

SAN LUIS OBISPO COUNTY AIR POLLUTION CONTROL DISTRICT

RULE 416 - DEGREASING OPERATIONS*(Adopted 6/18/79)*

- A.** A person shall not use photochemically reactive solvent, as defined in Rule 407.A.1.j, in surface cleaning or degreasing operations unless the emission of organic materials into the atmosphere is reduced by at least 85 percent by weight.
- B.** Effective January 1, 1980, a person who employs solvent metal cleaning (degreasing) shall utilize a device for such cleaning, which includes the following equipment:
1. A container for the solvent and articles being cleaned.
 2. An apparatus or cover which prevents the solvent from evaporating when not processing work in the degreaser.
 - a. For cold solvent cleaning, if the vapor pressure of the solvent is greater than 15 mm of mercury (0.3 psi) measured at 38°C (100°F), or if the solvent is heated above 50°C (122°F), or if the solvent is agitated, then the cover must be designed so that it can be easily operated with one hand.
 - b. For open-top vapor degreasers, the cover shall be designed such that it can be opened and closed easily without disturbing the vapor zone.
 - c. For conveyORIZED degreasers, covers shall be provided for closing off the entrance and exit during shutdown.
 3. A facility for draining cleaned parts such that the drained solvent is returned to the container.
 4. A permanent, conspicuous label, which lists each of the applicable operating requirements, appropriate for the type of cleaning operation being used, contained in Section C.
 5. For cold solvent cleaning, if the vapor pressure of the solvent is greater than 33 mm Hg or 0.6 psi at 38°C (100°F), or if the solvent is heated above 50°C (122°F), then one of the following control devices shall be used:
 - a. A freeboard such that the freeboard ratio is greater than or equal to 0.75;
 - b. A water cover if the solvent is insoluble in and heavier than water; or
 - c. Any other system of equivalent control demonstrated to be equivalent in emission control efficiency to the above, such as a refrigerated freeboard chiller or carbon adsorption system, and approved by the Control Officer.
 6. If open-top vapor degreasing or conveyORIZED vapor degreasing are employed, then the following equipment shall be utilized:
 - a. All of the following safety devices:
 1. A device which shuts off the sump heat if either the condenser coolant stops circulating or becomes warmer than specified.
 2. For degreasers of the spray type, a device (such as a temperature sensor) which prevents the spray pump operation unless the solvent vapor level is at the design operating level; and
 3. A device (of the manual reset type) which shuts off the sump heat if the solvent vapor level rises above the design operating level.
 - b. One of the following or a combination of the following major control devices:
 1. A freeboard such that the freeboard ratio is greater than or equal to 0.75;

2. A refrigerated freeboard chiller which achieves sufficient cooling capacity to maintain the vapor level at the design operating level;
 3. A carbon adsorption system which ventilates the air-vapor interface at a minimum rate of 15 cubic meters per minute per square meter (50 cfm per square foot), but not greater than 20 cubic meters per minute per square meter (65 cfm per square foot), and with with a control efficiency of 95 percent of the solvent vapors entering the carbon adsorber;
 4. Any other system demonstrated to be equivalent in emission control efficiency to the above, and approved by the Control Officer.
1. For conveyORIZED vapor degreasers, both of the following control devices shall be utilized:
 - a. Either a drying tunnel, or another means such as a rotating basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor; and
 - b. Minimized openings: entrances and exits should silhouette work loads so that the average clearance between parts and the edge of the degreaser opening is either less than 10 cm or less than 10 percent of the width of the opening.

C. Effective January 1, 1980, a person who employs solvent metal cleaning (degreasing) must conform to the following operating requirements:

1. The degreasing equipment and emission control equipment must be operated and maintained in proper working order.
2. A person shall not allow any solvent to leak from any portion of the degreasing equipment.
3. A person shall not store or dispose of any solvent, including waste solvent, in such a manner as will cause or allow its evaporation into the atmosphere.
4. After distillation recovery of waste solvent, solvent residues shall not contain more than 20 percent solvent by weight.
5. A person shall not remove or open any device designed to cover the solvent unless processing work in the degreaser or performing maintenance on the degreaser.
 - a. This section shall not apply to a vapor degreaser utilizing a refrigerated freeboard chiller, meeting the requirement of Section B.6.b.2, while the chiller is in effective operation.
6. For the cold solvent cleaning, a person shall drain cleaned parts for at least 15 seconds after cleaning or until dripping ceases.
7. If a solvent flow is utilized, then a person shall use only a continuous, fluid stream (not a fine, atomized, or shower type spray) and the pressure shall be such that it does not cause liquid solvent to splash outside of the solvent container.
 - . This section shall not apply to a vapor degreaser where the solvent flow is below the vapor-air interface.
8. Solvent agitation, where necessary, shall be achieved through pump recirculation, by means of a mixer, or by ultrasonics.
9. For open-top vapor degreasers, a person shall minimize solvent carry-out by the following measures:
 - a. Rack parts to facilitate drainage,
 - b. Move parts in and out of the degreaser at less than 3.3 meters per minute (10 feet per minute),
 - c. Degrease the work load in the vapor zone at least 30 seconds or until condensation ceases, and
 - d. Allow parts to dry within the degreaser for 30 seconds or until the exterior surface of the parts becomes visually dry.
10. For conveyORIZED degreasers, a person shall minimize solvent carry-out by the following measures:

- a. Rack parts to facilitate drainage, and
 - b. Maintain vertical conveyor speed at less than 3.3 meters per minute (10 feet per minute).
11. For open-top vapor degreasers:
- a. Do not degrease porous or absorbent materials such as cloth, leather, wood, or rope; and
 - b. Do not spray above the vapor level.

D. EXEMPTIONS

1. The provisions of Sections B and C of this Rule shall not apply to the cleaning of materials by wipe cleaning.
2. The provisions of Section B.6.b shall not apply to the following:
 - a. Open-top vapor degreasers which have a vapor-air interface less than one square meter (10.8 square feet).
 - b. Conveyorized vapor degreasers which have a vapor-air interface area less than two square meters (21.5 square feet).
3. The provisions of paragraph B.5 shall not apply to cold solvent degreaser which have a vapor-air interface area less than 0.5 square meters (5.4 square feet).

E. DEFINITIONS

For the purposes of this Rule:

1. "Cold cleaner": Means any batch loaded, non-boiling solvent degreaser.
2. "Conveyorized degreaser": Means any continuously loaded conveyorized solvent degreaser, either boiling or non-boiling.
3. "Freeboard height":
 - a. For cold cleaning tanks, freeboard height means the distance from the top of the solvent or solvent drain to the top of the tank.
 - b. For vapor degreasing tanks, freeboard height means the distance from the solvent vapor-air interface to the top of the basic degreaser tank.
4. "Freeboard ratio": Is defined as the freeboard height divided by the width of the degreaser.
5. "Open-top vapor degreaser": Means any batch loaded, boiling solvent degreaser.
6. "Volatile organic compound": Means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and methane that has a vapor pressure greater than 0.1 mm of Hg at standard conditions.
7. "Wipe cleaning": Is defined as that method of cleaning which utilized a material such as a rag wetted with a solvent, coupled with a physical rubbing process to remove contaminants from metal surfaces.