

(c) *Demonstration of compliance.* Unless otherwise set forth in this chapter, test methods and procedures used to monitor compliance with the emission requirements of this section are those specified in Chapter 139 (relating to sampling and testing).

(d) *Records.* The owner or operator of a facility or source subject to one or more of the VOC emission limitations and control requirements in this chapter shall keep records to demonstrate compliance with the applicable limitation or control requirement.

(1) The records shall provide sufficient data and calculations to clearly demonstrate that the applicable emission limitation or control requirement is met. Data or information required to determine compliance with an applicable limitation shall be recorded and maintained in a time frame consistent with the averaging period of the standard.

(2) The records shall be maintained onsite for 2 years, unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be made available to the Department on request.

(e) *Demonstration of exempt status.* The owner or operator of a facility or source claiming that the facility or source is exempt from the VOC control provisions of this chapter shall maintain records that clearly demonstrate to the Department that the facility or source is not subject to the VOC emission limitations or control requirements of this chapter.

**§ 129.63a. Control of VOC emissions from industrial cleaning solvents.**

(a) *Applicability.* This section applies to the owner and the operator of a facility at which an industrial cleaning solvent is used or applied in a cleaning activity at a cleaning unit operation, a work production-related work area or a part, product, tool, machinery, equipment, vessel, floor or wall.

(b) *Definitions.* The following words and terms, when used in this section, have the following meanings unless the context clearly indicates otherwise:

*Cleaning activity*—The use or application of an industrial cleaning solvent to remove a contaminant, such as an adhesive, ink, paint, dirt, soil, oil or grease, by wiping, flushing, brushing, soaking, dipping, spraying or a similar effort.

*Cleaning unit operation*—

(i) An operation at a facility that is a source of VOC emissions from a cleaning activity.

(ii) The term includes the following cleaning activities:

(A) Spray gun cleaning, including the spray gun, attached paint lines and other spray gun equipment used to apply a coating.

(B) Spray booth cleaning, including the interior surfaces of the booth and the equipment contained within the booth.

(C) Manufactured components cleaning as a step in a manufacturing process, including automobile bodies, furniture, sheet metal, glass windows, engine components, subassemblies, sheet metal panels, molded parts, electrical contacts, steel and copper components, tin-plated or silver-plated terminals, plastic parts, upholstered parts, circuit breaker cases, switch covers, threads and bolts.

(D) Parts cleaning, including applicator tips, brushes, machine parts, pumps, circuit boards, truck parts, engine blocks, gauges, cutoff steel, machined parts, tool dies, motors and assemblies, screws, oil guns, welded parts, bearings and filters.

(E) Equipment cleaning of a piece of production equipment in place to prevent cross-contamination or for maintenance purposes, including punch presses, electrical contacts on equipment, pump parts, packaging equipment, rollers, ink pans, carts, press frames and table tops.

(F) Line cleaning, including a pipe, hose or other line that conveys material like paint or resin, that is cleaned separately from a spray gun, tank or other process equipment.

(G) Floor cleaning in a production area of the facility.

(H) Tank cleaning, including a tank, mixing pot or process vessel and the attached lines.

(iii) The term does not include VOC emissions from the use or application of consumer products subject to Chapter 130, Subchapter B (relating to consumer products), including an institutional product or industrial and institutional product as defined in § 130.202 (relating to definitions) for cleaning offices, bathrooms or other areas that are not part of a cleaning unit operation or work production-related work area.

*Industrial cleaning solvent*—A product formulated with one or more regulated VOCs that is used in a cleaning activity for a cleaning unit operation.

*Regulated VOC*—An organic compound which participates in atmospheric photochemical reactions, that is, an organic compound other than those which the Administrator of the EPA designates in 40 CFR 51.100 (relating to definitions) as having negligible photochemical reactivity.

(c) *Exceptions and exemptions.*

(1) This section does not apply to all of the following:

(i) An owner or operator of a cleaning unit operation subject to § 129.63 (relating to degreasing operations) or 40 CFR Part 63, Subpart T (relating to National emission standards for halogenated solvent cleaning).

(ii) An owner or operator of a cleaning unit operation associated with a following category:

- (A) Aerospace manufacturing and rework operations.
- (B) Architectural coatings.
- (C) Automobile and light-duty truck assembly coatings.
- (D) Fabric coating.
- (E) Fiberglass boat manufacturing materials.
- (F) Flat wood paneling coatings.
- (G) Flexible packaging printing materials.
- (H) Graphic arts printing and coating operations.
- (I) Large appliance coatings.
- (J) Letterpress printing materials.
- (K) Lithographic printing materials.
- (L) Magnet wire coating operations.
- (M) Marine vessel coating.
- (N) Metal container, closure and coil coating.
- (O) Metal furniture coatings.
- (P) Miscellaneous metal parts coatings.

