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:

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Alcohol-A chemical compound consisting of the hydroxyl (OH) group attached to an alkyl radical and having the general formula $C_nH_{2n}+1OH$, such as ethanol, n-propanol and isopropyl alcohol.

Alcohol substitute-Nonalcohol additives that contain VOCs and are used in the fountain solution including ethylene glycol and glycol ethers. Some additives are used to reduce the surface tension of water; others are added to prevent piling (ink build up).

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Batch-For purposes of § 129.67b (relating to control of VOC emissions from offset lithographic printing and letterpress printing processes), a supply of fountain solution that is prepared and used without alteration until completely used or removed from the printing process. The term may apply either to a supply of fountain solution prepared in a discrete amount or to a supply of fountain solution that is continuously blended with an auto mix unit.

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First installation date-For purposes of §§ 129.67a (relating to control of VOC emissions from flexible packaging printing presses) and 129.67b, the first date of operation for a source or a control device. This date will not change if the source or control device is moved to a new location or when the control device is later used to control a new source.

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Flexible packaging--A package or part of a package, such as a bag, pouch, liner or wrap, the shape of which can be readily changed. Flexible packaging may be made of paper, plastic, film, aluminum foil, metalized or coated paper, metalized or coated film, or other material. The term includes a shrink-wrap label or wrapper printed on or in-line with a

flexible packaging printing press. The term does not include folding cartons or other rigid packaging or self-adhesive labels.

***Flexible packaging printing press*—A printing press used for the production of printed flexible packaging materials using flexographic printing or rotogravure printing, or both.**

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***Fountain solution*-A mixture of water, volatile and nonvolatile chemicals and one or more additives that reduce the surface tension of the water so that the mixture spreads easily across the printing surface of a lithographic plate. The mixture wets the non-image area so that the printing ink is maintained within the image area.**

(i) Alcohols, specifically isopropyl alcohol, and alcohol substitutes including ethylene glycol and glycol ethers, are the most common VOC additives used.

(ii) Nonvolatile additives include mineral salts and hydrophilic gums.

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***Heatset dryer*-A device used in a printing process to heat the printed substrate and promote the evaporation of ink oils.**

***Heatset ink*-Printing ink that is set and dried with the use of heat.**

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***Letterpress printing*-A printing process in which the image area of the plate is raised relative to the non-image area and the paste ink is transferred to the substrate directly from the image surface. The substrate can be fed to the press as either an individual sheet or a rolled web.**

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***Lithographic plate*-The thin metal plate used in lithographic or offset lithographic printing, which has chemically differentiated image and non-image areas so that the printing ink will adhere to the image areas.**

***Lithographic printing*-A printing process in which the image and non-image areas are in the same plane on the surface of a thin metal lithographic plate. The image and non-image areas are chemically differentiated; the image area is oil receptive and the non-image area is water receptive. The substrate can be fed to the press as either an individual sheet or a rolled web.**

* * * * *

***Offset lithographic printing*-A printing process in which the image and non-image areas are in the same plane on the surface of a thin metal lithographic plate and the image and non-image areas are chemically differentiated. The ink film is transferred from the lithographic plate to an intermediary surface, typically a rubber-covered cylinder called a**

blanket, which in turn transfers the ink film to the substrate. The substrate can be fed to the press as either an individual sheet or a rolled web.

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Paper, film or foil coating or *paper, film or foil surface coating*—Coatings applied in a continuous, uniform layer to paper, film or foil surfaces, and pressure-sensitive tapes, regardless of substrate. The coatings are applied to provide a covering, finish or functional or protective layer to the substrate, saturate a substrate for lamination or provide adhesion between two substrates for lamination.

(i) The term includes coatings used in web coating processes on the following **substrates**:

(A) Pressure sensitive tapes and labels, including fabric coated for use in pressure sensitive tapes and labels.

(B) Plastic and photographic films.

(C) Industrial and decorative laminates.

(D) Abrasive products, including fabric coated for use in abrasive products.

(E) Flexible packaging, including coating of non-woven polymer substrates for use in flexible packaging**, if the coating is not applied on or in-line with a flexible packaging printing press**.

(F) **[Miscellaneous] Those used in miscellaneous** coating operations, including the following:

(I) Corrugated and solid fiber boxes.

(II) Die-cut paper, paperboard and cardboard.

(III) Converted paper and paperboard not elsewhere classified.

(IV) Folding paperboard boxes, including sanitary boxes.

