

RULE 4662 -- ORGANIC SOLVENT DEGREASING OPERATIONS

(Adopted April 11, 1991) (Amended September 19, 1991; Amended December 17, 1992; Amended April 19, 2001)

1.0 Purpose

The purpose of this rule is to limit VOC and hazardous air pollutant emissions from organic solvent degreasing operations and to provide the administrative requirements for recording and measuring emissions.

2.0 Applicability

The requirements of this rule shall apply to all organic solvent degreasing operations.

3.0 Definitions

3.1 Aerospace Vehicle Component: any raw material, partial or completed fabricated part, assembly of parts, or completed unit of any aircraft, helicopter, missile, or space vehicle, including mockups and prototypes.

3.2 Aerospace Vehicle: the completed unit of any aircraft, helicopter, missile or space vehicle.

3.3 Airless Cleaning System: a degreaser that is automatically operated and seals at an absolute internal pressure of 0.02 psia 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.

3.4 Air-tight Cleaning System: a degreaser that is automatically operated and seals at a differential pressure no greater than 0.5 psig during all cleaning and drying operations.

3.5 Automated Parts Handling System: a mechanical device, such as a hoist or a conveyer, that carries all parts and parts baskets, at a controlled speed, from the point of initial loading of soiled or wet parts through the point of removal of the cleaned or dried parts.

3.6 Batch-loaded: an operation in which any material is placed in a non-conveyorized container for cleaning.

3.7 Cold Cleaner: any non-boiling solvent degreaser with an air-solvent interface.

3.8 Condenser Equipment: any equipment, such as refrigerated or non-refrigerated freeboard chillers, condenser coils, or water jackets, used to condense solvent vapor in a vapor degreaser.

- 3.9 Condenser Flow Switch: a safety switch which shuts off sump heat if condenser water fails to circulate or if condenser water temperature rises above the designated operating temperature.
- 3.10 Conveyorized Degreaser: any continuously loaded degreaser, with either boiling or non-boiling solvent. Conveyorized cold cleaners and conveyorized vapor cleaners shall be considered conveyorized degreasers.
- 3.11 Degreaser: a tank, tray, drum, or other container in which objects to be cleaned are exposed to a solvent or solvent vapor, in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment.
- 3.12 Electrical Components: the internal components such as wires, windings, stators, rotors, magnets, contacts, relays, energizers, and connections in an apparatus that generates or transmits electrical energy including generators, transformers, and electric motors.
- 3.13 Electronic Components: the portions 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 cabinet in which the components are housed.
- 3.14 Flight Critical Parts: any aerospace vehicle component, the failure of which, during any operating condition, could cause loss of the aircraft or one of its major components, loss of control, unintentional release of, or inability to release, any armament store, failure of weapon installation components, or which may cause significant personnel injury during launch, recovery, flight escape, survival or rescue.
- 3.15 Freeboard Height:
- 3.15.1 For cold cleaning degreasers, the distance from the top of the solvent or solvent drain to the top of the degreaser based on inside tank dimensions.
- 3.15.2 For open-top vapor degreasing tanks, the distance from the solvent air-vapor interface to the top of the basic degreaser tank, based on inside tank dimensions.
- 3.15.3 For conveyorized degreasers, the distance from either the air-solvent or air-vapor interface to the top of the degreaser, based on inside tank dimensions.

