

# BAY AREA AIR QUALITY MANAGEMENT DISTRICT

## **REGULATION 8 - ORGANIC COMPOUNDS RULE 16 - SOLVENT CLEANING OPERATIONS**

*(Amended 10/16/02)*

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**REGULATION 8  
ORGANIC COMPOUNDS  
RULE 16  
SOLVENT CLEANING OPERATIONS**

(Adopted March 7, 1979)

**8-16-100 GENERAL**

**8-16-101 Description:** The purpose of this Rule is to limit emissions from solvent cleaning operations as defined in Section 8-16-220. Any operation which is determined to be exempt from the provisions of this Rule shall be subject to the provisions of Rule 4, if not already subject to another Rule of Regulation 8.

*(Amended 7/3/85; 8/2/89; 9/16/98)*

**8-16-110 Deleted, September 16, 1998**

**8-16-111 Exemption, Wipe Cleaning:** The requirements of Section 8-16-301 through 304 of this Rule shall not apply to any solvent cleaning operation using only wipe cleaning. In addition to any VOC limitations in other Regulation 8 rules, wipe cleaning is subject to the requirements of Section 8-16-501.3, and may be subject to VOC limitations in other Regulation 8 rules.

*(Amended 7/3/85; 9/16/98; 10/16/02)*

**8-16-112 Exemption, Semiconductor Solvent Cleaners:** The requirements of this Rule shall not apply to solvent sinks with less than 10 gallons of capacity, enclosed solvent cleaners or solvent vapor dryers at semiconductor manufacturing operations, which are subject to the requirements of Regulation 8, Rule 30.

*(Adopted 7/3/85; Amended 3/16/88; 8/2/89; 9/16/98)*

**8-16-113 Exemption, Aerospace Stripping Operations:** The requirements of this Rule shall not apply to stripping operations in aerospace assembly and component coating operations, which are subject to the requirements of Regulation 8, Rule 29.

*(Adopted July 3, 1985)*

**8-16-114 Exemption, Emulsion or Solution Cleaners:** The requirements of this rule shall not apply to solvent cleaning operations which employ only emulsion or solution cleaners, each containing less than one percent of volatile organic compounds by weight.

*(Adopted 3/16/88; Amended 8/2/89; 9/16/98; 10/16/02)*

**8-16-115 Limited Exemption, Small, Unheated Solvent Cleaning Equipment:** Except for the requirements in subsections 8-16-303.1, 303.3.1, and 303.3.2, the requirements of this Rule shall not apply to equipment or operations that use unheated solvent and that contain less than 3.785 liters (1 gal) of solvent, including volume in any remote reservoir, or have an evaporative area of less than 929 cm<sup>2</sup> (144 in<sup>2</sup> or 1 ft<sup>2</sup>).

*(Adopted 3/16/88; Amended 8/2/89; 9/16/98; 10/16/02)*

**8-16-116 Exemption, Vapor Phase Solder Reflow Operations:** The requirements of this Rule shall not apply to vapor phase solder reflow operations in printed circuit board manufacture and assembly operations, which are subject to the requirements of Regulation 8, Rule 4.

*(Adopted March 16, 1988)*

**8-16-117 Exemption, Dry Cleaning Operations:** The requirements of this Rule shall not apply to dry cleaning operations subject to Regulation 8, Rule 17 or Regulation 11, Rule 16.

*(Adopted 8/2/89; Amended 9/16/98)*

**8-16-118 Limited Exemption, Compounds with Low Volatility:** Solvent cleaning operations utilizing a compound with low volatility shall not be subject to the following requirements:

118.1 Conveyorized Solvent Cleaners: Subsections 302.3, and 302.5.

118.2 Cold Cleaners: Subsection 303.4.

*(Adopted 8/2/89; Amended 10/16/02)*

**8-16-119 Limited Exemption, Sealed Chamber Solvent Cleaners:** The requirements of subsections 302.1.6 and 302.3.2 shall not apply to the sealed chamber portion of conveyorized solvent cleaners.

*(Adopted August 2, 1989)*

**8-16-120 Exemption, Stripping Operations:** The requirements of this Rule shall not apply to stripping operations such as dry film stripping operations in printed circuit board manufacturing. These operations are subject to the requirements of Regulation 8, Rule 4. Tank type stripping operations in aerospace assembly and component coating operations are subject to the requirements of Regulation 8, Rule 29.

