

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

RULE 1122 - SOLVENT DEGREASERS

*(Adopted March 2, 1979)(Amended June 1, 1979)(Amended February 1, 1980)
(Amended July 8, 1983)(Amended May 5, 1989)(Amended April 5, 1991)
(Amended July 11, 1997)(Amended September 21, 2001)(Amended December 6, 2002)
(Amended October 1, 2004)*

(a) **Applicability**

This rule applies to all persons who own or operate batch-loaded cold cleaners, open-top vapor degreasers, all types of conveyORIZED degreasers, and air-tight and airless cleaning systems that carry out solvent degreasing operations with a solvent containing Volatile Organic Compounds (VOCs) or with a NESHAP halogenated solvent. Solvent degreasing operations that are regulated by this rule include, but are not limited to, the removal of contaminants from parts, products, tools, machinery, and equipment.

(b) **Definitions**

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

- (1) **AIR-SOLVENT INTERFACE** is the point of contact between the exposed solvent and air.
- (2) **AIR-VAPOR INTERFACE** is the point of contact between the exposed solvent vapor and air.
- (3) **AIR-VAPOR INTERFACE SURFACE AREA**
 - (A) Means the geometric surface area of the open-top of the degreaser for **OPEN-TOP VAPOR DEGREASERS**; or
 - (B) Means the combined geometric surface areas of the projected plane surfaces of all degreaser openings for **CONVEYORIZED VAPOR DEGREASERS**.
- (4) **AIR-SOLVENT INTERFACE SURFACE AREA** means the combined geometric surface areas of the projected plane surfaces of all degreaser openings for **CONVEYORIZED COLD CLEANERS**.
- (5) **AIRLESS/AIR-TIGHT CLEANING SYSTEM** is a sealed cleaning system that has no open air/vapor or air/solvent interface, and is designed and automatically operated in such a manner as to minimize the discharge or leakage of solvent vapor emissions to the atmosphere during all cleaning

and vacuum drying operations. The system consists of devices to condense and recover solvent and solvent vapor, and control devices to remove solvent vapors from all gas streams that vent to the atmosphere.

- (6) AUTOMATED PARTS HANDLING SYSTEM, such as a hoist or a conveyor, is a mechanical device that carries all parts and parts baskets, at a controlled speed, from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts.
- (7) BATCH-LOADED COLD CLEANER is a batch-operated degreaser that is designed to contain liquid solvent, has an air-solvent interface, and is always operated at a temperature below the solvent's boiling point.
- (8) CLEAN AIR SOLVENT is as defined in Rule 102.
- (9) CLEAN AIR SOLVENT CERTIFICATE is a certificate issued by the District to a manufacturer, distributor, or facility for a specified product or class of products that meets the criteria for a Clean Air Solvent.
- (10) CIRCUMFERENTIAL TROUGH is a receptacle located below the primary condenser that conveys condensed solvent and atmospheric moisture to a water separator.
- (11) CONDENSER WATER FLOW SWITCH is a safety switch that turns off the sump heat if the condenser water fails to circulate, or the temperature of the condenser water rises above the design operating temperature.
- (12) CONVEYORIZED (IN-LINE) COLD CLEANER is any degreaser which uses an integral, continuous, mechanical system for moving materials or parts to be cleaned into and out of a solvent liquid cleaning zone.
- (13) CONVEYORIZED (IN-LINE) VAPOR DEGREASER is any degreaser which uses an integral, continuous, mechanical system for moving materials or parts to be cleaned into and out of a vapor cleaning zone.
- (14) DOWNTIME MODE means the time period when a solvent degreaser is not cleaning parts and the sump heating coils are turned off.
- (15) DWELL TIME is the period of time when parts are held within the freeboard area of the degreaser, after cleaning, to allow solvent to drain from the parts back into the machine.
- (16) DRAG-OUT is that solvent carried out of a degreaser that adheres to or is entrapped in the part being removed.
- (17) DEGREASER is any equipment designed and used for holding a solvent to carry out solvent cleaning operations including, but not limited to,

batch-loaded cold cleaners, open-top vapor degreasers, conveyORIZED (in-line) degreasers, and air-tight and airless cleaning systems.

