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## **Part VI – Generally Applicable Individual Source Requirements For Existing and New Sources**

### **Section 3.0 Degreasing and Solvent Metal Cleaning**

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#### **1.0 APPLICABILITY**

- 1.1 General Applicability.** The provisions of this Section shall apply to all new and existing solvent cleaning operations using volatile organic compounds for solvent cleaning. Other standards, such as the National Emission Standards for Hazardous Air Pollutants for Halogenated Solvent Cleaning, may also regulate the usage of such compounds as trichloroethylene.
- 1.2 Exemptions.** The provisions of this Section shall not apply to the following activities:

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- A. Solvent cleaning operations specifically regulated by another Section in this Part VI.
- B. Laundering and housekeeping supplies and activities.
- C. Testing for surface cleanliness or the cleaning of laboratory equipment at a laboratory.
- D. A cleaning solution containing twenty (20) percent or less VOC by either weight or volume, or equivalent, as shown by any of the following:
  - 1. Is composed of at least ninety-eight (98) percent water by either weight or volume; or
  - 2. Contains only water and material which is a dry solid before mixing with water; or
  - 3. Has a VOC content not exceeding twenty (20) grams per liter (0.17 lb/gal).

## 2.0 DEFINITIONS

“**Agitation/Agitated**” means a state that moves cleaning liquid continuously back and forth or up and down. This includes such motion created by sound waves and to the splashing of a rinse stream operated at a pressure that creates a trajectory exceeding 2 feet along the horizontal plane intersecting the nozzle when the nozzle is at a 45 degree angle above the plane. Liquid motion incidental to a continuous entrance or withdrawal of objects undergoing is not agitation.

“**Air Solvent Interface**” means the surface area defined by points of contact between the solvent liquid or vapor in the solvent cleaner and the surrounding air.

“**Carry-Out**” means solvent carried out of the cleaning machine along with a part being removed from the cleaning machine. The solvent may exist as a liquid coating the part or the part=s hanger or as a liquid entrapped in cavities and irregular surfaces, or entrapped by capillary action within or on the part.

“**Cleaning Solvent**” means solvent used for cleaning that contains more than 2.0% VOC by weight and more than 20 grams of VOC per liter (0.17 lb/gal).

“**Cold Cleaning Degreaser**” means an apparatus used to clean and remove soil from surfaces through a batch process by spraying, brushing, flushing, or immersion while maintaining the solvent below its boiling point.

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“**Control Device**” means equipment used to reduce, by destruction or removal, the amount of air pollutant(s) in an air stream prior to discharge to the ambient air.

“**Conveyorized Degreaser**” means an apparatus used to clean and remove soil from a continuous stream of parts using either cold or vaporized solvents.

“**Degreaser**”: see “SOLVENT CLEANER”

“**Dry Solid**” means any substance that appears and feels dry and that shatters or pulverizes when struck with a hard object. Evaporating solids, all of which have a strong odor, are not included.

“**Emission Control System (ECS)**” means a system designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds. Such system consists of an emissions collection subsystem and an emissions processing subsystem.

“**Freeboard Height**” means:

- A. For a cold cleaner, the distance from the liquid solvent level in the cold cleaning degreaser tank to the lip of the tank.
- B. For an open-top vapor degreaser, it is the distance from the vapor level in the tank during idling to the lip of the tank.
- C. For a conveyorized degreaser using vaporized solvents, it is the distance from the vapor level to the bottom of the entrance or exit opening, whichever is lower.
- D. For a conveyorized degreaser using cold solvents, it is the distance from the liquid solvent level to the bottom of the entrance or exit opening, whichever is lower.

“**Freeboard Ratio**” means the freeboard height divided by the smaller interior dimension (length, width, or diameter) of the solvent cleaner tank.

“**Leak**” means that state or condition in which a cleaning-solvent is allowed to seep or drip or otherwise enters or escapes at either 3 or more drops per minute or a puddle of cleaning-solvent greater than 1 square inch.

“**Leakproof Coupling**” means a threaded or other type of coupling that prevents solvents from leaking while filling or draining solvent to and from the solvent cleaner.

“**Lip Exhaust**” means a system that collects solvent vapors escaping from the top of the cleaner.