*(Adopted September 16, 1998)*

**8-16-121 Limited Exemption, Single Cold Cleaner:** Until June 1, 2003, the VOC content limitation in Section 8-16-303.5 for cleaning solutions used in cold cleaners does not apply to one cold cleaner per facility, provided that annual solvent loss from that cold cleaner does not exceed 20 gallons per year.

*(Adopted 9/16/98; Amended 10/16/02)*

**8-16-122 Limited Exemption, Permitted Cold Cleaners:** Until June 1, 2003, the VOC content limitation in Section 8-16-303.5 for cleaning solutions used in cold cleaners does not apply to any cold cleaner for which a District permit to operate has been obtained pursuant to Regulation 2, Rule 1.

*(Adopted 9/16/98; Amended 10/16/02)*

**8-16-123 Limited Exemption, Specific Cleaning Operations:** Effective June 1, 2003, Section 8-16-303.5 shall not apply to (i) the cleaning of aerospace components, electrical and electronic components, precision optics, medical devices, or cleaning of resin, coating, ink and adhesive mixing, molding and application equipment; or (ii) cleaning associated with research and development operations; performance testing to determine coating, adhesive or ink performance; or testing for quality control or quality assurance purposes.

*(Adopted October 16, 2002)*

**8-16-124 Limited Exemption, Low VOC Cleaning Operations:** The recordkeeping requirements of Section 8-16-501 shall not apply to any cold cleaners that comply with Section 8-16-303.5.1. However, they are subject to Section 8-16-502.

*(Adopted October 16, 2002)*

## **8-16-200 DEFINITIONS**

**8-16-201 Approved Emission Control Device:** A device for reducing emissions of volatile organic compounds (VOC) to the atmosphere, consisting of a control device and a collection system, which meets the requirements of Regulation 2, Rule 1 and which satisfies the following conditions:

201.1 The control device shall achieve the control efficiency specified in the applicable standards section at all times during normal operation of the equipment being controlled.

201.2 The collection system shall have a ventilation rate of 15-20 m<sup>3</sup>/min per m<sup>2</sup> (49.2-65.6 ft<sup>3</sup>/min per ft<sup>2</sup>) of solvent cleaner opening unless necessary to meet OSHA requirements and have one or more inlets for collection of emissions or meet the requirements of Regulation 2, Rule 1.

201.3 The collection system shall be designed and operated in accordance with good engineering practice for maximum collection of emissions.

*(Adopted 8/2/89; Amended 9/16/98)*

**8-16-202 Airless Solvent Cleaner:** Any enclosed solvent cleaner that is automatically operated, seals at a differential pressure of 26 torr or less prior to the introduction of solvent vapor into the cleaning chamber, and maintains differential pressure under vacuum during all cleaning and drying cycles.

*(Adopted September 16, 1998)*

**8-16-203 Airtight Solvent Cleaner:** Any enclosed solvent cleaner that is automatically operated and seals at a differential pressure no greater than 0.5 psi during all cleaning and drying cycles.

*(Adopted September 16, 1998)*

**8-16-204 Cold (Non-boiling) Cleaner:** Any solvent cleaner excluding conveyorized solvent cleaners and vapor solvent cleaners, including, but not limited to, spray sinks, spray booths, spray gun washers and batch-loaded dip tanks.