- (18) DRYING TUNNEL is an add-on enclosure extending from the exit area of a conveyORIZED degreaser which reduces drag-out losses by containing evaporating solvent.
- (19) ELECTRONIC COMPONENT is that portion of an assembly, including circuit card assemblies, printed wire assemblies, printed circuit boards, soldered joints, ground wires, bus bars, and other electrical fixtures, except for the actual cabinet in which the components are housed.
- (20) EXEMPT COMPOUND is as defined in Rule 102.
- (21) FREEBOARD AREA is the air space in a batch-loaded cold cleaner that extends from the liquid surface to the top of the tank.
- (22) FREEBOARD HEIGHT
 - (A) Is the distance from the top of the solvent to the top of the tank for BATCH-LOADED COLD CLEANERS; or
 - (B) Is the distance from the air-vapor interface to the top of the tank for OPEN-TOP VAPOR DEGREASERS; or
 - (C) Is the distance from either the air-solvent or air-vapor interface to the top of the tank for conveyORIZED degreasers.
- (23) FREEBOARD RATIO is the freeboard height divided by the smaller of either the inside length or inside width of the degreaser.
- (24) HIGH PRECISION OPTIC is an optical element used in an electro-optical device and is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.
- (25) IDLING MODE means the time period when a solvent degreaser is turned on, but is not actively cleaning parts.
- (26) LIQUID LEAK is a VOC-containing liquid leak from the degreaser at a rate of three drops per minute or more or any visible liquid mist.
- (27) MEDICAL DEVICE is an instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article including any component or accessory, that meets one of the following conditions:
 - (A) it is intended for use in the diagnosis of disease or other conditions or in the cure, mitigation, treatment, or prevention of disease; or
 - (B) it is intended to affect the structure or any function of the body; or
 - (C) it is defined in the National Formulary or the United States Pharmacopeia, or any supplement to them.

- (28) NESHAP HALOGENATED SOLVENT is a solvent that contains 5 percent or more by weight of any one or any combination of halogenated hazardous air pollutant solvent as defined in the most recent version of 40 CFR Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning (Section 63.461), including, but not limited to the following compounds: carbon tetrachloride, chloroform, perchloroethylene, 1,1,1-trichloroethane, trichloroethylene, and methylene chloride.
- (29) OPEN-TOP VAPOR DEGREASER is any batch-loaded, boiling solvent degreaser.
- (30) 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.
- (31) PRIMARY CONDENSER means a series of circumferential cooling coils on the inside walls of a vapor degreaser through which a chilled substance is circulated or recirculated to provide continuous condensation of rinsing solvent vapors, thereby creating a concentrated solvent vapor zone.
- (32) REFRIGERATED FREEBOARD CHILLER is an emission control device, which is mounted above the water jacket or primary condenser coils, consisting of secondary coils which carry a refrigerant to provide a chilled air blanket above the solvent vapor to reduce emissions from the degreaser bath.
- (33) ROTATING BASKET is a perforated or wire mesh cylinder containing parts to be cleaned that is slowly rotated while proceeding through the degreaser.
- (34) SOLVENT DEGREASING is any portion of the operation from the removal of contaminants with solvents, from parts, products, tools, machinery, and equipment to the subsequent drying of the items.
- (35) SOLVENT CONTAINER is that part of the degreaser that is intended to hold the cleaning solvent.
- (36) SPRAY PUMP CONTROL SWITCH is a safety switch that prevents the spray pump from operating without an adequate vapor level.
- (37) SUPERHEATED VAPOR ZONE is a region located within the vapor zone of a degreaser whereby solvent vapors are heated above the solvent's boiling point.

- (38) VAPOR LEVEL CONTROL SWITCH is a safety switch that turns off the sump heat when the solvent vapor level rises above the design operating level.
- (39) VOLATILE ORGANIC COMPOUND (VOC) is as defined in Rule 102.
- (40) WATER SEPARATOR is a device that isolates water from an organic solvent or a mixture of organic solvents by a variety of means including, but not limited to, extraction, evaporation, distillation, drying, adsorption, and filtration.
- (41) WORKLOAD AREA means:
 - (A) the plane geometric surface area of the top of the submerged parts basket, or
 - (B) the combined plane geometric surface area(s) displaced by the submerged part(s), if no parts basket is used.