(V) Manifold business forms and related products.

(VI) Plastic aseptic packaging.

(VII) Carbon paper and inked ribbons.

(ii) The term does not include the following:

(A) Coatings applied in whole or in part as nonuniform layers, such as patterns, designs or print.

(B) Inks and other coatings used at printing operations that are applied on or in-line with an offset lithographic, screen, letterpress, flexographic, rotogravure or digital printing press.

(C) Sizing, starch or water-based clays that are applied with size presses and on-machine coaters that are part of an in-line papermaking system.

* * * * *

***Printing press*-The equipment used to apply words, pictures or designs to a sheet or continuous substrate of paper, plastic or other material. The equipment must include at least one printing work station. The following equipment, if present, is also considered part of the term:**

(i) One or multiple unwind or feed sections.

(ii) A series of individual work stations, which may include inboard and outboard work stations. A work station that employs another technology, including surface coating, is considered part of the printing press if the station is capable of printing or coating on the same substrate and if the work station is physically connected as part of the printing press.

(iii) A dryer associated with a work station.

(iv) A rewind, stack or collection section.

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Rotogravure printing—The application of words, designs and pictures to **a** substrate by means of a roll printing technique which involves an intaglio or recessed image area in the form of cells.

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***Sheet-fed printing*-A printing process in which individual sheets of substrate are fed sequentially to the printing press.**

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***Varnish*-For purposes of § 129.67b, an unpigmented offset lithographic ink which is used or applied on an offset lithographic printing press in the same manner as an offset lithographic ink. The term includes a heatset varnish, sheet-fed varnish and coldset varnish.**

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***Web printing*-A printing process in which continuous rolls of substrate material are fed to the printing press and rewound or cut to size after printing.**

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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—129.73 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 or cleanup solvent or ink which meets the applicable emission limitation in **§§** 129.52**[, 129.52a, 129.52b,]** - 129.52c, 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, § 129.67, **§ 129.67a, § 129.67b,** § 129.68(b)(2) and (c)(2), § 129.73 or § 129.77.

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(c) *Demonstration of compliance.* **[Test] 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).

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§ 129.67. Graphic arts systems.

(a) This section applies **as follows:**

(1) This section applies to **[facilities] the owner and operator of a facility** whose rotogravure and flexographic printing presses by themselves or in combination with a surface coating operation subject to § 129.52 **[(relating to surface coating processes)]**, **§ 129.52a, § 129.52b or § 129.52c or in combination with a flexible packaging printing press subject to § 129.67a** have the potential to emit or have emitted VOCs into the outdoor atmosphere in

quantities greater than 1,000 pounds (460 kilograms) per day or 100 tons (90,900 kilograms) per year during any calendar year since January 1, 1987.

(2) This section shall continue to apply to the owner and operator of a flexographic or rotogravure printing press that prints flexible packaging materials subject to § 129.67a(a)(1)(ii), if the owner or operator was required to install a control device under this section prior to the effective date of § 129.67a, namely_____ (*Editor's note:* The blank refers to the effective date of adoption of this proposed rulemaking.).

(3) This section does not apply to the owner or operator of a flexible packaging printing press subject to § 129.67a(a)(1)(i) (relating to control of VOC emissions from flexible packaging printing presses).

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[*Editor's note: Sections 129.67a and 129.67b are new and printed in regular type to enhance readability.*]

§ 129.67a. Control of VOC emissions from flexible packaging printing presses.

(a) *Applicability.*

(1) Except as specified in paragraphs (3) and (4), this section applies to the owner and operator of a flexible packaging printing press if one or both of the following applies:

(i) An individual flexible packaging printing press has potential emissions from the dryer, before consideration of add-on controls, of at least 25 tpy of VOC from inks, coatings and adhesives combined. This section supersedes § 129.67 (relating to graphic arts systems).

(ii) The total actual VOC emissions from all inks, coatings and adhesives combined from all flexible packaging printing presses, and all emissions from related cleaning activities, at the facility are equal to or greater than 15 pounds (6.8 kilograms) per day or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(2) The owner or operator of a flexographic or rotogravure printing press subject to paragraph (1)(ii) and § 129.67, who was required to install a control device under § 129.67 prior to the effective date of this section, namely_____ (*Editor's note:* The blank refers to the effective date of adoption of this proposed rulemaking.), shall continue the operation of that control device and also meet the requirements of this section.

