

DRAFT PROPOSED RULEMAKING
Annex A
TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart C. PROTECTION OF NATURAL RESOURCES
ARTICLE III. AIR RESOURCES
CHAPTER 121. GENERAL PROVISIONS

§ 121.1. Definitions.

The definitions in section 3 of the act (35 P. S. § 4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

Cleaning solvent—A liquid material used for hand-wipe, spray gun or flush cleaning. The term includes solutions that contain VOCs.

* * * * *

CHAPTER 129. STANDARDS FOR SOURCES

SOURCES OF VOCs

§ 129.51. General.

(a) *Equivalency.* Compliance with §§ 129.52, 129.52a, 129.52b, 129.52c, 129.54—129.69, 129.71—129.73 and 129.77 may be achieved by alternative methods if the following exist:

(1) The alternative method is approved by the Department in an applicable plan approval or operating permit, or both.

(2) The resulting emissions are equal to or less than the emissions that would have been discharged by complying with the applicable emission limitation.

(3) Compliance by a method other than the use of a low VOC coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent, cleanup solvent, cleaning solution, fountain solution or ink which meets the applicable emission limitation in §§ 129.52, 129.52a, 129.52b, 129.52c, **129.63a**, 129.67, 129.67a, 129.67b, 129.73 and 129.77 shall be determined on the basis of equal volumes of solids.

(4) Capture efficiency testing and emissions testing are conducted in accordance with methods approved by the EPA.

(5) Adequate records are maintained to ensure enforceability.

(6) The alternative compliance method is incorporated into a plan approval or operating permit, or both, reviewed by the EPA, including the use of an air cleaning device to comply with § 129.52, § 129.52a, § 129.52b, § 129.52c, **§ 129.63a**, § 129.67, § 129.67a, § 129.67b, § 129.68(b)(2) and (c)(2), § 129.73 or § 129.77.

* * * * *

(*Editor's Note:* Section 129.63a is new and printed in regular type to enhance readability.)

§ 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 to remove a contaminant, including an adhesive, ink, paint, dirt, soil, oil or grease, from a cleaning unit operation or work production-related work area or from 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 formulated with one or more regulated VOCs to remove a contaminant, such as an adhesive, ink, paint, dirt, soil, oil or grease, from a substrate or from equipment used to apply a material by wiping, flushing, brushing, soaking, spraying or a similar effort.

Cleaning unit operation—An operation at a facility that is a source of VOC emissions from a cleaning activity.

- (i) The term includes the following:
 - (A) Spray gun cleaning.
 - (B) Spray booth cleaning.
 - (C) Large manufactured components cleaning.
 - (D) Parts cleaning.
 - (E) Equipment cleaning.
 - (F) Line cleaning.
 - (G) Floor cleaning.
 - (H) Tank cleaning.
 - (I) Small manufactured components cleaning.

(ii) The term does not include VOC emissions from the use or application of consumer products subject to §§ 130.201—130.471 (relating to Subchapter B, consumer products), including an institutional product or industrial and institutional (I&I) 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 used or applied to remove a contaminant such as an adhesive, ink, paint, dirt, soil, oil or grease.

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 the following:

(i) An owner or operator of a cleaning unit operation subject to § 129.63 (relating to degreasing operations) or 40 CFR 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 category listed below:

- (A) Aerospace coatings.
- (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.
- (X) Shipbuilding and repair coatings.
- (Y) Wood furniture coatings.
- (Z) Wood products coating.
- (AA) Electrical and electronic components.
- (BB) Precision optics.
- (CC) Numismatic dies.
- (DD) Stripping of cured inks, coatings and adhesives.
- (EE) Cleaning of resin, coating, ink or adhesive mixing, molding and application equipment.
- (FF) Resin, coating, ink and adhesive manufacturing.
- (GG) Performance or quality assurance testing of coatings, inks or adhesives.
- (HH) Flexible and rigid disc manufacturing.
- (II) Research and development laboratories.

(JJ) Medical device manufacturing.

(KK) Pharmaceutical manufacturing.

(LL) Janitorial cleaning.

(MM) Digital printing.

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

(i) The use or application of the noncomplying 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 noncomplying 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 of subsection (e) and the work practice requirements of 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 _____ (*Editor's Note:* The blank refers to the effective date of adoption of this proposed rulemaking.), under §§ 129.91—129.95 (relating to stationary sources of NO_x 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 _____ (*Editor's Note:* The blank refers to the effective date of adoption of this proposed rulemaking.), 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 pounds of VOC per gallon (lb VOC/gal) (50 grams of VOC per liter (g VOC/l)) of industrial cleaning solvent 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 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).

(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 the following 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 the following 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 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.

(D) The VOC content or composite vapor pressure, as applied.