(c) Work Practice Requirements

Any person owning or operating the following type of degreasers with a VOC-containing solvent shall meet the following work practice requirements:

- (1) Batch-Loaded Cold Cleaners
 - (A) The degreaser shall be operated in accordance with the manufacturer's specifications, and be used with tightly fitting covers that are free of cracks, holes or other defects. In addition, the cover shall be closed at all times when the degreaser contains solvent, except during parts entry and removal or performing maintenance or monitoring that requires the removal of the cover.
 - (B) The parts to be cleaned shall be racked in a manner that will minimize the drag-out losses.
 - (C) Parts shall be drained immediately after the cleaning, until
 - (i) At least 15 seconds have elapsed; or
 - (ii) Dripping of solvent ceases; or
 - (iii) The parts become visibly dry.Parts with blind holes or cavities shall be tipped or rotated before being removed from a degreaser, such that the solvents in the blind holes or cavities are drained in accordance with the above requirements.
 - (D) The solvent container shall be free of all liquid leaks. Auxiliary degreaser equipment, such as pumps, water separators, steam traps,

or distillation units, shall not have any liquid leaks, visible tears, or cracks. In addition, any liquid leak, visible tear, or crack detected pursuant to the provisions of this subparagraph shall be repaired within 48 hours, or the degreaser shall be drained of all solvent and shut down until replaced or repaired.

- (E) Draining or filling of solvent containers shall be performed beneath the liquid solvent surface.
- (F) All waste solvents shall be stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.
- (G) Solvent flow cleaning shall be done within the freeboard area, and shall be done by a liquid stream rather than a fine, atomized, or shower-type spray. Solvent flow shall be directed downward to avoid turbulence at the air-solvent interface and to prevent liquid solvent from splashing outside of the degreaser.
- (H) Degreasing of porous or absorbent materials, such as cloth, leather, wood, or rope, is prohibited.
- (I) Solvent agitation, where necessary, shall be carried out only by pump recirculation, ultrasonics, a mixer, or by air agitation. Air agitation shall be accomplished under the following conditions:
 - (i) The air agitation unit shall be equipped with a gauge and a device that limits air pressure into the degreaser to less than two pounds per square inch gauge;
 - (ii) The cover must remain closed while the air agitation system is in operation; and
 - (iii) Pump circulation shall be performed without causing splashing.
- (J) The average draft rate in the work room, as measured parallel to the plane of the degreaser opening, shall not exceed 9.1 meters per minute (30 feet per minute).
- (K) Ventilation fans shall not be positioned in such a way as to direct airflow near the degreaser openings.
- (L) Spills during solvent transfer shall be wiped up immediately and the used wipe rags shall be stored in closed containers that are handled in accordance with subparagraph (c)(1)(F).
- (M) Solvent levels shall not exceed the fill line.

(2) Open-Top and ConveyORIZED (In-Line) Vapor Degreasers

- (A) The degreaser shall be operated in accordance with the manufacturer's specifications and be used with a tightly-fitting cover that is free of cracks, holes or other defects, except as provided in subparagraph (e)(2)(B). In addition, the cover shall be closed during idling and downtime modes, except while performing maintenance or monitoring that requires the removal of the cover.
- (B) The solvent container shall be free of all liquid leaks. Auxiliary degreaser equipment, such as pumps, water separators, steam traps, or distillation units, shall not have any liquid leaks, visible tears, or cracks. In addition, any liquid leak, visible tear, or crack detected pursuant to the provisions of this subparagraph shall be repaired within 48 hours, or the degreaser shall be drained of all solvents and shut down until replaced or repaired.
- (C) Degreasing of porous or absorbent materials, such as cloth, leather, wood, or rope, is prohibited.
- (D) Transfer of solvent into or out of solvent containers shall be performed with leak-proof couplings, and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.
- (E) The vertical speed of the powered hoist or conveyor shall not be more than 3.4 meters per minute (11.2 feet per minute) when lowering and raising parts in and out of the degreaser, respectively.
- (F) The average draft rate in the workroom, as measured parallel to the plane of the degreaser opening, shall not exceed 9.1 meters per minute (30 feet per minute).
- (G) At start up, the primary condenser and the refrigerated freeboard chiller, if one is required, shall be turned on before the sump heater is turned on. At shutdown, the sump heater shall be turned off before the primary condenser and refrigerated freeboard chiller are turned off.
- (H) The water separator shall be maintained to prevent water from returning to the surface of the boiling solvent sump or from becoming visibly detectable in the solvent exiting the water separator.

