(c) Exemptions

(1) Section (b) of this rule shall not apply to any facility that emits less than a total of 10 pounds of ROG per day to the atmosphere from all of the equipment subject to this rule.

[(2) The exclusions from the definition of Reactive Organic Gases (ROG) in Section (a)(1) of this rule shall only apply where the owner or operator demonstrates, to the satisfaction of the air pollution control officer, that an emitted compound is one of the excluded compounds.]3)

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3)This section may be inserted at the discretion of the District Control Board.

(d) Compliance

(1) On or before (6 months from date of adoption) an organic resin manufacturer shall either:

(A) submit to the Executive Officer test data or the theoretical calculations which demonstrate planned compliance with either Section (b)(1)(A) or (b)(1)(B) and specify the operating conditions that achieve such reductions, and submit applications for permits to construct or operate any new or modified control equipment necessary for the planned method of compliance; or

(B) submit test data or theoretical calculations which demonstrate qualification for an exemption under Section (c) of this rule and specify the operating conditions which will qualify the resin manufacturer for such an exemption, and submit applications for permits to construct or operate any new or modified equipment necessary to qualify the resin manufacturer for an exemption under Section (c) of this rule.

(2) On or before (one year from date of adoption) a resin manufacturer making organic resin by a continuous polystyrene process shall submit test data or theoretical calculations which demonstrate planned compliance with Section (b)(2) and specify the operating conditions that achieve reductions and submit application(s) for permits to construct or operate as necessary for any new or modified control equipment necessary for the planned method of compliance.

(d) Compliance

(1) On or before (6 months from date of adoption) an organic resin manufacturer shall either:

(A) submit to the Executive Officer test data or the theoretical calculations which demonstrate planned compliance with either Section (b)(1)(A) or (b)(1)(B) and specify the operating conditions that achieve such reductions, and submit applications for permits to construct or operate any new or modified control equipment necessary for the planned method of compliance; or

(B) submit test data or theoretical calculations which demonstrate qualification for an exemption under Section (c) of this rule and specify the operating conditions which will qualify the resin manufacturer for such an exemption, and submit applications for permits to construct or operate any new or modified equipment necessary to qualify the resin manufacturer for an exemption under Section (c) of this rule.

(2) On or before (one year from date of adoption) a resin manufacturer making organic resin by a continuous polystyrene process shall submit test data or theoretical calculations which demonstrate planned compliance with Section (b)(2) and specify the operating conditions that achieve reductions and submit application(s) for permits to construct or operate as necessary for any new or modified control equipment necessary for the planned method of compliance.

(e) Method of Analysis

The ROG content of the emissions subject to the provisions of this rule shall be determined by the procedure outlined in Rule _____ (or alternatively - the Administrative Procedures Manual)

-or-

The ROG content of the emissions subject to the provisions of this rule shall be determined by EPA Reference Method 21 (date) or an equivalent method.

(f) Record Keeping

A person shall maintain a record of daily production, raw material and solvent usage for each process line. These records shall be kept for a minimum of one year and shall be made available to the District upon request.

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[4]Any of these sections may be inserted at the discretion of the District Control Board.