*(Amended 7/3/85; 8/2/89; 9/16/98)*

- 8-16-205 Compounds with Low Volatility:** For the purpose of this rule, solvents with an initial boiling point (IBP) greater than 120°C (248°F) and where the initial boiling point exceeds the maximum operating temperature of a solvent cleaning operation by at least 100°C (180°F), shall be considered a low-volatile solvent.  
*(Adopted August 2, 1989)*
- 8-16-206 Condenser Flow Switch:** A safety switch which shuts off sump heat if condenser water fails to circulate or rises above the designated operating temperature.  
*(Adopted July 3, 1985)*
- 8-16-207 ConveyORIZED Solvent Cleaner:** Any continuously loaded, conveyORIZED cold or vapor solvent cleaner, including but not limited to gyro, vibra, monorail, cross-rod, mesh, belt and strip cleaners. Strip cleaners clean material by drawing the strip itself through the unit for cleaning prior to coating or other fabrication processes.  
*(Amended 3/16/88; 8/2/89)*
- 8-16-208 Enclosed Solvent Cleaner:** A solvent cleaner consisting of sealed tanks and a drained spray chamber including, but not limited to, spray gun cleaners, closed loop processors, and spray processors.  
*(Adopted September 16, 1998)*
- 8-16-209 Evaporative Area:**
- 209.1 Cold Cleaner:
    - 1.1 General: The surface area of the top of the solvent.
    - 1.2 Enclosed Reservoir: The surface area of the solvent sink or work area.
  - 209.2 Vapor Solvent Cleaner: The surface area of the top of the solvent vapor-air interface.
  - 209.3 ConveyORIZED Solvent Cleaner:
    - 3.1 Cold Cleaner: Definition in subsection 209.1.
    - 3.2 Vapor Solvent Cleaner: Definition in subsection 209.2.*(Adopted August 2, 1989)*
- 8-16-210 Freeboard Chiller:**
- 210.1 Cold Cleaners: A condenser mounted in the freeboard area which provides a chilled air blanket above the solvent to reduce emissions.
  - 210.2 Vapor Solvent Cleaner: A secondary condenser mounted above the primary condenser which provides a chilled air blanket above the solvent vapor air-interface to reduce emissions.
  - 210.3 ConveyORIZED Solvent Cleaner:
    - 3.1 Cold Cleaner: Definition in subsection 210.1.
    - 3.2 Vapor Solvent Cleaner: Definition in subsection 210.2.*(Adopted August 2, 1989)*
- 8-16-211 Freeboard Height:**
- 211.1 Cold Cleaner: The vertical distance from the top of the evaporative area to the top of the cold cleaner.
  - 211.2 Vapor Solvent Cleaner: The vertical distance from the evaporative area (solvent vapor-air interface) to the top of the solvent cleaner.
  - 211.3 ConveyORIZED Solvent Cleaner: The vertical distance from the top of the evaporative area to the bottom of the lowest opening in the solvent cleaner.  
*(Amended August 2, 1989)*
- 8-16-212 Freeboard Ratio:** The freeboard height divided by the smaller of the length or width of the solvent cleaner evaporative area.  
*(Amended August 2, 1989)*
- 8-16-213 Initial Boiling Point:** Boiling point of a solvent as defined by ASTM D-1078-93.  
*(Adopted 8/2/89; Amended 9/16/98)*
- 8-16-214 Liquid Solvent Leak:** A liquid leak of 3 or more drops per minute.  
*(Adopted 8/2/89; Amended 10/16/02)*
- 8-16-215 Makeup Solvent:** Makeup solvent is solvent added to the solvent cleaning operation less the amount of solvent collected from the solvent cleaning operation.  
*(Adopted 7/3/85; Amended 8/2/89; 9/16/98)*
- 8-16-216 National Emission Standards for Hazardous Air Pollutants (NESHA): Halogenated Solvent Cleaners:** Any solvent cleaner using any of the following six

halogenated solvents: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride and chloroform.

*(Adopted September 16, 1998)*

**8-16-217 Remote Reservoir:** A liquid solvent tank which is completely enclosed except for a solvent return opening no larger than 100 cm<sup>2</sup> which allows used solvent to drain into it from a separate solvent sink or work area and which is not accessible for soaking parts.

*(Adopted 3/16/88; Amended 8/2/89; 9/16/98)*

**8-16-218 Sealed Chamber Solvent Cleaner:** A conveyORIZED solvent cleaner in which all spraying and most vapor generating activity is fully contained inside the machine and completely isolated from the outside environment.

*(Adopted August 2, 1989)*

**8-16-219 Solvent:** Organic compounds which are used as diluents, thinners, dissolvers, viscosity reducers, cleaning agents or for other similar uses.

*(Adopted August 2, 1989)*

**8-16-220 Solvent Cleaning Operations:** For the purpose of this rule, a solvent cleaning operation is any process, including wipe cleaning, used to clean or dry metal and non-metal surfaces typically using a cold, vapor or conveyORIZED solvent cleaner.

*(Adopted September 16, 1998)*

**8-16-221 Solvent Loss:** All solvent emitted to atmosphere including, but not limited to, carry out, drag out, working and idling emissions.

*(Adopted September 16, 1998)*

**8-16-222 Solvent Vapor Dryer:** A vapor solvent cleaner in which solvents are volatilized to displace water in precision parts drying.