- (I) The workload area shall not exceed more than half of the degreaser's air-vapor interface surface area.
 - (J) The workload shall be degreased in the vapor zone until condensation ceases.
 - (K) The temperature within the superheated vapor zone shall be at least 10°F above the boiling point of the solvent being used.
 - (L) Parts and parts baskets shall remain in the superheated vapor zone for at least the minimum proper dwell time, as stated in the manufacturer's specification.
 - (M) Solvent flow cleaning shall be done within the vapor zone and shall be done by a liquid stream rather than a fine, atomized, or shower-type spray. Solvent flow shall be directed downward to avoid turbulence at the air-vapor interface and to prevent liquid solvent from splashing out of the degreaser.
 - (N) Ventilation fans shall not be positioned in such a way as to direct airflow near the degreaser openings.
 - (O) All waste solvents shall be stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.
 - (P) Spills during solvent transfer shall be wiped up immediately and the used wipe rags shall be stored in closed containers that are handled in accordance with subparagraph (c)(2)(O).
 - (Q) Solvent levels shall not exceed the fill line.
 - (3) The applicable requirements of paragraphs (c)(1) and (c)(2) shall be legibly written and permanently and conspicuously posted on or near the degreaser, in such a manner that it is conveniently available to the operator for reference purposes.
- (d) Control Standards for Batch-Loaded and Conveyorized (In-Line) Cold Cleaners
- Any person owning or operating a batch-loaded cold cleaner or a conveyorized (in-line) cold cleaner with a VOC-containing solvent shall meet all of the following applicable requirements:
- (1) Batch-Loaded Cold Cleaners
 - (A) Cleaning materials shall have a VOC content of 25 g/l or less, as used.

- (B) A device for draining cleaned parts shall be used such that drained or dragout solvent is returned.
- (2) ConveyORIZED (In-Line) Cold Cleaners
 - (A) Cleaning materials shall have a VOC content of 25 g/l or less, as used.

(e) Design Requirements and Control Standards for Open-Top and ConveyORIZED (In-Line) Vapor Degreasers

In addition to the applicable requirements of paragraph (c)(2), any person owning or operating an open-top or conveyORIZED (in-line) vapor degreaser with a VOC-containing solvent shall also meet all of the following applicable requirements:

- (1) Open-Top Vapor Degreaser
 - (A) The degreaser shall be operated with all of the following safety switches installed:
 - (i) Vapor level control switch;
 - (ii) Condenser water flow switch, for water-cooled degreasers;
 - (iii) Spray pump control switch, for solvent flow cleaning; and
 - (iv) Sump heat shut-off process control switch or a float for low liquid level indication.
 - (B) The degreaser shall be equipped with:
 - (i) an automated parts handling system;
 - (ii) circumferential primary condensing coils;
 - (iii) a circumferential trough;
 - (iv) a water separator;
 - (v) a freeboard ratio of at least 1.0, and
 - (vi) a superheated vapor zone.

In lieu of the superheated vapor zone, a refrigerated freeboard chiller may be used if the chilled air blanket temperature, measured at the center of the air blanket, is no greater than 40% of the boiling point of the solvent, in degrees Fahrenheit, for solvents that do not form azeotropes with water, or 50% of the boiling point, in degrees Fahrenheit, for solvents that form azeotropes with water. A water separator is not required for solvents that form azeotropes with water.