(3) VOCs from adhesives used at a facility that are not used or applied on or with a flexible packaging printing press are not subject to this section and may be regulated under § 129.52b, § 129.77 or Chapter 130, Subchapter D (relating to control of VOC emissions from paper, film and foil surface coating processes; control of VOC emissions from the use or application of adhesives, sealants, primers and solvents; and adhesives, sealants, primers and solvents).

(4) This section does not apply to surface coating of flexible packaging substrates that is not done with a flexible packaging printing press. Surface coating of flexible packaging substrates is regulated under § 129.52b.

(b) *Existing RACT permit.* The requirements of this section supersede the requirements of a RACT permit issued to the owner or operator of a source subject to this section prior to January 1, 2013, under §§ 129.91 – 129.95 (relating to stationary sources of NOx and VOCs) to control, reduce or minimize VOCs from a flexible packaging printing press, except to the extent the RACT permit contains more stringent requirements.

(c) *Emission limits.* Beginning January 1, 2013, a person subject to subsection (a)(1)(i) may not cause or permit the emission into the outdoor atmosphere of VOCs from a flexible packaging printing press, unless one or more of the following limitations is met:

(1) The VOC content of each as applied ink, coating or adhesive used on a single flexible packaging printing press is equal to or less than one or both of the following limits:

(i) 0.16 lb VOC per lb material as applied.

(ii) 0.8 lb VOC per lb solids as applied.

(2) The daily weighted-average VOC content of all inks, coatings and adhesives combined used on a single flexible packaging printing press meets one or both of the VOC content limits in subsection (c)(1). The use of averaging to meet the VOC content limits may not be used across multiple printing presses.

(3) The overall weight of VOCs emitted to the atmosphere from all inks, coatings and adhesives combined used on a single flexible packaging printing press 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 efficiency of a control system, as determined by the test methods and procedures specified in Chapter 139, may not be less than that listed in Table 1.

Table 1
Overall Efficiency Requirement of a Control System on a Single Flexible Packaging Printing Press with potential emissions ≥ 25 tpy of VOC, before control

Control System Overall Efficiency Requirement	Printing Press First Installation Date		Air Pollution Control Device First Installation Date	
	Prior to March 14, 1995[1]	**On or after** March 14, 1995	**Prior to** January 1, 2013[2]	**On or after** January 1, 2013
≥ 65%	X		X	
≥ 70%	X			X

[1]March 14, 1995, is the date of the proposed 1996 NESHAP for the printing and publishing industry.
[2]January 1, 2013, is the proposed compliance date of the flexible packaging printing press regulation.

≥ 75%		X	X	
≥ 80%		X		X

(4) The overall weight of VOCs emitted to the atmosphere from a single flexible packaging printing press that uses a noncomplying ink, coating or adhesive, or a combination of noncomplying and complying inks, coatings or adhesives, is reduced through the use of vapor recovery or incineration or another method that is authorized under § 129.51(a).

(5) The Department has issued a plan approval, operating permit or Title V permit to the owner or operator prior to January 1, 2013, establishing a Federally-enforceable limitation to limit the potential emissions of VOC from the flexible packaging printing press below 25 tpy, before consideration of add-on controls.

(d) *Compliance monitoring requirements.*

(1) The VOC content of the as applied ink, coating or adhesive, expressed in units of weight of VOC per weight of solids, shall be calculated as follows:

$$VOC_B = (W_o)/(W_n)$$

Where:

VOC_B = VOC content in lb VOC/lb of solids as applied or kg VOC/kg of solids as applied

W_o = Weight percent of VOC (W_v-W_w-W_{ex})

W_v = Weight percent of total volatiles (100%-weight percent solids)

W_w = Weight percent of water

W_{ex} = Weight percent of exempt solvents

W_n = Weight percent of solids of the as applied ink, coating or adhesive

(2) The overall efficiency of a control system for a single flexible packaging printing press that uses a combination of controls and noncomplying and complying inks, coatings and adhesives, as determined by the test methods and procedures specified in Chapter 139, shall be no less than 80% or the equivalent overall efficiency as calculated by the following equation, whichever is less stringent:

$$O = (1 – E/V) \times 100$$

Where:

V = The VOC content of the as applied coating, in lb VOC/lb of material or in lb VOC/lb material solids.

E = The emission limit from subsection (c)(1): either 0.16 lb VOC/lb materials or 0.8 lb VOC/lb of material solids.

O = The overall required control efficiency.