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**“Low Pressure Spray Gun”** means an air-atomized spray gun that, by design, functions best at tip pressures below ten (10) psig (516 mm Hg) and for which the manufacturer makes no claims to the public that the gun can be used effectively above twelve (12) psig (619 mm Hg). Measurement of air pressure at the center of the spray gun tip and air horns of an air-atomizing spray gun shall be performed using an attachable device in proper working order supplied by the gun’s manufacturer for performing such a measurement.

**“Make-up Solvent”** means the increment of cleaning-solvent that replaces solvent lost through evaporation or other means and that is added to the solvent remaining in a cleaning machine to bring solvent quantity to the desired level.

**“Non-complying Solvent”** means a solvent that exceeds the applicable percentage composition limit for any of the following four chemical groupings:

- A. **Group I:** One or more of the following families of compounds having the olefinic or cyclo-olefinic type of unsaturation - hydrocarbons, alcohols, aldehydes, esters, ethers, and /or ketones; except perchloroethylene: five (5) percent by volume.
- B. **Group II:** One or more aromatic compounds having eight or more carbon atoms to the molecule except ethylbenzene, methyl benzoate, and phenylacetate: eight (8) percent by volume.
- C. **Group III:** One or more of the following compounds and compound types - ketones having a branched hydrocarbon structure, ethylbenzene, trichloroethylene, and/or toluene: twenty (20) percent by volume.
- D. An aggregate of any combination of the above three groups: twenty (20) percent by volume.

Whenever any organic solvent or any constituent of an organic solvent may be classified from its chemical structure into more than one of the above groups of organic compounds, it shall be considered a member of the most reactive chemical group that it can be classified into, that is, that group having the lowest percentage composition limit.

**“Non-Precursor Organic Compound”** means any of the following organic compounds which have been designated by the EPA as having negligible photochemical reactivity. EPA designates such compounds as “exempt”:

- 67-64-1 Acetone;
- 74-82-8 Methane;
- 74-84-0 Ethane;
- 75-09-2 Methylene chloride (dichloromethane);
- 71-55-6 1,1,1-trichloroethane (methyl chloroform);
- 75-69-4 Trichlorofluoromethane (CFC-11);
- 75-71-8 Dichlorodifluoromethane (CFC-12);

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75-45-6 Chlorodifluoromethane (HCFC-22);  
 76-13-1 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113);  
 76-14-2 1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114);  
 76-15-3 Chloropentafluoroethane (CFC-115);  
 75-46-7 Trifluoromethane (HFC-23);  
 306-83-2 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123);  
 2837-89-0 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124);  
 1717-00-6 1,1-dichloro-1-fluoroethane (HCFC-141b);  
 75-68-3 1-chloro-1,1-difluoroethane (HCFC-142b);  
 354-33-6 Pentafluoroethane (HFC-125);  
 354-25-6 1,1,2,2-tetrafluoroethane (HFC-134);  
 811-97-2 1,1,1,2-tetrafluoroethane (HFC-134a);  
 420-46-2 1,1,1-trifluoroethane (HFC-143a);  
 75-37-6 1,1-difluoroethane (HFC-152a);  
 98-56-6 Parachlorobenzotrifluoride (PCBTF);  
 127-18-4 Perchloroethylene (tetrachloroethylene);  
 422-56-0 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca);  
 507-55-1 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb);  
 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee);  
 75-10-5 Difluoromethane (HFC-32);  
 353-36-6 Ethylfluoride (HFC-161);  
 690-39-1 1,1,1,3,3,3-hexafluoropropane (HFC-236fa);  
 678-86-7 1,1,2,2,3-pentafluoropropane (HFC-245ca);  
 460-73-1 1,1,2,3,3-pentafluoropropane (HFC-245ea);  
 431-31-2 1,1,1,2,3-pentafluoropropane (HFC-245eb);  
 1,1,1,3,3-pentafluoropropane (HFC-245fa);  
 431-63-0 1,1,1,2,3,3-hexafluoropropane (HFC-236ea);  
 1,1,1,3,3-pentafluorobutane (HFC-365mfc);  
 593-70-4 Chlorofluoromethane (HCFC-31);  
 1615-75-4 1-chloro-1-fluoroethane (HCFC-151a);  
 354-23-4 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a);  
 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C4F9OCH3);  
 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF3)2CFCF2OCH3);  
 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C4F9OC2H5);  
 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF3)2CFCF2OC2H5);  
 79-20-9 methyl acetate;  
 cyclic, branched, or linear completely methylated siloxanes;  
 perfluorocarbon compounds that fall into these classes:

- (1) Cyclic, branched, or linear, completely fluorinated alkanes;
- (2) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

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(3) 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.