- 3.16 Freeboard Ratio: the freeboard height divided by the smaller of the inside length or the inside width of the degreaser.
- 3.17 High 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.
- 3.18 Lip Exhaust: a device installed at the top of the opening of a degreaser that draws in air and solvent vapor from the freeboard area and ducts the air and vapor away from the solvent cleaning area.
- 3.19 Make-up Solvent: that solvent which is added to a degreaser operation to replace solvent lost through evaporation, carryout, splashing, leakage, or disposal.
- 3.20 Non-halogenated Solvent: a solvent that does not contain methylene chloride, perchloroethylene, trichloroethylene, carbon tetrachloride, 1,1,1, trichloroethane, chloroform or any combination of these solvents in a total concentration greater than five percent by weight.
- 3.21 Open-top Vapor Degreaser: any batch loaded, boiling solvent degreaser.
- 3.22 Organic Solvent Degreasing Operation: any cleaning activities which occur within a degreaser. Cleaning of ink, coating, or adhesive application equipment, and stripping of coatings are not considered organic solvent degreasing operations.
- 3.23 Perimeter Trough: a receptacle located below the primary condenser that conveys condensed solvent and atmospheric moisture to a water separator.
- 3.24 Primary Condenser: a series of cooling coils on the inner perimeter walls of a vapor degreaser through which a chilled substance is circulated to provide continuous condensation of rinsing solvent vapors, thereby creating a concentrated solvent vapor zone.
- 3.25 Refrigerated Freeboard Chiller: 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.
- 3.26 Remote Reservoir: a liquid solvent tank which is completely enclosed except for a single solvent return opening no larger than 15 in² which allows used solvent to drain into it from a separate solvent sink or work area and which is not accessible for soaking parts.

- 3.27 Solvent: any liquid containing an organic compound or combination of organic compounds, which are used as diluents, thinners, solvents, viscosity reducers, cleaning agents, or for other similar uses. These liquids are principally derived from petroleum and include petroleum distillates, chlorinated hydrocarbons, chlorofluorocarbons, ketones, and alcohols. Solutions, emulsions, and dispersions of water and soap, or water and detergent, are not organic solvents. Soaps and detergents are water-based surfactants.
- 3.28 Space Vehicle: a vehicle designed to travel beyond the earth's atmosphere.
- 3.29 Spray Pump Safety Switch: a safety switch, which cuts off the pump of the spray applicator if the vapor level drops below a specified level.
- 3.30 Stripping: the removal of cured coatings, cured inks, or cured adhesives.
- 3.31 Superheated Vapor Zone: a region located within the vapor zone of a degreaser in which solvent vapors are heated above the solvent's boiling point.
- 3.32 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 center of the air-vapor interface.
- 3.33 Ultrasonic: the enhancement of the cleaning process by vibrating the solvent with high frequency sound waves, causing implosion of microscopic vapor cavities within the liquid solvent.
- 3.34 Volatile Organic Compound (VOC): as defined in Rule 1020 (Definitions).
- 3.35 Wipe Cleaning: a method of cleaning which utilizes a cloth, cotton swab or other material, wetted with a solvent, which is physically rubbed on the surface to be degreased.

4.0 Exemptions

- 4.1 The provisions of this rule do not apply to cleaning outside a degreaser.
- 4.2 The provisions of this rule shall not apply to any degreaser which:
 - 4.2.1 uses unheated non-halogenated solvent, and
 - 4.2.2 is covered except when parts are being added to, removed from, or handled in the solvent bath, and
 - 4.2.3 has an open top surface area of less than 1.0 square foot, or with a capacity of less than 2.0 gallons, and

4.2.4 has a solvent usage, the difference between the amount of solvent at the end of the recordkeeping period and the total of the amount of solvent at the beginning of the recordkeeping period plus the amount of solvent added to the device during the recordkeeping period, of less than five (5.0) gallons per calendar month, and

4.2.5 is used only for the following cleaning applications:

4.2.5.1 electrical;

4.2.5.2 high precision optics;

4.2.5.3 electronic applications;

4.2.5.4 aerospace and military applications for the cleaning of solar cells, laser hardware, fluid system, and space vehicle components;

4.2.5.5 components used solely in research and development programs and laboratory tests in quality assurance laboratories.

4.3 The provisions of this rule shall not apply to one degreaser per building, which uses unheated, non-halogenated solvent exclusively, and has an open top surface area of less than 1.0 square foot and a capacity of less than 2.0 gallons, provided the degreaser is covered except when parts are being added to, removed from, or handled in the solvent bath.