*(Adopted September 16, 1998)*

**8-16-223 Spray Gun Cleaner:** A solvent cleaner used to clean spray application equipment.

*(Adopted September 16, 1998)*

**8-16-224 Spray Safety Switch:** A safety switch which cuts off the pump of the spray applicator if the vapor level drops below a specified level.

*(Adopted July 3, 1985)*

**8-16-225 Stripping:** The removal of cured coatings, inks, adhesives or maskants. Examples include, but are not limited to wood furniture stripping, metal parts stripping and dry film stripper operations.

*(Adopted September 16, 1998)*

**8-16-226 Vapor Concentration Exhaust Sensor:** A sensor in the exhaust duct that causes the controller to shut down the unit based on the vapor concentration level registering in the duct.

*(Adopted September 16, 1998)*

**8-16-227 Vapor Level Control Thermostat:** A safety switch which turns off the sump heater if the thermostat senses the temperature rising above the designed operating level at the air-vapor interface.

*(Adopted 7/3/85; Amended 3/16/88)*

**8-16-228 Vapor Solvent Cleaner:** Any solvent cleaner that cleans through the condensation of hot solvent vapor on colder parts and boils liquid solvent producing solvent vapor that is used during the cleaning or drying cycle.

*(Amended 8/2/89; 9/16/98)*

**8-16-229 Volatile Organic Compound (VOC):** Any organic compound of carbon (excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate) which would be emitted during use, processing, application, or drying of a solvent, or other material. The test methods specified in Section 8-16-602 shall be used to determine compliance with the VOC content standards in Section 8-16-303.5.1.

*(Adopted 8/2/89; Amended 10/16/02)*

**8-16-230 Waste Solvent Residue:** Sludge which may contain dirt, oil, metal parts, and/or other undesirable waste products concentrated after heat distillation of the waste solvent either in the solvent cleaner itself or after distillation in a separate still.

*(Adopted 7/3/85; Amended 8/2/89)*

**8-16-231 Water Flow Loss Sensor:** A sensor that indicates loss of incoming water flow to the condenser and stops processing to solvent vapor dryers. It is equivalent to a condenser flow switch.

*(Adopted September 16, 1998)*

**8-16-232 Wipe Cleaning:** That method of cleaning which utilizes a material such as a rag wetted with a solvent, coupled with a physical rubbing process to remove contaminants from surfaces.

*(Amended July 3, 1985)*

**8-16-233 Repair and Maintenance Cleaning:** Cleaning of a part or object that occurs after its original manufacture or after its intended use and that is intended to repair, maintain, or return the object or part to use. Cleaning of equipment that is used in a manufacturing process is considered repair and maintenance cleaning. Facilities that perform repair and maintenance cleaning include, but are not limited to, automotive repair facilities.

*(Adopted October 16, 2002)*

**8-16-234 Automotive Repair Facility:** A facility which repairs or services automobiles or other motor vehicles, including, but not limited to, motorcycle, industrial truck, farm equipment, earth moving equipment, or other mobile equipment. Repair activities include, but are not limited to, exhaust systems repair, tire retreading and/or repair, glass replacement, transmission repair, general maintenance and/or repair, and automotive equipment parts and components repair. For the purposes of this Rule, automotive painting is not considered a repair activity.

*(Adopted October 16, 2002)*

**8-16-235 Aerospace Components:** The fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle. For the purposes of this Rule, an aerospace component shall include any aerospace prototype or test model.

*(Adopted October 16, 2002)*

**8-16-236 Electrical and Electronic Components:** Components and assemblies of components that generate, convert, transmit, or modify electrical energy. Electrical and electronic components include, but are not limited to, wires, windings, stators, rotors, magnets, contacts, relays, printed circuit boards, printed wire assemblies, wiring boards, integrated circuits, resistors, capacitors and transistors. Cabinets in which electrical and electronic components are housed are not considered electrical and electronic components.

*(Adopted October 16, 2002)*

**8-16-237 Precision Optics:** The optical elements used in electro-optical devices that are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes of light energy levels.

*(Adopted October 16, 2002)*

**8-16-238 Medical Devices:** An instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory that is (i) intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of diseases, or (ii) is intended to affect the structure or any function of the body, or (iii) is defined in the National Formulary or the United States Pharmacopoeia or any supplement to it.