**“Open-Top Vapor Degreaser”** means any batch-loaded degreaser using solvent that is maintained above the initial boiling point temperature of the solvent. Degreasing occurs through the condensation of the resultant solvent vapor onto the surface of the workload.

**“Organic Compound”** means any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates, and metallic carbides.

**“Organic Solvent”** means any organic compound which is liquid at actual conditions of use or storage and which is used as a diluent, thinner, dissolver, viscosity reducer, extractant, cleaning agent or is a reactant or product in a manufacturing process.

**“Refrigerated Chiller”** means a control device mounted above both the water jacket and the primary condenser coils, consisting of secondary coils, which carry a refrigerant that provides a chilled air blanket above the solvent vapor, thereby reducing VOC emissions from the solvent degreaser bath.

**“Rotating Basket”** means a perforated or wire mesh cylinder containing parts to be cleaned that is slowly rotated while proceeding through the degreaser.

**“Solvent”** for the purposes of this Section, means any liquid or vapor which is used to dissolve, clean, strip, or remove impurities, coatings, contaminants, or films from surfaces or from internal spaces and voids. In addition to VOC-containing solvents, this also includes plain water and mixtures containing water.

**“Solvent Cleaner”** means a device that applies solvent or in which solvent is applied to items for the purpose of solvent cleaning.

**“Solvent Cleaning”** means the use of organic solvent to remove loosely held uncured adhesives, uncured inks, uncured coating, and other contaminants that include, but are not limited to, dirt, soil, lubricants, coolant, moisture, grease, and fingerprints from parts, products, tools, machinery, equipment, and general work areas.

**“Solvent Cleaning Operation”** means any process, including wipe cleaning, used to clean or dry metal and non-metal surfaces typically using a cold, vapor, or conveyORIZED solvent cleaner.

**“Solvent Container”** means that part of the solvent cleaner that is intended to hold the cleaning-solvent.

**“Sump”** means the part of a solvent cleaner where the liquid solvent is located.

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**“True Vapor Pressure”** means absolute vapor pressure of a liquid at its existing temperature of storage and handling.

**“Vapor Loss Control Device”** means any piping, hoses, equipment, and devices which are used to collect, store and/or process organic vapors at a bulk terminal, bulk plant, service station or other operation handling gasoline and/or other organic liquids.

**“Volatile Organic Compounds” or “(VOCs)”** means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.

(1) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane (methyl chloroform); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113); trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorodifluoromethane (HCFC-22); trifluoromethane (HFC-23); 1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123); 1,1,1,2-tetrafluoroethane (HFC-134a); 1,1-dichloro 1-fluoroethane (HCFC-141b); 1-chloro 1,1-difluoroethane (HCFC-142b); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124); pentafluoroethane (HFC-125); 1,1,2,2-tetrafluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); parachlorobenzotrifluoride (PCBTF); cyclic, branched, or linear completely methylated siloxanes; acetone; perchloroethylene (tetrachloroethylene); 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca); 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb); 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43-10mee); difluoromethane (HFC-32); ethylfluoride (HFC-161); 1,1,1,3,3,3-hexafluoropropane (HFC-236fa); 1,1,2,2,3-pentafluoropropane (HFC-245ca); 1,1,2,3,3-pentafluoropropane (HFC-245ea); 1,1,1,2,3-pentafluoropropane (HFC-245eb); 1,1,1,3,3-pentafluoropropane (HFC-245fa); 1,1,1,2,3,3-hexafluoropropane (HFC-236ea); 1,1,1,3,3-pentafluorobutane (HFC-365mfc); chlorofluoromethane (HCFC-31); 1 chloro-1-fluoroethane (HCFC-151a); 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a); 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxybutane (C<sub>4</sub>F<sub>9</sub>OCH<sub>3</sub> or HFE-7100); 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF<sub>3</sub>)<sub>2</sub>CFCF<sub>2</sub>OCH<sub>3</sub>); 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C<sub>4</sub>F<sub>9</sub>OC<sub>2</sub>H<sub>5</sub> or HFE-7200); 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF<sub>3</sub>)<sub>2</sub>CFCF<sub>2</sub>OC<sub>2</sub>H<sub>5</sub>); methyl acetate, 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-C<sub>3</sub>F<sub>7</sub>OCH<sub>3</sub>, HFE-7000), 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE-7500), 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea), and methyl formate (HCOOCH<sub>3</sub>), and perfluorocarbon compounds which fall into these classes:

(i) Cyclic, branched, or linear, completely fluorinated alkanes;

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(ii) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

(iii) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

(iv) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

**“Waste Solvent Residue”** means sludge that may contain dirt, oil, metal particles, 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.

**“Wipe Cleaning”** means the cleaning and removal of residue or contaminants from surfaces by manually rubbing the surfaces with solvent-containing rags or disposable wipers.

**“Workload”** means the objects put in a cleaner for the purposes of removing oil, grease, soil, coating, dirt, or other undesirable matter from the surface of the objects.

### 3.0 LIMITATIONS AND STANDARDS

**3.1 Solvent Handling Requirements.** Any person to whom this Section applies must comply with all of the following solvent handling requirements:

- A. All cleaning solvent, including solvent soaked materials, shall be kept in closed leakfree containers that are opened only when adding or removing materials.
- B. Rags used for wipe cleaning shall be stored in closed containers when not in use.
- C. Each container shall be clearly labeled with its contents.
- D. If any cleaning solvent escapes from a container:
  - 1. Wipe up or otherwise remove immediately if in accessible areas.
  - 2. For areas where access is not feasible during normal production, remove as soon as reasonably possible.

**3.2 Operating and Signage Requirements for Solvent Cleaning Operations.**

- A. Any person who uses a solvent cleaner must conform to the following operating requirements:



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1. The solvent cleaner, ventilation system, and emission control equipment shall be installed, operated, and maintained in proper working order.
2. The solvent containers shall be free of all liquid leaks. Auxiliary cleaner equipment, such as pumps, water separators, steam traps, or distillation units shall not have any liquid leaks, visible tears, or cracks.
3. Any such liquid leak, visible tear, or crack that is detected shall be repaired within one day from discovery by the operator, or the cleaner shall be drained of all solvent and shut down until replaced or repaired.
4. Solvent cleaners shall not be operated when leaking.
5. When solvent is added to or drained from a solvent cleaner, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.
6. If distillation recovery of waste solvent is performed, solvent residues shall not contain more than twenty (20) percent solvent by weight.
7. No person shall remove or open any device designed to cover the solvent unless processing work in the solvent cleaner or performing maintenance on the solvent cleaner.
8. Drain clean parts after cleaning for at least fifteen (15) seconds or until dripping ceases.
9. Drain cleaned material within the freeboard area so that the drained solvent is returned to the container. Parts shall be oriented for best drainage.
10. If using a solvent flow, use only a continuous, fluid stream (not a fine, atomized, or shower type spray) at a pressure that does not cause liquid solvent to splash outside of the solvent cleaner.
11. Perform solvent agitation, where necessary, by means other than air agitation.

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12. Solvent cleaning or solvent vapor cleaning of porous or absorbent materials such as sponges, cloth, leather, wood, or rope is prohibited.
  13. Minimize solvent carry-out by employing the following measures:
    - a. Rack workload to facilitate drainage;
    - b. Move workload in and out of the degreaser at less than 3.3 m/minute (11 ft/minute);
    - c. Degrease the workload in the vapor zone until condensation ceases;
    - d. Allow workload to dry within the solvent cleaner until visually dry;
    - e. For manual operation, tip out any pools of solvent remaining on the workload before removing it from the solvent cleaner.
  14. A cleaner shall not be located where drafts are directed across the cleaner.
  15. For those cleaners equipped with water separators, no solvent shall be visually detectable in the water exiting the water separator.
  16. A lip exhaust system shall not be added to any solvent cleaner, unless it is vented to an emission control system. The lip exhaust shall be turned off when the degreaser is covered.
  17. Operators must receive training in proper solvent cleaning procedures.
- B.** Any person using a solvent cleaner must post a permanent, conspicuous label that summarizes proper operating procedures consistent with minimizing emissions of organic solvents.