4.4 Until April 19, 2006 the provision in sections 5.1.2.1.1 and 5.2.1 shall not apply for degreasers used exclusively for cleaning flight critical parts using unheated non-halogenated solvents. A list of parts deemed flight critical parts shall be provided to the APCO and EPA for review and approval. All other operational requirements in Sections 5.1 and 5.2 shall continue to apply.

5.0 Requirements

5.1 General

5.1.1 General operating requirements for all cold cleaner, open-top vapor, conveyORIZED degreasing and airless/airtight cleaning equipment. The owner or operator shall:

5.1.1.1 operate and maintain the degreaser equipment and emission control equipment in proper working order;

- 5.1.1.2 not remove or open any device designed to cover the solvent unless processing work in the degreaser or performing maintenance on the degreaser;
- 5.1.1.3 not degrease porous or absorbent materials such as cloth, leather, wood, or rope;
- 5.1.1.4 upon detection of a solvent leak, repair the solvent leak immediately, or shut down and drain the degreaser;
- 5.1.1.5 use only a continuous fluid stream (not a fine, atomized, fan, or shower type spray) at a pressure which does not cause liquid solvent to splash outside of the solvent container, if a solvent flow is utilized;
- 5.1.1.6 only achieve solvent agitation, where necessary, through pump circulation or by means of a mixer or ultrasonics. Air agitation shall not be utilized;
- 5.1.1.7 not store or dispose of any solvent, including waste and solvent residues such a manner as will cause or allow its evaporation into the atmosphere; this section shall expire upon adoption of Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal);
- 5.1.1.8 minimize solvent carryout by employing the following measures:
 - 5.1.1.8.1 rack parts to allow complete drainage;
 - 5.1.1.8.2 tip or rotate out any pools of solvent on the cleaned parts before removal; and
 - 5.1.1.8.3 allow parts to dry within the degreaser until visually dry.
- 5.1.2 Cold cleaner, open-top vapor, and conveyORIZED degreasing equipment shall be equipped with:
 - 5.1.2.1 a freeboard such that the freeboard ratio is at least 0.75.
 - 5.1.2.1.1 Effective on and after October 19, 2002, the freeboard ratio shall be at least 1.0;
 - 5.1.2.2 a container (degreaser) for the solvent and the articles being cleaned;

- 5.1.2.3 an apparatus or cover which prevents the solvent from evaporating when not processing work in the degreaser;
- 5.1.2.4 a facility for draining cleaned parts such that the drained solvent is returned to the container;
- 5.1.2.5 a permanent, conspicuous label posted on or near the degreaser which lists each of the operating requirements in Section 5.1.1 and Sections 5.2.1, 5.3.1, or 5.4.1, as applicable; and
- 5.1.2.6 a permanent conspicuous mark locating the maximum allowable solvent level, that conforms to the applicable freeboard requirements in Section 5.1.2.1.

5.2 Cold Cleaner Requirements

Any person who operates a cold cleaner device shall conform to the following requirements:

- 5.2.1 Effective October 19, 2002, cold cleaners shall exclusively use a non-halogenated cleaning material with a VOC content of 50 grams per liter or less, as used. Except for degreasers subject to section 4.4, section 5.1, and sections 5.2.2 through 5.2.5 shall no longer be applicable on and after October 19, 2002.
- 5.2.2 General operating requirements:
 - 5.2.2.1 Solvent spraying shall be done at least four (4) inches below the top of the degreaser.
 - 5.2.2.2 The owner or operator shall ensure that, when the cover is open, the cold cleaning machine is not exposed to drafts greater than 132 feet per minute, as measured between 3.3 and 6.6 feet upwind and at the same elevation as the tank lip.
- 5.2.3 Cold cleaners, except remote reservoir cold cleaners, shall be equipped with the following:
 - 5.2.3.1 A cover designed so that it can be opened and closed easily with one hand.
 - 5.2.3.2 An internal drainage facility, so that parts are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

- 5.2.4 Cold cleaners, except remote reservoir cold cleaners, shall not operate without one of the following control devices:
 - 5.2.4.1 a water cover if the solvent is insoluble in and heavier than water;
or
 - 5.2.4.2 any other system of control demonstrated to have emission control efficiency equivalent to 85 percent overall control.
- 5.2.5 Remote reservoir cold cleaners shall be equipped with the following:
 - 5.2.5.1 a cover for the drain when no work is being processed in the degreaser
 - 5.2.5.2 a freeboard height of at least six (6) inches.
 - 5.2.5.3 a sink-like work area for draining cleaned parts, which is sloped sufficiently towards the drain to preclude pooling of solvent.