(3) The owner or operator of a printing press subject to this section using an add-on air pollution control device in accordance with subsection (c)(3) shall comply with the following requirements:

(i) The add-on air pollution control device must be equipped with the applicable monitoring equipment and the monitoring equipment shall be installed, calibrated, operated and maintained according to manufacturer's specifications at all times the add-on air pollution control device is in use.

(A) The combustion temperature must be continuously monitored and recorded daily if a thermal incinerator is operated.

(B) Inlet and exhaust gas temperatures must be continuously monitored and recorded daily if a catalytic incinerator is operated.

(ii) Operational records sufficient to demonstrate compliance with the requirements of this subsection shall be maintained in accordance with subsection (e), including the following:

(A) Daily records of the hours of operation of the add-on air pollution control device.

(B) Records of all maintenance performed on the add-on air pollution control device, including the date and type of maintenance.

(C) Records of all maintenance performed on the air pollution control device monitoring equipment, including the date and type of maintenance.

(iii) The air pollution control device shall operate at all times that the source is operating.

(iv) The air pollution control device is approved, in writing, by the Department in an operating permit prior to use.

(e) *Recordkeeping and reporting requirements.* Beginning January 1, 2013, the owner or operator of a flexible packaging printing press subject to this section shall maintain records sufficient to demonstrate compliance with the requirements of this section. At a minimum, the owner or operator shall maintain daily records of the following information:

(1) The following parameters for each VOC-containing material, including ink, coating, adhesive, thinner, component or cleaning solvent, as supplied:

(i) Name and identification number of the ink, coating, adhesive, thinner, component or cleaning solvent.

(ii) Amount used.

(iii) Density or specific gravity.

(iv) VOC content (weight % or pounds/gallon).

(2) The VOC content of each ink, coating, adhesive, thinner, component or cleaning solvent as applied.

(3) The volume used of each ink, coating, adhesive, thinner, component or cleaning solvent as applied.

(4) The records required under paragraphs (1)-(3) shall be maintained for 2 years, unless a longer period is required by § 127.511(b)(2) (relating to monitoring and related recordkeeping and reporting requirements). The records shall be submitted to the Department upon receipt of a written request.

(f) *Sampling and testing.*

(1) Sampling and testing shall be done in accordance with the procedures and test methods specified in Chapter 139 (relating to sampling and testing).

(2) Other test methods demonstrated to provide results that are acceptable for purposes of determining compliance with this section may be used if prior approval is obtained in writing from the Department and the EPA.

(g) *Work practice requirements for cleaning materials.*

(1) Beginning January 1, 2013, the owner or operator of a flexible packaging printing press subject to this section shall comply with the following work practices for cleaning activities at the facility:

(i) Store all VOC-containing cleaning materials, waste cleaning materials, and used shop towels in closed containers.

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

(iii) Minimize spills of VOC-containing cleaning materials and waste cleaning materials and clean up spills immediately.

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

(2) The requirements in paragraph (1) apply to the following activities:

(i) Cleaning of ink, coating or adhesive from a press.

(ii) Cleaning of ink, coating or adhesive from press parts, including press parts that have been removed from the press for cleaning.

(iii) Cleaning of ink, coating or adhesive from areas around a press.

(3) The requirements in paragraph (1) do not apply to the following activities:

(i) Cleaning electronic components of a press.

(ii) Cleaning in pre-press (that is, platemaking) operations.

(iii) Cleaning in post-press (that is, binding) operations.

(iv) Use of janitorial supplies (for example, detergents or floor cleaners) for general cleaning around a press.

(v) The use of parts washers or cold cleaners at a flexible packaging printing facility. The use of parts washers and cold cleaners is regulated under § 129.63 (relating to degreasing operations).

§ 129.67b. Control of VOC emissions from offset lithographic printing presses and letterpress printing presses.

(a) *Applicability.*

(1) Except as specified in paragraph (2), this section applies to the owner and operator of an offset lithographic printing press or a letterpress printing press, or both, if the press meets one or a combination of the following:

(i) A single heatset web offset lithographic printing press or heatset web letterpress printing press that has potential emissions from the dryer, before consideration of add-on controls, of at least 25 tpy of VOC from all heatset inks, coatings and adhesives combined.