**3.3 Equipment Requirements.** Any person using a solvent cleaner shall utilize the following:

- A.** An apparatus or cover that prevents the solvent from evaporating when not processing work in the solvent cleaner.

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1. For cold cleaning degreasers, if the solvent volatility is greater than 0.3 psia (at 100 degrees Fahrenheit), the solvent is agitated, or heated, the cover should be a sliding, rolling or guillotine (bi-parting) type that can be opened and closed easily with one hand or foot. Covers for larger degreasers may require mechanical assistance, by spring loading, counterweighting or powered systems.
  2. For open-top vapor degreasers, the cover should be a sliding, rolling or guillotine (bi-parting) type that can be opened and closed easily without disturbing the vapor zone.
  3. For conveyORIZED degreasers, a cover shall be provided for closing off the entrance and exit during shutdown hours.
  4. If the solvent cleaner is equipped with a lip exhaust, the cover shall be located below the lip exhaust. The lip exhaust shall be turned off when the solvent cleaner is covered. As of (the effective date of this Section), a lip exhaust system shall not be added to any solvent cleaner unless it is vented to an ECS.
  5. Equipment covers and dipping or rotating baskets must be constructed of nonporous or nonabsorbent material. Covers must form a tight seal with the sides of the solvent cleaner and have no gaps or holes.
- B.** A facility for draining cleaned parts such that the drained solvent is returned to the container.

#### **4.0 COLD CLEANING OPERATIONS**

**4.1 Equipment Specifications for Cold Cleaning Operations.** The owner or operator of a cold cleaning degreaser shall comply with the following applicable equipment specifications:

- A.** The cleaner shall be equipped with an internal drainage basket so that parts are enclosed under the cover while draining if the solvent true vapor pressure is greater than 4.3 kPa (32 mm Hg or 0.6 psi) measured at one hundred (100) degrees Fahrenheit (thirty-eight (38) degrees Celsius) by ASTM D2879-92.
- B.** If the solvent true vapor pressure is greater than 4.3 kPa (32 mm Hg or 0.6 psi) measured at one hundred (100) degrees Fahrenheit (thirty-eight (38) degrees Celsius) by ASTM D2879-92 or if the solvent is heated above one

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hundred twenty (120) degrees Fahrenheit (fifty (50) degrees Celsius), one of the following control measures shall be implemented:

1. Freeboard height that gives a freeboard ratio greater than or equal to 0.7;
  2. Water cover at least 2.54 centimeters (1 inch) in depth (solvent shall be insoluble in and heavier than water); or
  3. Another system of equivalent control (as determined by the test methods in section 9.2), such as a refrigerated chiller or a carbon adsorber, approved by the Department.
- C. The height of the solvent shall not exceed the manufacturer’s fill-line for the machine.

## 5.0 OPEN-TOP VAPOR DEGREASERS

### 5.1 Equipment Specifications.

- A. The owner or operator of an open-top vapor degreaser shall comply with the following applicable equipment specifications:
1. The open-top vapor degreaser shall be equipped with a baffle on the windward side of the open-top vapor degreaser;
  2. The open-top degreaser shall be equipped with the following safety switches:
    - a. A condenser coolant flow and high level thermostat switch that shuts off the sump heat if the condenser coolant is either not circulating or is too warm;
    - b. A spray safety switch that shuts off the spray pump if the vapor level drops more than ten (10) cm (4 in) below the lowest condensing coil;
    - c. A vapor level control thermostat that shuts off the sump heat when the vapor level rises above the recommended level;
    - d. A solvent level control; and
    - e. A sump thermostat.

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3. One of the following control measures shall be implemented:
- a. Freeboard ratio greater than or equal to 0.75 and, if the open-top vapor degreaser opening is greater than 1 m<sup>2</sup> (10.8 ft<sup>2</sup>), a powered (motorized) cover;
  - b. Refrigerated chiller with a chilled air blanket temperature no greater than thirty (30) percent of the solvent=s boiling point in degrees Fahrenheit measured at the centroid of the open-top vapor degreaser at the coldest point;
  - c. Enclosed design (cover or door opens only when the dry part to be cleaned is actually entering or exiting the open-top vapor degreaser);
  - d. Carbon adsorption system, with ventilation greater than or equal to fifteen (15) cubic meters per minute per square meter (m<sup>3</sup>/min/m<sup>2</sup>) (fifty (50) cubic feet per minute per square foot [cfm/ft<sup>2</sup>]) of air/solvent interface (when cover is open), and exhausting less than twenty-five (25) parts per million (ppm) of solvent averaged over one complete adsorption cycle, or twenty-four (24) hours, whichever is less; or
  - e. A control system, such as a thermal or catalytic incinerator, demonstrated to have a control efficiency equivalent to or greater than the control measures listed in the above paragraphs (as determined by the test methods in section 9.2) and approved by the Department.