*(Adopted October 16, 2002)*

**8-16-239 Key System Operating Parameter:** An operating parameter of an approved emission control device, such as temperature, flow rate or pressure, that ensures operation of the equipment within manufacturer specifications and compliance with the standards in subsections 8-16-301.4.3, 302.5.3, or 303.4.4.

*(Adopted October 16, 2002)*

## **8-16-300 STANDARDS**

**8-16-301 Vapor Solvent Cleaner Requirements:** Any person who operates a vapor solvent cleaning device shall conform to the following requirements:

### **301.1 General Operating Requirements:**

- 1.1 The vapor solvent cleaning equipment and emission control device shall be operated and maintained in proper working order.
- 1.2 Liquid solvent leaks shall be repaired immediately or the equipment shall be shut down.

- 1.3 Solvent, including waste solvent, shall not be stored or disposed of in a manner that will cause or allow evaporation into the atmosphere.
- 1.4 Waste solvent residues shall be disposed of by one of the following methods:
  - a. Where residues are treated prior to further offsite treatment, such residues shall be stored in covered containers to minimize evaporation prior to service pick-up.
  - b. Where residues are treated prior to final disposal at an appropriate waste disposal facility, such residues shall not contain more than 10 percent solvent by volume and shall be stored in covered containers.
- 1.5 Devices designed to cover the solvent shall not be removed except to process work or to perform maintenance.
- 1.6 Solvent carry-out shall be minimized by the following methods:
  - a. Rack parts for best drainage,
  - b. Vertical speed of a powered hoist, if one is used, shall not be more than 3.3 m/min (11 ft/min) when lowering and raising the parts,
  - c. Retain the workload in the vapor zone until condensation ceases,
  - d. For manual loading/unloading tip out any pools of solvent on the cleaned parts before removal, and
  - e. Do not remove parts from the solvent cleaner until visually dry.
- 1.7 If a solvent spray is utilized, all spraying must be done at least 10 cm (4 in) below the top of the vapor level or the spray must be totally enclosed during the washing, rinsing, and drying process. The stream pressure shall be low enough to prevent liquid splashing outside the container.
- 1.8 Ventilation fans shall not be positioned in such a way to disturb the vapor zone.
- 1.9 If a water separator is present, water shall not be visually detectable in the solvent returning from the water separator to the solvent cleaner.
- 1.10 The solvent cleaning of porous or absorbent materials in vapor solvent cleaners is prohibited.
- 1.11 The workload shall not occupy more than half the solvent cleaner's evaporative area.
- 301.2 Vapor Solvent Cleaner General Equipment Requirements shall include all of the following:
  - 2.1 A container for the solvent and the articles being cleaned.
  - 2.2 An apparatus, cover, or enclosed reservoir which reduces solvent evaporation when not processing work in the solvent cleaner. The cover must be designed to easily open and close without disturbing the vapor zone. Where a solvent cleaner is subject to Section 301.4.1 and the evaporative area is greater than 1.0 m<sup>2</sup> (10.8 ft<sup>2</sup>), the cover must be powered.
  - 2.3 A method for draining cleaned parts, so that drained solvent is returned to the container
  - 2.4 A permanent, conspicuous label summarizing the applicable operating requirements contained in subsection 301.1.
- 301.3 Excluding enclosed solvent cleaners, Vapor Solvent Cleaner safety switches shall include all of the following:
  - 3.1 Condenser flow switch (except where non-water refrigerant is used) or a water flow loss sensor,
  - 3.2 Deleted September 16, 1998
  - 3.3 Spray safety switch when a spray wand is used.
  - 3.4 Vapor level control thermostat, or a vapor concentration exhaust sensor.