5.3 Open-Top Vapor Degreaser

In addition to the requirements of Section 5.1, any person who operates an open-top vapor degreaser shall also comply with the following requirements:

- 5.3.1 General operating requirements:
 - 5.3.1.1 work loads shall not occupy more than half of the degreaser's open top area;
 - 5.3.1.2 solvent spraying shall be done at least four (4) inches below the top of the vapor layer;
 - 5.3.1.3 water shall not be visually detectable in the solvent returning from the water separator to the solvent cleaner;
 - 5.3.1.4 for open-top vapor degreasers equipped with a lip exhaust, the exhaust shall be turned off when the degreaser is covered;
 - 5.3.1.5 if the unit is equipped with a refrigerated freeboard chiller and/or a primary condenser, the following procedures shall be followed:
 - 5.3.1.5.1 when starting up the degreaser, the cooling system shall be turned on before, or simultaneously with, the sump heater; and

- 5.3.1.5.2 when shutting down the degreaser, the sump heater shall be turned off before, or simultaneously with, the cooling system;
 - 5.3.1.6 exhaust ventilation should not exceed 65 cfm/ft² of degreaser open area, unless necessary to meet OSHA requirements. Ventilation fans shall not be positioned in such a way to disturb the vapor zone;
 - 5.3.1.7 the vertical speed of a powered hoist for an open-top vapor degreaser, shall be not more than 2.2 inches/sec when moving parts in and out of the degreaser; and
 - 5.3.1.8 the work load shall be degreased in the vapor zone until condensation ceases.
- 5.3.2 Open-top vapor degreasers shall be equipped with a cover designed such that it can be opened and closed easily without disturbing the vapor zone.
- 5.3.2.1 Effective on or after October 19, 2002, open-top vapor degreasers shall be equipped with:
 - 5.3.2.1.1 an automated parts handling system;
 - 5.3.2.1.2 primary condensing coils;
 - 5.3.2.1.3 a perimeter trough;
 - 5.3.2.1.4 a water separator;
 - 5.3.2.1.5 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 percent of the boiling point of the solvent, and;
 - 5.3.2.1.6 a superheated vapor zone.
- 5.3.3 Open-top vapor degreasers shall not operate without one (1) of the following or a combination of the following major control devices:
- 5.3.3.1 condenser equipment where the chilled air blanket temperature measured in degrees F at the coldest point on the vertical axis in the center of the degreaser shall be either no greater than 30 percent of the initial boiling point, measured in degrees F, of the solvent used, or 41°F;

- 5.3.3.2 enclosed design (cover or door opens only when the dry part is actually entering or exiting the degreaser);
 - 5.3.3.3 a carbon adsorption system which ventilates the air-vapor interface at a minimum rate of 50 cfm/ft² of degreaser opening, but not greater than 65 cfm/ft² of degreaser opening, unless required by OSHA standards, and exhausts less than 25 ppm of solvent by volume over a complete adsorption cycle, and with an overall capture and control efficiency of 85 percent; or
 - 5.3.3.4 any other system of emission control demonstrated to have an overall capture and control efficiency of at least 85 percent.
- 5.3.4 Open-top vapor degreasers shall include all of the following safety switches:
- 5.3.4.1 a condenser flow switch with a solvent temperature indicator, except where non-water refrigerant is used. The switch shall shut off the sump heat if either the condenser coolant stops circulating or becomes warmer than specified;
 - 5.3.4.2 a spray pump safety switch; and
 - 5.3.4.3 a manual reset vapor level thermostat with a solvent temperature indicator.