**5.2 OPERATING STANDARDS:** The owner or operator of an open-top vapor degreaser shall comply with the following applicable operating standards:

- A. Workloads shall not occupy more than half of the degreaser’s evaporative surface area.
- B. Spray shall be conducted within the vapor zone.
- C. The vapor level shall not drop to more than ten (10) cm (4 in) below the lowest condensing coil.
- D. Workplace fans shall not be used near the open-top vapor degreaser opening and the exhaust ventilation shall not exceed twenty (20) m<sup>3</sup>/min/m<sup>3</sup> (65 cfm/ft<sup>2</sup>);

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- E. When starting the degreaser, the cooling system shall be turned on before, or simultaneously with, the sump heater.
- F. When shutting down the degreaser, the sump heater shall be turned off before or simultaneously with the cooling system.
- G. The degreaser shall be covered whenever the cooling system is off.

## 6.0 CONVEYORIZED DEGREASERS

**6.1 EQUIPMENT SPECIFICATIONS:** Any person who owns or operates a conveyORIZED degreaser shall comply with the following requirements:

- A. The conveyORIZED degreaser shall be equipped with a drying tunnel or rotating (tumbling) basket sufficient to prevent cleaned parts from carrying out solvent liquid or vapor.
- B. Downtime covers shall be provided for closing off the entrance and exit at all times when the conveyors and exhausts are not being operated.
- C. A conveyORIZED degreaser shall be fully enclosed except for entrance and exit portals.
- D. The machine shall have a freeboard ratio greater than or equal to 0.75.
- E. An owner and/or operator may meet the requirements of any one or combination of the requirements of subsection 6.1 by operating an ECS in accordance with Section 7.0 of this Section.

**6.2 OPERATING STANDARDS:** Any person that owns or operates a conveyORIZED degreaser shall comply with the following operating standards:

- A. Openings shall be minimized during operation so that entrances and exits silhouette workloads with an average clearance between the parts and the edge of the conveyORIZED degreaser opening of less than ten (10) cm (4 in) or less than ten (10) percent of the width of the opening.
- B. Workplace fans shall not be used near the conveyORIZED degreaser opening and the exhaust ventilation shall not exceed ten (10) m<sup>3</sup>/min/m<sup>2</sup> (65 cfm/ft<sup>2</sup>).
- C. Any installed downtime covers shall be placed over entrances and exits of the conveyORIZED degreaser at all times when the conveyors and exhausts are not being operated.

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- D. When starting the degreaser, the cooling system shall be turned on before, or simultaneously with, the sump heater.
- E. When shutting down the degreaser, the sump heater shall be turned off before, or simultaneously with, the cooling system.

## 7.0 EMISSIONS CONTROL REQUIREMENTS

### 7.1 Operation and Maintenance Plan Required for ECS.

- A. Existing ECS. The owner or operator of a solvent cleaning operation in operation on or after November 1, 2004 shall submit an Operation and Maintenance Plan (O&M Plan) for emission control systems at the time the initial permit application is submitted to the Department for an operating permit. The O&M Plan shall describe the ECS monitoring devices and indicate temperatures, rates of flow, and other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained. The O&M Plan shall also describe the procedures to properly install and maintain these devices in calibration, in good working order and in operation.
- B. New ECS. If the owner or operator of a solvent cleaning operation intends to install a new ECS as the means of meeting the provisions of this Section, he or she shall notify the Department in writing within thirty (30) days of applicability. Such an ECS shall be in use within nine (9) months of the effective date of this Section. The O&M Plan required by paragraph A of this subsection shall be submitted to the Department for approval upon startup of the ECS.

### 7.2 Providing and Maintaining ECS Monitoring Devices.

Any person incinerating, adsorbing, or otherwise processing VOC emissions from a solvent cleaning operation shall provide, maintain and operate ECS monitoring devices, as indicated in the facility's O&M Plan.