- (Q) Miscellaneous industrial adhesives.
- (R) Motor vehicle and mobile equipment coating operations.
- (S) Paper, film and foil coating.
- (T) Plastic parts coatings.
- (U) Polyester resin operations.
- (V) Semiconductor wafer fabrication operations.
- (W) Shipbuilding and repair coatings.
- (X) Wood furniture coatings.
- (Y) Wood products coating.
- (Z) Electrical and electronic components.
- (AA) Precision optics.
- (BB) Numismatic dies.
- (CC) Stripping of cured inks, coatings and adhesives.
- (DD) Cleaning of resin, coating, ink or adhesive mixing, molding and application equipment.
- (EE) Resin, coating, ink and adhesive manufacturing.
- (FF) Performance or quality assurance testing of coatings, inks or adhesives.
- (GG) Flexible and rigid disc manufacturing.
- (HH) Research and development laboratories.
- (II) Medical device manufacturing.
- (JJ) Pharmaceutical manufacturing.
- (KK) Janitorial cleaning.
- (LL) Digital printing.

(2) The VOC emission limitations in subsection (e) do not apply to the use or application of an industrial cleaning solvent by the owner or operator of a cleaning unit operation at a facility subject to subsection (a) under either of the following circumstances:

(i) The use or application of the industrial cleaning solvent is subject to a standard or specification required by the United States Department of Defense, Federal Aviation Administration or other Federal government entity. An owner or operator claiming this exemption shall maintain records in accordance with subsection (h)(2).

(ii) The use or application of the industrial cleaning solvent is associated with the cleaning of screen printing equipment and the industrial cleaning solvent used or applied has an as applied VOC content that does not exceed 4.2 pounds of VOC per gallon (lb VOC/gal) (500 grams of VOC per liter (g VOC/l)) of industrial cleaning solvent. An owner or operator claiming this exemption shall maintain records in accordance with subsection (h)(3).

(3) The VOC emission limitations in subsection (e) and the work practice requirements in subsection (f) do not apply to the owner or operator of a facility subject to subsection (a) if the total combined actual VOC emissions from all subject cleaning unit operations at the facility are less than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls. An owner or operator claiming this exemption shall maintain records in accordance with subsection (h)(4).

(d) *Existing RACT permit.* The requirements of this section supersede the requirements of a RACT permit issued to the owner or operator of a cleaning unit operation subject to this section prior to August 11, 2018,

under §§ 129.91—129.95 (relating to stationary sources of NO<sub>x</sub> and VOCs) to control, reduce or minimize VOCs from cleaning unit operation cleaning activities at the facility, except to the extent the RACT permit contains more stringent requirements.

(e) *Emissions limitations.* Beginning August 11, 2018, the owner or operator of a facility at which the total combined actual VOC emissions from all subject cleaning unit operations at the facility are equal to or greater than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, may not cause or permit the emission into the outdoor atmosphere of VOCs from an industrial cleaning solvent used or applied in a cleaning unit operation subject to this section at the facility, unless one of the following limitations is met:

(1) *Compliant solvents.* The industrial cleaning solvent meets one of the following VOC limits:

(i) A VOC content less than or equal to 0.42 lb VOC/gal (50 g VOC/l) as applied.

(ii) A VOC composite vapor pressure less than or equal to 8 mm mercury at 68°F (20°C) as applied.

(2) *VOC emissions capture system and add-on air pollution control device.* The weight of VOCs emitted to the atmosphere from cleaning unit operation cleaning activities is reduced through the use of vapor recovery or incineration or another method that is acceptable under § 129.51(a) (relating to general). The overall emission reduction of a control system, as determined by the test methods and procedures specified in Chapter 139 (relating to sampling and testing), may be no less than 85% or may be no less than the equivalent efficiency as calculated by the following equation, whichever is less stringent:

$$O = (1 - E/V) \times 100$$

Where:

O = The overall required control efficiency.

E = 0.42 lb VOC/gal or 50 g VOC/l.

V = The VOC content of the industrial cleaning solvent in lb VOC/gal or g VOC/l.

(f) *Work practice requirements for industrial cleaning solvents, used shop towels and waste materials.* The owner or operator of a facility subject to subsection (e) shall comply with all of the following work practices for industrial cleaning solvents and shop towels used in the cleaning unit operation cleaning activity:

(1) Store all VOC-containing industrial cleaning solvents, used shop towels and related waste materials in closed containers.