5.4 Conveyorized Solvent Degreaser

Any person who operates a conveyorized solvent degreaser shall also comply with the following requirements:

- 5.4.1 Effective on and after October 19, 2002, conveyorized cold cleaner operations shall exclusively use a non-halogenated cleaning material with a VOC content of 50 grams per liter or less as used. For conveyorized cold cleaners, section 5.1, and sections 5.4.2 through 5.4.5 shall no longer be applicable on and after October 19, 2002.
- 5.4.2 General operating requirements:
 - 5.4.2.1 exhaust ventilation should not exceed 65 cfm/ft² of degreaser opening, unless necessary to meet OSHA requirements. Ventilation fans shall not be positioned in such a way to disturb the vapor zone;

- 5.4.2.2 Covers shall be provided for closing off the entrance and exit during shutdown hours. A cover shall be placed over entrances and exits of conveyORIZED degreasers immediately after the conveyor and exhaust are shut down and removed just before they are started up;
 - 5.4.2.3 for degreasers with greater than 21.6 ft² air/vapor interface, a hood or enclosure with a delivery or ductwork to collect degreaser emissions, exhausting to a carbon adsorber or equivalent control device;
 - 5.4.2.4 the vertical speed of a powered hoist for conveyORIZED processes, shall be not more than 2.2 inches/sec when moving parts in and out of the degreaser; and
 - 5.4.2.5 the work load shall be decreased in the vapor zone until condensation ceases.
- 5.4.3 ConveyORIZED degreasers shall not be operated without one (1) of the following or a combination of the following major control devices:
- 5.4.3.1 condenser equipment where the chilled air blanket temperature measured in degrees F at the coldest point on the vertical axis in the center of the degreaser shall be either no greater than 30 percent of the initial boiling point, measured in degrees F, of the solvent used, or 41°F;
 - 5.4.3.2 a carbon adsorption system which ventilates the air-vapor interface at a minimum rate of 50 cfm/ft², but not greater than 65 cfm/ft², unless required by OSHA standards, and exhausts less than 25 ppm of solvent by volume over a complete adsorption cycle, and with an overall capture and control efficiency of 85% by weight; or
 - 5.4.3.3 any other system of emission control demonstrated to have an overall capture and control efficiency equivalent to 85%.
 - 5.4.3.4 Effective on or after October 19, 2002, conveyORIZED vapor degreasers shall be equipped with:
 - 5.4.3.4.1 an automated parts handling system;
 - 5.4.3.4.2 primary condensing coils;

- 5.4.3.4.3 a perimeter trough;
- 5.4.3.4.4 a water separator;
- 5.4.3.4.5 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 percent of the boiling point of the solvent, and;
- 5.4.3.4.6 a superheated vapor zone.

5.4.4 ConveyORIZED degreasers shall include both the following control devices:

- 5.4.4.1 a drying tunnel or other means, such as a rotating basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor; and
- 5.4.4.2 minimized opening: entrances and exits should silhouette the work loads so that the average clearance between parts and the edge of the degreaser opening is either less than four (4) inches or less than ten (10) percent of the width of the opening, whichever is less.

5.4.5 ConveyORIZED degreaser shall be equipped with all of the following safety switches:

- 5.4.5.1 a condenser flow switch with a solvent temperature indicator, except where non-water refrigerant is used;
- 5.4.5.2 a spray pump safety switch; and
- 5.4.5.3 a manual reset vapor level thermostat with a solvent temperature indicator.

5.5 Air-Tight or Airless Cleaning System Requirements

In lieu of meeting the requirements of Sections 5.2 and 5.3, any person may use an air-tight or airless batch cleaning system provided all the following requirements are met:

- 5.5.1 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.