## 8.0 MONITORING AND RECORDS

- 8.1 Reporting - Initial Compliance Certification. By no later than May 1, 2006, or upon startup of a new solvent cleaner or new ECS used to comply with this Section, the owner or operator shall provide to the Department an initial compliance certification, pursuant to the requirements of subsection 9.1.A. Owners or operators of solvent cleaners that are still in operation five (5) years after the date from which the initial compliance certification was provided to the

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Department shall provide an updated compliance certification within thirty (30) days of the five-year date.

**8.2 Recordkeeping.** Any person subject to the requirements of this Section shall comply with the following recordkeeping requirements. Records shall be retained for five (5) years and shall be made available to the Director upon request.

- A. Current List of Solvents. Maintain a current list of cleaning-solvents being utilized and state the VOC-content of each in pounds VOC per gallon of material or grams per liter of material.
- B. Usage Records.
  - 1. Monthly Usage Records. Maintain monthly records of the amount of cleaning-solvent used. Records of the amount of cleaning solvent used shall be updated by the last day of the month for the previous month.
  - 2. Grouping by VOC Content. For purposes of recording usage, an operator may give cleaning-solvents of similar VOC content a single group-name, distinct from any product names in the group. The total usage of all the products in that group are then recorded under just one name. (In such a case, the operator must also keep a separate list that identifies the product names of the particular solvents included under the group name). To the group name shall be assigned the highest VOC content among the members of that group, rounded to the nearest 10<sup>th</sup> of a pound of VOC per gallon of material, or to the nearest gram VOC per liter of material.
- C. ECS Records. Any person using an add-on emission control system as a means of complying with the provisions in subsections 4.1, 5.1, or 6.1 shall maintain daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the emission control system during periods of emission producing activities. Key system operating parameters are those necessary to ensure compliance with VOC limits. The parameters may include, but are not limited to, temperatures, pressures, and flow rates.

## 9.0 COMPLIANCE AND TEST METHODS

### 9.1 Compliance Determination.

- A. Equipment Standards. Upon startup of a new solvent cleaner, replacement of an existing solvent cleaner with one of a different model, changing the



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control device used on an existing solvent cleaner, or upon request by the Department, the owner of the solvent cleaner shall perform tests and submit to the Department a compliance certification which contains the results of all tests and calculations necessary to demonstrate that the solvent cleaner will be in compliance with the applicable equipment standards.

- B.** Safety Switches. In addition to the monitoring requirement set forth in the requisite O&M Plan, safety switches must be tested semiannually.

**9.2** **Test Methods.** Compliance with the emission standards in this Section shall be determined by applying the following test methods, which are set forth in 40 C.F.R. Part 60, Appendix A (adopted as of [date of proposed rule], and no future additions or amendments, and incorporated herein by reference), the ASTM methods, or as indicated. [When more than one test method is permitted for a determination, an exceedance of the limits established in this Section determined by any of the applicable test methods constitutes a violation of this Section.]

- A.** EPA Methods 1-4 to determine flow rates.
- B.** EPA Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) and its submethods (40 C.F.R. Part 60, Appendix A).
- C.** EPA Method 25 (“Determination of Total Gaseous Nonmethane Organic Emissions as Carbon”) and its submethods (40 C.F.R. Part 60, Appendix A).
- D.** EPA Method 25A (“Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer”) or 25B (“Determination of Total Gaseous Organic Concentration Using a Non-Dispersive Infrared Analyzer”) (40 C.F.R. Part 60, Appendix A).
- E.** EPA Test Method 204 (“Criteria for and Verification of a Permanent or Temporary Total Enclosure”), 204a, 204b, 204c, 204d, 204e, and 204f (40 C.F.R. Part 51, Appendix M).
- F.** California’s Bay Area Air Quality Management District (BAAQMD) Method 31, “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings.”
- G.** California’s South Coast Air Quality Management District (SCAQMD) Method 313-91.
- H.** ASTM D2879-92 for measuring solvent true vapor pressure.

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- I. The control equipment efficiency of an emission control system as specified in 40 C.F.R. Part 60, Appendix A, subsection (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 EPA 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. EPA Method 18, or California Air Resources Board (CARB) Method 422 shall be used to determine emissions of exempt compounds.