- (2) ConveyORIZED (In-Line) Vapor Degreasers
 - (A) The degreaser shall be equipped with a high vapor cutoff thermostat with manual reset;
 - (B) Entrances and exits shall have an average clearance between each part and the edge of the degreaser opening of less than 10 centimeters (3.9 inches) or less than 10 percent of the width of the opening, whichever is less.
 - (C) All conveyORIZED (in-line) vapor degreasers shall be equipped with:
 - (i) an automated parts handling system;
 - (ii) circumferential primary condensing coils;
 - (iii) a circumferential trough;
 - (iv) a water separator;
 - (v) a freeboard ratio of at least 1.0;
 - (vi) a refrigerated freeboard chiller that is operated such that the chilled air blanket temperature measured at the center of the air blanket is no greater than 40% of the boiling point of the solvent, in degrees Fahrenheit, for solvents that do not form azeotropes with water, or 50% of the boiling point, in degrees Fahrenheit, for solvents that form azeotropes with water. A water separator is not required for solvents that form azeotropes with water, and;
 - (vii) a superheated vapor zone.
- (3) Effective January 1, 2006, vapor degreasing operations shall be performed using a solvent with a VOC content of no more than 25 g/l, as used.

(f) Airless/Air-tight Cleaning System Requirements

In lieu of meeting the requirements of subdivisions (d) or (e), any person may use an airless/air-tight batch cleaning system, or a District, CARB and USEPA approved alternative cleaning system that achieves equivalent emission reductions, provided that all of the following applicable requirements are met:

- (1) The equipment is operated in accordance with the manufacturer's specifications and operated with a door or other pressure sealing apparatus that is in place during all cleaning and drying cycles.
- (2) All waste solvents are stored in properly identified and sealed containers. All associated pressure relief devices shall not allow liquid solvents to drain out.

- (3) Spills during solvent transfer shall be wiped up immediately, and the used wipe rags shall be stored in closed containers that are handled in accordance with paragraph (f)(2).
 - (4) The equipment is maintained in a vapor-tight, leak-free condition and any leak is a violation.
- (g) Degreasers Using NESHAP Halogenated Solvents
- (1) The provisions of this subdivision are applicable to any batch-loaded cold cleaner, open-top vapor degreasers, and conveyORIZED (in-line) degreasers using NESHAP halogenated solvents as defined in paragraph (b)(28), as a cleaning solvent.
 - (2) The owner or operator shall operate the equipment in compliance with the most recent version of 40 CFR Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning (Sections 63.460 - 63.469).
 - (3) Effective January 1, 2003, any owner or operator of a solvent cleaning device as specified in paragraph (g)(1) shall use such equipment with an airless/air-tight cleaning system or approved alternative equipment that complies with the requirements of subdivision (f).
- (h) Compliance Test Methods
- (1) The VOC content of materials subject to the provisions of this rule shall be determined by the EPA Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coatings, Code of Federal Regulations Title 40, Part 60, Appendix A), or by the most recent version of SCAQMD Method 304 [Determination of Volatile Organic Compounds (VOCs) in Various Materials] contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual. The VOC content of materials containing 50 g/l of VOC or less shall be determined by the most recent version of SCAQMD Method 313 (Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry) or any other alternative test methods approved by the USEPA, CARB, and the District.
 - (2) When more than one test method or set of 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) The initial boiling point of solvents shall be determined by ASTM Method D-1078-78, "Standard Test Method for Distillation Range of Volatile Organic Liquids."
- (4) Measurements of average workroom draft rate shall be done parallel to the plane of the degreaser opening using a thermistor anemometer, with an accuracy within ± 2 feet per minute, and a calibration traceable to the National Institute of Standards and Technology.
- (5) Maximum hoist speed shall be measured with use of a stop clock and distance traveled by the hoist.
- (6) Temperatures in the vapor zone shall be measured with the use of a temperature probe.
- (7) 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 USEPA Method 204, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if a USEPA 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 USEPA technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995." Individual capture efficiency test runs subject to the USEPA technical guidelines shall be determined by:
 - (i) The Temporary Total Enclosure (TTE) approach of USEPA Methods 204 through 204F; or
 - (ii) The District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency."
 - (B) The control equipment efficiency of an emission control system as specified in subparagraph (k)(1)(D), on a mass emissions basis, and the VOC concentrations in the exhaust gases, measured and calculated as carbon, shall be determined by USEPA Test Methods 25, 25A, SCAQMD Method 25.1 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon), or SCAQMD Method 25.3 (Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources), as applicable. USEPA Test Method 18, or

CARB Method 422 shall be used to determine emissions of exempt compounds.