(ii) A letterpress printing press, if the total actual VOC emissions from all inks, coatings and adhesives combined from all letterpress printing presses, and all emissions from related cleaning activities, at the facility are equal to or greater than 15 pounds (6.8 kilograms) per day or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(iii) An offset lithographic printing press, if the total actual VOC emissions from all inks, coatings and adhesives combined from all offset lithographic printing presses, and all emissions from related cleaning activities, at the facility are equal to or greater than 15 pounds (6.8 kilograms) per day or 2.7 tons (2,455 kilograms) per 12-month rolling period, before consideration of add-on controls.

(2) VOCs from adhesives used at a facility that are not used or applied on or with an offset lithographic printing press or a letterpress printing press are not subject to this section and may be regulated under § 129.77 or Chapter 130, Subchapter D (relating to control of VOC emissions from the use or application of adhesives, sealants, primers and solvents; and adhesives, sealants, primers and solvents).

(b) *Existing RACT permit.* The requirements of this section supersede the requirements of a RACT permit issued to the owner or operator of a source subject to subsection (a) prior to January 1, 2013, under §§ 129.91 – 129.95 (relating to stationary sources of NOx and VOCs) to control, reduce or minimize VOCs from an offset lithographic printing press or a letterpress printing press, or both, except to the extent the RACT permit contains more stringent requirements.

(c) *Emission limits for all printing presses subject to this section.*

(1) Beginning January 1, 2013, a person subject to this section may not cause or permit the emission into the outdoor atmosphere of VOCs from cleaning materials used in an offset lithographic printing press or a letterpress printing press unless the following conditions are met:

(i) The cleaning materials used shall meet one or both of the following VOC limits:

(A) A VOC composite partial vapor pressure less than 10 millimeters of mercury at 68°F (20°C).

(B) A VOC content less than 30% by weight.

(ii) The use of one or more cleaning materials with a higher VOC composite partial vapor pressure or higher VOC content, or both, than is listed in subparagraph (i), is limited to 55 gallons per year, combined, of all cleaning materials that exceed the limits in subparagraph (i).

(2) Beginning January 1, 2013, a person subject to subsection (a)(1)(i) or (a)(1)(iii) may not cause or permit the emission into the outdoor atmosphere of VOCs from a fountain solution used in an offset lithographic printing press unless the fountain solution meets one or more of the following VOC limits. This paragraph does not apply to an owner or operator subject to paragraph (3).

(i) For heatset web offset lithographic printing, press-ready (as applied) fountain solution shall contain 1.6% or less alcohol by weight or equivalent. This limit may be met by one or more of the following methods:

(A) Reducing the press-ready (as applied) fountain solution alcohol content to 1.6% or less by weight.

(B) Using press-ready (as applied) fountain solution with alcohol content of 3% or less by weight if the fountain solution is refrigerated at or below 60°F (15.5°C).

(C) Using press-ready (as applied) fountain solution with alcohol substitute content of 5% or less by weight and no alcohol in the fountain solution.

(D) Using another method that achieves a level of control of VOC emissions from the press-ready (as applied) fountain solution equal to or better than the methods listed in clauses (A), (B) and (C).

(ii) For sheet-fed offset lithographic printing, press-ready (as applied) fountain solution shall contain 5% or less alcohol by weight or equivalent. This limit may be met by one or more of the following methods:

(A) Reducing the press-ready (as applied) fountain solution alcohol content to 5% or less by weight.

(B) Using press-ready (as applied) fountain solution with alcohol content of 8.5% or less by weight if the fountain solution is refrigerated at or below 60°F (15.5°C).

(C) Using press-ready (as applied) fountain solution with alcohol substitute content of 5% or less by weight and no alcohol in the fountain solution.

(D) Using another method that achieves a level of control of VOC emissions from the press-ready (as applied) fountain solution equal to or better than the methods listed in clauses (A), (B) and (C).

(iii) For coldset web offset lithographic printing, press-ready (as applied) fountain solution shall contain alcohol substitute of 5% or less by weight and no alcohol in the fountain solution.

(3) The control requirements under paragraph (2) for a fountain solution do not apply to the owner or operator of either of the following:

(i) A sheet-fed offset lithographic printing press with maximum sheet size 11x17 inches or smaller.

(ii) An offset lithographic printing press with total fountain solution reservoir of less than one gallon.

(d) *Emission limits for heatset web offset lithographic printing presses and heatset web letterpress printing presses.*

(1) This subsection only applies if a single heatset web offset lithographic printing press or heatset web letterpress printing press has potential emissions from the dryer, before consideration of add-on controls, of at least 25 tpy of VOC from all heatset inks, coatings and adhesives combined.