(2) Ensure that mixing and storage containers used for VOC-containing industrial cleaning solvents and related waste materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC-containing industrial cleaning solvents and related waste materials and clean up spills immediately.

(4) Convey VOC-containing industrial cleaning solvents and related waste materials from one location to another in closed containers or pipes.

(5) Minimize VOC emissions from cleaning of storage, mixing and conveying equipment.

(6) Minimize air circulation around cleaning unit operations.

(g) *Compliance demonstration.* The owner or operator of a cleaning unit operation subject to this section shall demonstrate compliance as follows:

(1) The owner or operator of a facility at which the total combined actual VOC emissions from all subject cleaning unit operations at the facility are equal to or greater than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, shall do either of the following:

(i) Ensure that industrial cleaning solvents used or applied in the subject cleaning unit operations at the facility meet the applicable emissions limitation in subsection (e)(1) and maintain records in accordance with subsection (h)(1)(i).

(ii) Use a VOC emissions capture system and an add-on air pollution control device that meets the VOC emission reduction requirement under subsection (e)(2), equip the add-on air pollution control device with the applicable monitoring equipment and maintain records in accordance with subsection (h)(1)(ii). All of the following apply:

(A) The monitoring equipment shall be installed, calibrated, operated and maintained according to manufacturer's specifications at all times when the add-on air pollution control device is operating.

(B) The add-on air pollution control device must be operating when the cleaning activity is occurring.

(2) The owner or operator of a cleaning unit operation subject to this section claiming exemption under:

(i) Subsection (c)(2)(i) shall maintain records in accordance with subsection (h)(2).

(ii) Subsection (c)(2)(ii) shall maintain records in accordance with subsection (h)(3).

(iii) Subsection (c)(3) shall maintain records in accordance with subsection (h)(4).

(3) The owner or operator of a cleaning unit operation subject to this section shall determine the VOC content of the industrial cleaning solvent as applied by conducting sampling and testing of the industrial cleaning solvent in accordance with the procedures and test methods specified in subsections (i) and (j) and Chapter 139.

(4) The owner or operator of a cleaning unit operation subject to paragraph (3) may use other test methods or documentation to demonstrate compliance with this section if approved in advance in writing by the Department and the EPA.

(h) *Recordkeeping and reporting requirements.* The owner or operator of a cleaning unit operation subject to this section shall comply with all of the following applicable recordkeeping and reporting requirements:

(1) The owner or operator of a facility at which the total combined actual VOC emissions from all subject cleaning unit operations at the facility are equal to or greater than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls, shall maintain all of the applicable records:

(i) For an owner or operator that complies with this section by using a complying industrial cleaning solvent under subsection (e)(1), records of all of the following parameters for each cleaning unit operation industrial cleaning solvent:

(A) The name and identification number.

(B) The weight percent of total volatiles, water and exempt solvents, as supplied.

(C) The VOC content or composite vapor pressure, as supplied. The composite vapor pressure as supplied shall be determined in accordance with subsections (i) and (j).

(D) The VOC content or composite vapor pressure, as applied. The composite vapor pressure as applied shall be determined in accordance with subsections (i) and (j).

(E) The volume used or applied on a monthly basis.

(ii) For an owner or operator that complies with this section through the use of a VOC emissions capture system and an add-on air pollution control device under subsection (e)(2), records sufficient to demonstrate all of the following:

(A) Sampling and testing conducted in accordance with Chapter 139 as required under subsection (e)(2).

(B) Calibration, operation and maintenance of the monitoring equipment installed under subsection (g)(1)(ii) in accordance with manufacturer's specifications.

(2) The owner or operator of a cleaning unit operation claiming exemption under subsection (c)(2)(i) shall maintain records of all of the following information for the exempt industrial cleaning solvent:

(i) A copy of the applicable standard or specification.

(ii) The VOC content or composite vapor pressure, as applied. The composite vapor pressure as applied shall be determined in accordance with subsections (i) and (j).

(iii) The volume used or applied monthly.

(3) The owner or operator of a screen printing equipment cleaning unit operation claiming exemption under subsection (c)(2)(ii) shall maintain records of all of the following information for the screen printing equipment industrial cleaning solvent:

(i) The name and identification number.

(ii) The VOC content or composite vapor pressure, as applied. The composite vapor pressure as applied shall be determined in accordance with subsections (i) and (j).

(iii) The volume used or applied monthly.

(4) The owner or operator of a facility claiming exemption under subsection (c)(3) shall maintain monthly records of the industrial cleaning solvents used or applied at the subject cleaning unit operations sufficient to demonstrate that the total combined actual VOC emissions from all subject cleaning unit operations at the facility are less than 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of controls.