- 301.4 Vapor Solvent Cleaners shall not operate without one of the following control devices:
- 4.1 A physically verifiable, freeboard ratio greater than or equal to 0.75.
  - 4.2 A freeboard chiller where the chilled air blanket temperature measured in °F at the coldest point on the vertical axis in the center of the solvent cleaner shall be no greater than 30 percent of the initial boiling point of the solvent used or 40°F.
  - 4.3 An approved emission control device with a control efficiency of 90 percent or more on a mass basis.
  - 4.4 An enclosed design in which the cover or door opens only when the dry part is entering or exiting the solvent cleaner unless the cleaner is an airless or airtight solvent cleaner.
- 301.5 Deleted March 16, 1988

*(Amended 1/8/86; 3/16/88; 8/2/89; 6/15/94; 9/16/98; 10/16/02)*

**8-16-302 ConveyORIZED Solvent Cleaner Requirements:** Any person who operates a conveyORIZED solvent cleaning device shall conform to the following requirements:

- 302.1 General Operating Requirements:
- 1.1 The solvent cleaning equipment and emission control shall be operated and maintained in proper working order.
  - 1.2 Liquid solvent leaks shall be repaired immediately or the equipment shall be shut down.
  - 1.3 Solvent, including waste solvent, shall not be stored or disposed of in a manner that will cause or allow evaporation into the atmosphere.
  - 1.4 Waste solvent residues shall be disposed of by one of the following methods:
    - a. Where residues are treated prior to further offsite treatment such residues shall be stored in covered containers to minimize evaporation prior to service pick-up.
    - b. Where residues are treated prior to final disposal at an appropriate waste disposal facility, such residues shall not contain more than 10 percent solvent by volume and shall be stored in covered containers.
  - 1.5 Devices designed to cover the solvent shall not be removed except to process work or to perform maintenance.
  - 1.6 If a solvent spray is utilized in a conveyORIZED vapor solvent cleaner, all spraying must be done within the vapor zone. If a solvent flow is utilized in a conveyORIZED cold solvent cleaner, only a continuous fluid stream shall be used (not a fine, atomized, or shower type spray) unless an approved emission control device is used with a control efficiency of 90 percent or more on a mass basis. The stream pressure used in either type of conveyORIZED degreaser shall be low enough to prevent liquid splashing outside the container.
  - 1.7 Solvent carry out shall be minimized by using one or more of the following methods, where applicable:
    - a. For Strip Cleaners:
      - (1) vertical conveyor speed shall be less than 3.3 m/min (11 ft/min), or
    - b. For Non-strip cleaners:
      - (1) vertical conveyor speed shall be less than 3.3 m/min (11 ft/min), and
      - (2) parts shall be racked for best drainage.
  - 1.8 Other Operating Requirements for ConveyORIZED Solvent Cleaners:
    - a. Ventilation fans shall not be positioned in such a way as to direct air flow over the solvent cleaner openings.
    - b. Water shall not be visually detectable in solvent returning from the water separator to the solvent cleaner.

- 1.9 The solvent cleaning of porous or absorbent materials in conveyORIZED degreasers is prohibited.
- 302.2 ConveyORIZED Solvent Cleaner General Equipment Requirements shall include all of the following:
  - 2.1 A container for the solvent and the articles being cleaned.
  - 2.2 An apparatus, cover, or enclosed reservoir which reduces solvent evaporation when not processing work in the degreaser.
  - 2.3 A method for draining cleaned parts, so that drained solvent is returned to the container.
  - 2.4 A permanent, conspicuous label summarizing the applicable operating requirements contained in subsection 302.1.
- 302.3 ConveyORIZED Solvent Cleaners using a volatile solvent shall include all of the following safety switches:
  - 3.1 Condenser flow switch except where non-water refrigerant is used.
  - 3.2 Spray safety switch.
  - 3.3 Vapor level control thermostat.
- 302.4 ConveyORIZED Solvent Cleaner Control Devices shall include the following:
  - 4.1 A drying tunnel or other means, such as a rotating basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor, and
  - 4.2 Minimized entrances and exits which silhouette the work loads such that the average clearance between parts being conveyed and the edge of the solvent cleaner opening is less than 10 cm (4 in) or less than 10 percent of the opening width.
  - 4.3 Down-time covers for closing off the entrance and exit during shutdown hours, or an equivalent device that covers at least 90 percent of the opening.
- 302.5 ConveyORIZED Solvent Cleaners shall not operate without one of the following control devices:
  - 5.1 A freeboard ratio greater than or equal to 0.75.
  - 5.2 A freeboard chiller where the chilled air blanket temperature measured in °F at the coldest point on the vertical axis in the center of the solvent cleaner shall be no greater than 30 percent of the initial boiling point of the solvent used or 40°F.
  - 5.3 An approved emission control device with a control efficiency of 90 percent or more on a mass basis.
  - 5.4 Deleted August 2, 1989
- 302.6 Deleted March 16, 1988

*(Adopted 7/3/85; Amended 1/8/86; 3/16/88; 8/2/89; 6/15/94; 9/16/98; 10/16/02)*

**8-16-303 Cold Cleaner Requirements:** Any person who operates a cold solvent cleaning device shall conform to the following requirements.