(2) This subsection does not apply for one or a combination of the following circumstances:

(i) The press is used for book printing.

(ii) The press has a maximum web width of 22 inches or less.

(iii) When the press is operated with one or a combination of the following inks, coatings or varnishes:

(A) Waterborne coatings.

(B) Ultra-violet light or electron beam radiation-cured materials.

(C) Sheet-fed or coldset web inks.

(D) Sheet-fed or coldset web varnishes.

(3) This subsection does not apply to the owner or operator of the press if the Department has issued a plan approval, operating permit or Title V permit to the owner or operator prior to January 1, 2013, establishing a Federally-enforceable limitation to limit the potential emissions of VOC from the offset lithographic printing press or the letterpress printing press below 25 tpy, before consideration of add-on controls.

(4) Beginning January 1, 2013, a person subject to subsection (a)(1)(i) may not cause or permit the emission into the outdoor atmosphere of VOCs from a heatset web offset lithographic printing press or a heatset web letterpress printing press, or both, unless the overall weight of VOCs emitted to the atmosphere from the heatset dryer is reduced through the use of vapor recovery or incineration or another method that is authorized under § 129.51(a) (relating to general). The dryer pressure must be maintained lower than the press room area pressure so that air flows into the dryer at all times when the press is operating.

(i) The overall efficiency of an add-on air pollution control device for a heatset dryer, determined in accordance with this subsection, shall meet either of the following:

(A) At least 90% for an add-on air pollution control device whose first installation date was prior to January 1, 2013.

(B) At least 95% for an add-on air pollution control device whose first installation date is on or after January 1, 2013.

(ii) If the inlet VOC concentration to the control device is so low that compliance with the 90% or 95% overall efficiency in subparagraph (i) is not achievable, the owner or operator of the printing press may request approval for an alternative demonstration that meets the following requirements:

(A) The request is submitted to the Department in writing.

(B) The request demonstrates the inlet VOC concentration to the control device is so low that compliance with the 90% or 95% overall efficiency in subparagraph (i) is not achievable.

(C) The request is for an outlet VOC concentration less than or equal to 20 ppm as hexane on a dry basis.

(D) The Department approves the request in writing.

(e) *Compliance and monitoring requirements.*

(1) The owner or operator of a heatset web offset lithographic printing press or heatset web letterpress printing press subject to this section using an add-on air pollution control device in accordance with subsection (d) shall comply with the following requirements:

(i) The add-on air pollution control device shall be equipped with the applicable monitoring equipment and the monitoring equipment is installed, calibrated, operated and maintained according to manufacturer's specifications at all times the add-on air pollution control device is in use.

(A) The combustion temperature must be continuously monitored and recorded daily if a thermal incinerator is operated.

(B) Inlet and exhaust gas temperatures must be continuously monitored and recorded daily if a catalytic incinerator is operated.

(ii) Operational records sufficient to demonstrate compliance with the requirements of this subsection shall be maintained in accordance with subsection (e), including the following:

(A) Daily records of the hours of operation of the add-on air pollution control device.

(B) Records of all maintenance performed on the add-on air pollution control device, including the date and type of maintenance.

(C) Records of all maintenance performed on the air pollution control device monitoring equipment, including the date and type of maintenance.

(iii) The air pollution control device shall operate at all times that the source is operating.

(iv) The air pollution control device shall be approved, in writing, by the Department in a plan approval, operating permit or Title V permit.

(2) The owner or operator of an offset lithographic printing press subject to this section that is required to meet one of the fountain solution VOC limits of subsection (c)(2) shall demonstrate compliance by using one or more of the following methods:

(i) Analysis of a sample of the press-ready (as applied) fountain solution for VOC content using EPA Reference Method 24, *Determination of Volatile Matter Content, Water Content, Density, Volume Solids and Weight solids of Surface Coatings***,** found at 40 CFR 60, Subpart D, Appendix A, including updates and revisions.

(ii) Maintenance onsite of MSDS, CPDS or other data provided by the manufacturer of the fountain solution that indicates the VOC content of the press-ready (as applied) fountain solution.

(iii) Calculation of the VOC content of the press-ready (as applied) fountain solution that combines the EPA Reference Method 24 analytical VOC content data for each of the concentrated materials used to prepare the press-ready fountain solution.

(A) The VOC content data of the concentrated materials shall be combined in the proportions in which the concentrated materials are mixed to make the batch of press-ready (as applied) fountain solution.