(5) Records shall be maintained onsite for 2 years, unless a longer period is required under Chapter 127 (relating to construction, modification, reactivation and operation of sources) or a plan approval, operating permit, consent decree or order issued by the Department.

(6) Records shall be submitted to the Department in an acceptable format upon receipt of a written request from the Department.

(i) *Composite vapor pressure.* The composite vapor pressure of organic compounds in cleaning unit operation industrial cleaning solvents shall be determined by one or more of the following procedures:

(1) Quantifying the amount of each compound in the blend using gas chromatographic analysis, using one or more of the following methods:

(i) An appropriate and current ASTM test method with prior written approval from the Department and the EPA.

(ii) Another test method demonstrated to provide results that are acceptable for purposes of determining compliance with this section if prior approval is obtained in writing from the Department and the EPA.

(2) Calculating the composite vapor pressure using the following equation:

$$Pp_c = \frac{\sum_{i=1}^n (W_i) (VP_i)/Mw_i}{\frac{W_w}{Mw_w} + \sum_{e=1}^k W_e/Mw_e + \sum_{i=1}^n W_i/Mw_i}$$

Where:

$Pp_c$  = VOC composite partial pressure at 20°C, in mm mercury.

$W_i$  = Weight of the "i"th VOC compound, in grams, as determined by ASTM E260.

$W_w$  = Weight of water, in grams, as determined by ASTM D3792.

$W_e$  = Weight of the "e"th exempt compound, in grams, as determined by ASTM E260.

$Mw_i$  = Molecular weight of the "i"th VOC compound, in grams per g-mole, as given in chemical reference literature.

$Mw_w$  = Molecular weight of water, 18 grams per g-mole.

$Mw_e$  = Molecular weight of the "e"th exempt compound, in grams per g-mole, as given in chemical reference literature.

$VP_i$  = Vapor pressure of the "i"th VOC compound at 20°C, in mm mercury, as determined by subsection (j).

(3) Providing documentation from the manufacturer of the industrial cleaning solvent that indicates the composite vapor pressure. The documentation may include an MSDS, CPDS or other data certified by the manufacturer.

(j) *Vapor pressure of single component compound.* The vapor pressure of each single component compound in a cleaning unit operation industrial cleaning solvent shall be determined from one or more of the following:

(1) An appropriate and current ASTM test method with prior written approval from the Department and the EPA.

(2) The most recent edition of one or more of the following sources:

(i) *Vapour Pressures of Pure Substances*, Boublik, Elsevier Scientific Publishing Company.

(ii) *Perry's Chemical Engineers' Handbook*, Green and Perry, McGraw-Hill Book Company.

(iii) *CRC Handbook of Chemistry and Physics*, CRC Press.

(iv) *Lange's Handbook of Chemistry*, McGraw-Hill Book Company.

(3) Documentation provided by the manufacturer of the single component compound that indicates the vapor pressure of the single component compound. The documentation may include an MSDS, CPDS or other data certified by the manufacturer.

(k) *ASTM method references.* References to ASTM methods in this section pertain to test methods developed by ASTM International, 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, Pennsylvania 19428-2959, www.astm.org.

#### § 129.73. Aerospace manufacturing and rework.

Except as provided in paragraph (1), this section applies to the manufacture or rework of commercial, civil or military aerospace vehicles or components at any facility which has the potential to emit 25 tons per year of VOCs or more.

(1) This section does not apply to cleaning and coating of aerospace components and vehicles as follows:

(i) At any source conducting research and development for the research and development activities.

(ii) For quality control and laboratory testing.

(iii) For production of electronic parts and assemblies (except for cleaning and coating of completed assemblies).

(iv) For rework operations performed on antique aerospace vehicles or components.

(2) Paragraph (3) does not apply to cleaning and coating of aerospace components and vehicles in the following circumstances:

(i) The use of touchup, aerosol and Department of Defense "classified" coatings.

(ii) The coating of space vehicles.

(iii) At facilities that use separate formulations in volumes less than 50 gallons per year to a maximum exemption of 200 gallons per year of all the coatings in aggregate for these formulations.

(3) Beginning April 10, 1999, a person may not apply to aerospace vehicles or components, aerospace specialty coatings, primers, topcoats and chemical milling maskants including VOC-containing materials added to the original coating supplied by the manufacturer, that contain VOCs in excess of the limits specified in Table II.

(i) Aerospace coatings that meet the definitions of the specific coatings in Table II shall meet those allowable coating VOC limits.

(ii) All other aerospace primers, aerospace topcoats and chemical milling maskants are subject to the general coating VOC limits for aerospace primers, aerospace topcoats and aerospace chemical milling maskants.