- 303.1 General Operating Requirements:
  - 1.1 The solvent cleaning equipment and emission control shall be operated and maintained in proper working order.
  - 1.2 Liquid solvent leaks shall be repaired immediately or the equipment shall be shut down.
  - 1.3 Solvent, including waste solvent, shall not be stored or disposed of in a manner that will cause or allow evaporation into the atmosphere.
  - 1.4 Waste solvent residues shall be disposed of by one of the following methods:
    - a. Where residues are treated prior to further offsite treatment such residues shall be stored in covered containers to minimize evaporation prior to service pick-up.
    - b. Where residues are treated prior to final disposal at an appropriate waste disposal facility, such residues shall not contain more than 10 percent solvent by volume and shall be stored in covered containers.

- 1.5 Devices designed to reduce solvent evaporation shall not be removed except to process work or to perform maintenance. Where a compound with low volatility or a VOC content that does not exceed 50 g/l (0.42 lb/gal) is being used, enclosed (remote) reservoirs are deemed equivalent equipment to closed covers.
  - 1.6 If a solvent flow is utilized, only a continuous fluid stream shall be used (not a fine, atomized, or shower type spray), unless an approved emission control device is used with a control efficiency of 90 percent or more on a mass basis, or unless the solvent spray is totally enclosed during the washing, rinsing and drying process.
- 303.2 Cold Cleaner Operating Requirements:
- 2.1 Cleaned parts shall be drained until dripping ceases.
  - 2.2 Solvent agitation shall be accomplished only by pump recirculation or by means of a mixer. Air agitation shall not be used.
  - 2.3 The solvent cleaning of porous or absorbent materials in cold cleaners is prohibited.
- 303.3 Cold Cleaner General Equipment Requirements shall include all of the following:
- 3.1 A container for the solvent and the articles being cleaned.
  - 3.2 An apparatus, cover, or enclosed (remote) reservoir which reduces solvent evaporation when not processing work in the solvent cleaner. If a compound with low volatility or a VOC content that does not exceed 50 g/l (0.42 lb/gal) is not being used or the solvent is agitated or heated, the cover must be designed so that it can be operated with one hand.
  - 3.3 A method for draining cleaned parts, so that drained solvent is returned to the container. If a compound with low volatility or a VOC content that does not exceed 50 g/l (0.42 lb/gal) is not being used, then the drainage facility must be internal so that the parts are enclosed while draining. The drainage facility may be external where the internal type cannot fit into the cleaning system.
  - 3.4 A permanent, conspicuous label summarizing the applicable operating requirements contained in subsection 303.1.
- 303.4 Except as provided in Section 8-16-303.5, cold cleaners shall not operate without one of the following control devices:
- 4.1 A freeboard ratio greater than or equal to 0.75 where the maximum solvent reservoir capacity is clearly marked by a suitable mechanical or physical means.
  - 4.2 A water cover, provided the solvent is insoluble in and heavier than water.
  - 4.3 A freeboard chiller where the chilled air blanket temperature measured in °F at the coldest point on the vertical axis in the center of the solvent cleaner shall be no greater than 30 percent of the initial boiling point of the solvent used or 40°F.
  - 4.4 An approved emission control device which has a control efficiency of 90 percent or more on a mass basis.
  - 4.5 An enclosed design in which the cover or door opens only when the dry part is entering or exiting the cold cleaner unless the cleaner is an airtight solvent cleaner.
- 303.5 Any person using a cold cleaner for repair and maintenance cleaning shall comply with one of the following requirements:
- 5.1 The VOC content of the cleaning solution shall not exceed 50 g/l (0.42 lb/gal); or
  - 5.2 The cleaning solution shall be branched, cyclic, or linear completely methylated siloxane (VMS); or
  - 5.3 The portion of the cleaning solution that is not VMS shall not exceed a VOC content of 50 g/l (0.42 lb/gal); or

5.4 The source complies with subsection 8-16-303.4.4.

*(Adopted 7/3/85; Amended 1/8/86; 3/16/88; 8/2/89; 9/16/98; 10/16/02)*

**8-16-304 National Emission Standards for Hazardous Air Pollutants (NESHAP): Halogenated Solvent Cleaner Requirements:** In addition to the requirements of this Rule, solvent cleaning equipment that contains any one or a combination of the halogenated solvents specified in Section 8-16-216 at a total concentration of 5 percent or more by weight is also subject to the federal requirements contained in 40 Code of Federal Regulations, Part 63, Subpart T. Buckets, pails, or beakers with capacities of 2 gallons or less are not subject to the federal requirements.