(B) The VOC content shall be calculated once for each batch of press-ready (as applied) fountain solution and recorded in the form of a batch log.

(C) The EPA Reference Method 24 analysis of the concentrated materials used to prepare the press-ready (as applied) fountain solution may be performed by the supplier of the materials and these results provided to the owner or operator of the affected press.

(iv) Measurement of the recirculating reservoir temperature of a refrigerated press-ready (as applied) fountain solution with a thermometer or other temperature detection device capable of reading to 0.5°F (0.28°C) to ensure that the temperature of the refrigerated fountain solution containing alcohol is maintained at or below 60°F (15.5°C) at all times.

(A) A temperature monitor shall be installed on the fountain solution recirculating reservoir, calibrated, maintained and continuously operated.

(B) The temperature on the temperature monitor shall be recorded at least once per operating day to verify that the refrigeration system is operating properly.

(v) Monitoring of the press-ready (as applied) fountain solution shall be performed with one or more of the following instruments:

(A) A refractometer shall be used to monitor the fountain solution alcohol concentration. The refractometer must:

(I) Be corrected for temperature at least once for each 8-hour shift or once per batch, whichever is longer.

(II) Have a visual, analog or digital readout with an accuracy of 0.5%.

(III) Be calibrated with a standard solution for the type of alcohol used in the fountain solution.

(B) A hydrometer shall be used to monitor the fountain solution alcohol concentration. The hydrometer must:

(I) Be corrected for temperature at least once for each 8-hour shift or once per batch, whichever is longer.

(II) Have a visual, analog or digital readout with an accuracy of 0.5%.

(III) Be calibrated with a standard solution for the type of alcohol used in the fountain solution.

(C) A conductivity meter shall be used to determine the fountain solution VOC content. The conductivity meter:

(I) May only be used if the Department has determined, in writing, that a refractometer or hydrometer cannot be used for monitoring the alcohol concentration of the fountain solution. Requests for the use of a conductivity meter must be submitted to the Department in writing.

(II) Reading for the fountain solution must be referenced to the conductivity of the incoming water.

(vii) Another method may be used to determine compliance with the VOC content limits for fountain solutions in subsection (c)(2) if the written request submitted to the Department for approval meets the following requirements:

(A) The request demonstrates that the method provides results that accurately determine the fountain solution VOC content.

(B) The Department provides prior written approval of the alternative method.

(3) The owner or operator of an offset lithographic printing press or a letterpress printing press subject to this section shall demonstrate compliance with the VOC content limit or VOC composite partial vapor pressure limit for cleaning materials in subsection (c)(1) by one or more of the following methods:

(i) Analysis of a sample of press-ready (as applied) cleaning material for VOC content using EPA Reference Method 24.

(ii) Use of the equation in subsection (j) to calculate the composite partial vapor pressure of the press-ready (as applied) cleaning material.

(iii) Use of the methods in subsection (k) to determine the partial vapor pressure of a single component of the cleaning material.

(iv) Maintenance onsite of MSDS, CPDS or other data provided by the manufacturer of the cleaning material that indicates the VOC content or the VOC composite partial vapor pressure, or both, of the press-ready (as applied) cleaning material.

(v) Calculation of the VOC content of the press-ready (as applied) cleaning material that combines the EPA Reference Method 24 analytical VOC content data or analytical VOC partial vapor pressure data for each of the concentrated materials used to prepare the press-ready (as applied) cleaning material.

(A) The VOC content data or VOC composite partial vapor pressure data for each of the concentrated materials shall be combined in the proportions in which the concentrated materials are mixed to make the batch of press-ready (as applied) cleaning material.

(B) The VOC content or VOC composite partial vapor pressure calculation shall be calculated once for each press-ready (as applied) cleaning material and kept in the form of a batch log.

(C) The EPA Reference Method 24 analysis of the concentrated cleaning material may be performed or the VOC composite partial vapor pressure data may be determined by the supplier of the materials and these results provided to the owner or operator of the affected press.

(vi) Another method may be used to determine compliance with the VOC content limits for cleaning materials in subsection (c)(1) if the written request submitted to the Department for approval meets the following requirements:

(A) The request demonstrates that the method provides results that accurately determine the cleaning material VOC content or VOC composite partial vapor pressure.

(B) The Department provides prior written approval of the alternative method.