- 5.5.2 All associated pressure relief devices shall not allow liquid solvents to drain out. Spills during solvent transfer shall be wiped up immediately and handled in accordance with Section 5.1.1.7.
- 5.5.3 A differential pressure gauge shall be installed to indicate the sealed chamber pressure.
- 5.6 In lieu of complying with Sections 5.1 through 5.5, an owner or operator may operate a degreaser exclusively using non-halogenated organic solvent that contains 50 grams of VOC per liter or less, as used.
- 5.7 The requirements of Sections 5.2.1 and 5.4.1 shall not apply to any person who installs and operates air pollution control equipment with an overall capture and control efficiency of at least 85 percent on a mass basis as determined in accordance with Section 6.2. The control equipment shall be under District permit. In no case shall compliance through the use of this section result in VOC emissions in excess of the VOC emissions, which would result from compliance with Sections 5.1, 5.2 and 5.4. The minimum required control efficiency of an emission control system at which an equivalent or greater level of VOC reduction will be achieved shall be calculated by using the following equation:

$$CE = \frac{1 - \frac{VOC_{LWc}}{VOC_{LWn,Max}}}{1 - \frac{VOC_{LWc}}{D_c}} \times \frac{1 - \frac{VOC_{LWn,Max}}{D_{n,Max}}}{1 - \frac{VOC_{LWc}}{D_c}} \times 100$$

Where: CE = Control Efficiency, percent

VOC_{LWc} = VOC Limit (g/l)

VOC_{LWn,Max} = Maximum VOC content of noncompliant solvent used in conjunction with a control device (g/l)

D_{n,Max} = Density of solvent, reducer, or thinner contained in the noncompliant solvent, containing the maximum VOC content of the multi-component solvent (g/l)

D_c = Density of corresponding solvent, reducer, or thinner used in the compliant solvent system (g/l)

6.0 Administrative Requirements

6.1 Recordkeeping

- 6.1.1 Any person subject to the requirements of this rule shall have solvent manufacturer specification sheets available for review. Any person operating a degreaser not subject to sections 5.2.1, 5.4.1 or 5.6, shall maintain records which show on a monthly basis, the following information for each degreaser:
- 6.1.1.1 type of degreaser;
 - 6.1.1.2 type of solvent and the VOC content of solvent, as used;
 - 6.1.1.3 the solvent initial boiling point;
 - 6.1.1.4 volume of solvent used, the difference in the amount of solvent from the beginning of the recordkeeping period to the end of the recordkeeping period; and
 - 6.1.1.5 the volume of make-up solvent added to degreaser during the recordkeeping period.
- 6.1.2 Each time waste solvent or waste solvent are removed from the facility, keep records confirming compliance with the acceptable disposal methods listed in Section 5.1.1.7. This section shall expire upon adoption of Rule 4663 (Organic Solvent Cleaning, Storage, and Disposal).
- 6.1.3 Effective and beginning on or after April 19, 2001, records shall be maintained for a minimum of five years and made available for inspection to the APCO upon request.
- 6.1.4 Any person using an add-on emission control system as a means of complying with the provisions in Section 5.7 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.

6.2 Test Methods

The following test methods shall apply to this rule:

- 6.2.1 Initial boiling point of solvent shall be determined by ASTM 1078.
- 6.2.2 Capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency", January 9, 1995. An equivalent alternate test method for determination of capture efficiency may be used provided it has been approved by the APCO, California Air Resources Board, and the U.S. Environmental Protection Agency.
- 6.2.3 The VOC content of organic solvents and organic materials shall be determined by EPA Method 24 or 24A (Determination of Volatile Matter Content, Water, Content, Density Volume Solids, and Weight Solids of Surface Coatings) or by SCAQMD Method 304 (Determination of Volatile Organic Compounds in Various Materials).
- 6.2.4 The VOC content of materials containing 50 g/l of VOC or less shall be determined by SCAQMD Method 313.
- 6.2.5 Analysis of halogenated exempt compounds shall be by ARB Method 432.
- 6.2.6 Determination of Emissions: Emissions of VOC shall be measured by EPA Method 25, 25a, or 25b, as applicable, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 422.
- 6.2.7 Exhaust ventilation rates shall be measured by EPA Method 2, 2a, 2c, or 2d, as applicable.

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