*(Amended, Renumbered 7/3/85; Amended 3/16/88; 9/16/98)*

**8-16-305 Compliance Statement Requirement:** The manufacturer of any solution used to comply with subsection 8-16-303.5 shall provide, on the container or as an accompanying data sheet, a designation of VOC content of the solvent (as defined in Section 8-16-229), including any dilution ratio necessary to achieve compliance with the standards in subsection 8-16-303.5.

*(Adopted October 16, 2002)*

#### **8-16-400 ADMINISTRATIVE REQUIREMENTS**

**8-16-401 Deleted March 16, 1988**

**8-16-402 Deleted March 16, 1988**

**8-16-403 Deleted September 16, 1998**

**8-16-404 Deleted August 2, 1989**

#### **8-16-500 MONITORING AND RECORDS**

**8-16-501 Solvent Records:** Any person subject to the requirements of this Rule shall keep the following records:

501.1 Deleted September 16, 1998

501.2 On a facility-wide, monthly basis, records showing the type and total amount of make-up solvent used in all solvent cleaning operations subject to this rule regardless of the number of cleaning operations involved.

501.3 On a monthly basis, records showing the type and amount of solvent subject to Section 8-16-111.

501.4 For solvent vapor dryers and enclosed solvent cleaners, monthly records of the type and total amount of makeup solvent on a per source basis.

501.5 Records shall be retained and available for inspection by the APCO for the previous 24-month period.

501.6 Information, such as purchase orders or hazardous waste manifests, that will allow the APCO to verify compliance with the solvent loss limitation in Section 8-16-121.

*(Adopted 7/3/85; Amended 3/16/88; 8/2/89; 9/16/98; 10/16/02)*

**8-16-502 Burden of Proof:** Any person claiming exemption pursuant to Section 8-16-114, 115, or 118 or a recordkeeping exemption pursuant to Section 8-16-124 shall have information available such as product data or material safety data sheets that would allow the APCO to verify the eligibility for the exemption.

*(Adopted October 16, 2002)*

**8-16-503 Approved Emission Control Device, Recordkeeping Requirements:** Any person operating air pollution abatement equipment to comply with subsections 8-16-301.4.3, 302.5.3 or 303.4.4 shall record applicable key system operating parameters on a daily basis.

*(Adopted October 16, 2002)*

#### **8-16-600 MANUAL OF PROCEDURES**

**8-16-601 Determination of Emissions:** Emissions of organic compounds as specified in subsections 301.4.3, 302.5.3, or 303.4.4 shall be measured as prescribed by any of the following methods: 1) BAAQMD Manual of Procedures, Volume IV, ST-7, 2) EPA

Method 25 or 25A. A source shall be considered in violation if the VOC emissions measured by any of the referenced test methods exceed the standards of this rule.

*(Amended 7/3/85; 3/16/88; 6/15/94; 9/16/98)*

**8-16-602 Analysis of Samples:** Samples of organic compounds shall be analyzed using EPA Method 24, by the following applicable methods:

- 602.1 Manual of Procedures, Volume III, Method 31 for the determination of percent VOC by weight and VOC content as specified in Sections 8-16-114, and 303.5.
- 602.2 Manual of Procedures Volume III, Method 21 or 22 for the determination of percent solvent by volume as specified in subsections 8-16-301.1.4, 302.1.4 and 303.1.4.
- 602.3 ASTM D-1078-93 for the determination of initial boiling point as specified in Section 8-16-205.
- 602.4 Manual of Procedures, Volume III, Method 43 for the determination of volatile methylsiloxanes (VMS) as specified in subsections 8-16-303.5.2 and 303.5.3.

*(Adopted 7/3/85; Amended 3/16/88; 8/2/89; 9/16/98; 10/16/02)*