(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 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 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.

(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 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.

(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 the following procedure:

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

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

(ii) Other test methods 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:

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

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.

M_{w_i} = Molecular weight of the “i”th VOC compound, in grams per g-mole, as given in chemical reference literature.

M_{w_w} = Molecular weight of water, 18 grams per g-mole.

M_{w_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 (n).

(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 both 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, New York.

(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.

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

(*Editor's Note:* Section 129.73 is amended to correct a numbering error in Table II (relating to allowable content of VOCs in aerospace coatings).)

§ 129.73. Aerospace manufacturing and rework.

* * * * *

(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.

TABLE II
Allowable Content of VOCs in Aerospace Coatings
[Allowable VOC Content]
Weight of VOC Per Volume of Coating (Minus Water and Exempt Solvents)

<i>COATING TYPE</i>	<i>LIMIT</i>	
	<i>POUNDS</i>	<i>GRAMS</i>
	<i>PER</i>	<i>PER</i>
	<i>GALLON</i>	<i>LITER</i>
Specialty Coatings		
(1) Ablative Coating	5.0	600
(2) Adhesion Promoter	7.4	890
(3) Adhesive Bonding Primers:		
(a) Cured at 250°F or below	7.1	850
(b) Cured above 250°F	8.6	1,030
(4) Adhesives:		
(a) Commercial Interior Adhesive	6.3	760
(b) Cyanoacrylate Adhesive	8.5	1,020
(c) Fuel Tank Adhesive	5.2	620
(d) Nonstructural Adhesive	3.0	360
(e) Rocket Motor Bonding Adhesive	7.4	890
(f) Rubber-Based Adhesive	7.1	850
(g) Structural Autoclavable Adhesive	0.5	60
(h) Structural Nonautoclavable Adhesive	7.1	850

(5) Antichafe Coating	5.5	660
(6) Chemical Agent-Resistant Coating	4.6	550
(7) Clear Coating	6.0	720
(8) Commercial Exterior Aerodynamic Structure Primer	5.4	650
(9) Compatible Substrate Primer	6.5	780
(10) Corrosion Prevention Compound	5.9	710
(11) Cryogenic Flexible Primer	5.4	645
(12) Cryoprotective Coating	5.0	600
(13) Electric or Radiation-Effect Coating	6.7	800
(14) Electrostatic Discharge and Electromagnetic Interference (EMI) Coating	6.7	800
(15) Elevated Temperature Skydrol Resistant Commercial Primer	6.2	740
(16) Epoxy Polyamide Topcoat	5.5	660
(17) Fire-Resistant (Interior) Coating	6.7	800
(18) Flexible Primer	5.4	640
(19) Flight-Test Coatings:		
(a) Missile or Single Use Aircraft	3.5	420
(b) All Other	7.0	840
(20) Fuel-Tank Coating	6.0	720
[(a)] (21) High-Temperature Coating	7.1	850
[(21)] (22) Insulation Covering	6.2	740
[(22)] (23) Intermediate Release Coating	6.2	750
[(23)] (24) Lacquer	6.9	830
[(24)] (25) Maskants:		
(a) Bonding Maskant	10.2	1,230
(b) Critical Use and Line Sealer Maskant	8.6	1,020
(c) Seal Coat Maskant	10.2	1,230
[(25)] (26) Metallized Epoxy Coating	6.2	740
[(26)] (27) Mold Release	6.5	780
[(27)] (28) Optical Anti-Reflective Coating	6.2	750
[(28)] (29) Part Marking Coating	7.1	850
[(29)] (30) Pretreatment Coating	6.5	780
[(30)] (31) Rain Erosion-Resistant Coating	7.1	850
[(31)] (32) Rocket Motor Nozzle Coating	5.5	660
[(32)] (33) Scale Inhibitor	7.3	880
[(33)] (34) Screen Print Ink	7.0	840
[(34)] (35) Sealants:		
(a) Extrudable/Rollable/Brushable Sealant	2.0	240

(b) Sprayable Sealant	5.0	600
[(35)] (36) Self-Priming Topcoat	3.5	420
[(36)] (37) Silicone Insulation Material	7.1	850
[(37)] (38) Solid Film Lubricant	7.3	880
[(38)] (39) Specialized Function Coating	7.4	890
[(39)] (40) Temporary Protective Coating	2.7	320
[(40)] (41) Thermal Control Coating	6.7	800
[(41)] (42) Wet Fastener Installation Coating	5.6	675
[(42)] (43) Wing Coating	7.1	850
Aerospace Primers, Aerospace Topcoats and Aerospace Chemical Milling Maskants		
(1) Primers	2.9	350
(2) Topcoats	3.5	420
(3) Chemical Milling Maskants (Type I/II)	1.3	160

* * * * *