(i) Monitoring, Recordkeeping, and Reporting

(1) A person owning or operating any open-top vapor degreaser or airless/air-tight cleaning system with a VOC-containing solvent shall record at monthly intervals the following information in a format which will provide all the data shown in Attachment A:

- (A) the weight, in pounds, of VOCs added to the degreaser in the calendar month (W_a);
- (B) the weight, in pounds, of VOCs removed from the degreaser in the calendar month (W_b);
- (C) the weight, in pounds, of VOCs contained in the solid waste removed from the degreaser in the calendar month (W_c); and
- (D) the monthly emissions (E) determined by the following equation:

$$E = W_a - W_b - W_c.$$

In lieu of test data, the VOCs contained in the solid waste (W_c) may be calculated as 50% of the weight (in pounds) of the solid waste material removed from the degreasers.

The monthly record shall also include:

- (i) the SCAQMD permit number, or serial/identification number for the degreaser;
- (ii) the product name of the cleaning material;
- (iii) the VOC content of the cleaning material; and
- (iv) the boiling point of the cleaning material.

Records shall be retained for a period of at least two years, and be made available to the Executive Officer upon request.

(2) A person using a NESHAP halogenated solvent shall comply with the recordkeeping provisions identified in the most recent version of 40 CFR Part 63, Subpart T - National Emission Standards for Halogenated Solvent Cleaning (Section 63.467).

(j) General Prohibitions

A person shall not perform solvent degreasing operations, subject to the provisions of this rule, with HCFC-141b (1,1-dichloro-1-fluoroethane) which is

listed as a Group I exempt compound in Rule 102, or with any other solvent prohibited for use in solvent degreasing operations by the USEPA.

(k) Exemptions

(1) The provisions of this rule shall not apply to:

- (A) Prior to January 1, 2006, vapor degreasers using cleaning materials that contain 50 g/l of VOC or less, as used, with no NESHAP halogenated solvents, where the VOC content is determined according to test methods specified in paragraph (h)(1).
- (B) Effective January 1, 2006, vapor degreasers using cleaning materials that contain 25 g/l of VOC or less, as used, with no NESHAP halogenated solvents, where the VOC content is determined according to test methods specified in paragraph (h)(1).
- (C) Batch-loaded cold cleaners and vapor degreasers, until June 1, 2005, with open-top surface areas less than 1.0 square foot (0.1 square meter), or with a capacity of less than 2 gallons, provided:
 - (i) the equipment is used only for electrical, high precision optics or electronics applications; or aerospace and military applications for cleaning solar cells, laser hardware, space vehicle components, fluid systems; or components used solely in research and development programs, or laboratory tests in quality assurance laboratories;
 - (ii) solvent usage is less than five (5.0) gallons per calendar month, and after January 1, 2003, contains no NESHAP halogenated solvents;
 - (iii) the equipment is operated in compliance with the applicable work practice requirements of paragraphs (c)(1) or (c)(2), except for subparagraphs (c)(1)(E) and (J) or (c)(2)(F); and
 - (iv) the operator meets the requirements for Monitoring, Recordkeeping, and Reporting of subdivision (i).
- (D) After June 1, 2005, batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, that are vented to a VOC emission collection and control system provided:

- (i) the equipment is used only for cleaning high-precision optics, electrical or electronic components; or aerospace and military applications for cleaning solar cells, laser hardware, fluid systems, and space vehicle components; and
 - (ii) the emission collection and control system shall collect at least 90 percent, by weight, of the emissions generated by the degreasing operation and have a destruction efficiency of at least 95 percent, by weight, as determined pursuant to (h)(7); and
 - (iii) no NESHAP halogenated solvents are used; and
 - (iv) the equipment is operated in accordance with the applicable work practice requirements of paragraphs (c)(1) or (c)(2), excluding respectively subparagraphs (c)(1)(E), (J) and (K), and (c)(2)(D), (E), (F) and (N); and
 - (v) the operator meets the Monitoring, Recordkeeping, and Reporting requirements of subdivision (i).
- (E) After June 1, 2005, batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, provided:
- (i) the equipment is used only for cleaning electronic components that are designed to travel over 100 miles above the earth's surface; and
 - (ii) the VOC emissions from all of the equipment do not exceed 22 pounds per month per facility, and no NESHAP halogenated solvents are used. However, for two or more facilities that consolidate at least 65% of each of their total VOC emissions from all of their equipment subject to this exemption to one consolidated facility, the VOC limit may be increased to 44 pounds total per month for the two consolidating facilities, or to 88 pounds total per month for three or more consolidating facilities until January 1, 2007 and to 66 pounds total per month thereafter, provided the following conditions are met:
 - (I) demonstrate to the satisfaction of the Executive Officer that the facilities whose monthly emission

limits are being transferred are under common ownership with the consolidated facility;

- (II) that any applicable permits for the equipment being consolidated have been cancelled; and
- (III) written concurrence of the 65% or more consolidation is obtained from the Executive Officer specifying the applicable VOC emission limit in (k)(1)(E)(ii) for the consolidating facilities.

The combined VOC emissions from the facilities involved in the consolidation process cannot exceed the applicable monthly emission limits provided in (k)(1)(E)(ii) for the consolidating facilities.

- (F) After June 1, 2005, batch loaded cold cleaners or vapor degreasers, with open-top surface area less than 1.0 square foot (0.1 square meter) or with a capacity of less than 2 gallons, that are used solely for research and development programs, or laboratory tests in quality assurance laboratories, provided no NESHAP halogenated solvents are used.
 - (G) Motion picture film cleaning equipment.
 - (H) Until December 31, 2008, the cleaning of photocurable resins from stereolithography equipment and models provided no NESHAP halogenated solvents are used.
 - (I) Cleaning of medical devices.
- (2) The provision of paragraph (e)(3) of this rule shall not apply to vapor degreasers containing VOC materials provided:
- (A) the equipment is used only for cleaning electronic components that are designed to travel over 100 miles above the earth's surface; and
 - (B) the VOC emissions from the equipment do not exceed 22 pounds per month per facility, and the equipment contains no NESHAP halogenated solvent; and
 - (C) the Executive Officer has approved permit applications demonstrating that the requirements of subparagraphs (k)(2)(A) and (k)(2)(B) are met.

ATTACHMENT A

RECORDKEEPING FORMS

Form A: Equipment and Material Information

AQMD Permit No. If Applicable	Identification No.	Name of Degreasing Material
Manufacturer of Material	Supplier of Material	VOC Content of Material (gm/l or lb/gal)
VOC of Concentrate (g/l or lb/gal)	Diluted (As Used) VOC Content (gm/l or lb/gal)	Boiling Point of the Material if Used in a Vapor Degreaser (degrees F or degrees C)

Form B: Monthly Emissions Determination

Year	Name of Degreasing or Drying Solvent	W_a (lbs)	W_b (lbs)	W_c (lbs)	Monthly Emissions <u>$(W_a - W_b - W_c)$</u>
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

(W_a) = Weight in pounds, of the VOCs added during any one calendar-month

(W_b) = Weight in pounds, of the VOCs removed from the degreaser or drying device, during the calendar-month

(W_c) = Weight in pounds, of the VOCs in the solid waste removed from the degreaser or drying device, during the calendar-month

(W_a) , (W_b) = (Volume Used) x (VOC content, as Used)

(W_c) = Provided by hazardous waste hauler as the difference between the total weight of hazardous waste and the weight of the soil content or may be calculated as 50% of the weight (in pounds) of the solid waste removed from the degreaser.