(f) *Recordkeeping requirements.* Beginning January 1, 2013, the owner or operator of a printing press subject to this section shall maintain records sufficient to demonstrate compliance with this section. At a minimum, the owner or operator shall maintain daily records as follows:

(1) The following parameters for each ink, varnish, coating, adhesive, thinner or component, as supplied:

(i) Name and identification number of the ink, varnish, coating, adhesive, thinner or component.

(ii) Amount used.

(iii) Density or specific gravity.

(iv) VOC content (weight % or pounds/gallon).

(2) The VOC content of each ink, varnish, coating or adhesive as applied.

(3) The volume used of each ink, varnish, coating or adhesive as applied.

(4) The following parameters for each blanket, roller or other concentrated cleaning material used, as supplied:

(i) Name and identification number for the blanket, roller or other concentrated cleaning material.

(ii) Amount used.

(iii) Weight percent of total volatiles, water and exempt solvents.

(iv) Density or specific gravity.

(v) One of the following:

(A) VOC content (weight %).

(B) Composite partial vapor pressure.

(5) The VOC content or VOC composite partial vapor pressure of each cleaning material as applied.

(6) The volume used of each cleaning material as applied.

(7) The following parameters for each concentrated component or additive, as supplied, used to prepare the press-ready (as applied) fountain solution batch:

(i) Name and identification number of the component or additive.

(ii) Amount used.

(iii) Density or specific gravity.

(iv) Weight percent of total volatiles, water and exempt solvents of each concentrated component material or additive.

(v) VOC content of each concentrated component or additive material (weight %).

(8) The VOC content (weight %) of each batch of the press-ready (as applied) fountain solution.

(9) The volume used of each press-ready (as applied) fountain solution.

(g) *Reporting requirements*. Beginning January 1, 2013, the owner or operator of an offset lithographic printing press or a letterpress printing press subject to this section shall meet the following reporting requirements:

(1) The records required under subsection (f) shall be maintained for 2 years unless a longer period is required by § 127.511(b)(2) (relating to monitoring and related recordkeeping and reporting requirements). The records shall be submitted to the Department upon receipt of a written request.

(2) The owner or operator of an offset lithographic printing press required to demonstrate control efficiency in subsection (d) shall submit reports to the Department in accordance with Chapter 139 (relating to sampling and testing)

(h) *Sampling and testing.* Sampling and testing shall be done in accordance with the procedures and test methods specified in Chapter 139 or with the following methods, or both:

(1) The overall efficiency of the add-on air pollution control device shall be determined by the following test methods and procedures:

(i) The capture efficiency shall be determined in accordance with 40 CFR 51, Appendix M, Methods 204-204F, including updates and revisions.

(ii) The control efficiency shall be determined in accordance with one of the following, subject to prior written approval by the Department:

(A) EPA Reference Method 25, *Determination of Total Gaseous Nonmethane Organic Emissions as Carbon*, found at 40 CFR 60, Appendix A, including updates and revisions.

(B) EPA Reference Method 25A, *Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer*, found at 40 CFR 60, Subpart D, Appendix A, including updates and revisions.

(C) EPA Reference Method 25B, *Determination of Total Gaseous Organic Concentration Using a Nondispersive Infrared Analyzer*, found at 40 CFR 60, Subpart D, Appendix A, including updates and revisions.

(iii) The capture efficiency or control efficiency, or both, may be determined using an alternate method approved by the Department in writing, prior to testing. A request for the use of an alternative method must be submitted to the Department in writing.

(2) The constant negative pressure into the dryer, as required in subsection (d), must be demonstrated using an air flow direction measuring device or indicator, such as a smoke stick or aluminum ribbons.

(i) *Work practice requirements for cleaning materials*.

(1) Beginning January 1, 2013, the owner or operator of an offset lithographic printing press or a letterpress printing press subject to this section shall comply with the following work practices for cleaning activities at the facility:

(i) Store all VOC-containing cleaning materials, waste cleaning materials, and used shop towels in closed containers.

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

(iii) Minimize spills of VOC-containing cleaning materials and waste cleaning materials and clean up spills immediately.

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

(2) The requirements in paragraph (1) apply to the following activities:

(i) Cleaning of a press, including blanket washing, roller washing, plate cleaners, metering roller cleaners, impression cylinder cleaners and rubber rejuvenators.

(ii) Cleaning of press parts, including press parts that have been removed from the press for cleaning.

(iii) Cleaning of ink, coating or adhesive from areas around a press.

(3) The requirements in paragraph (1) do not apply to the following activities:

(i) Cleaning electronic components of a press.

(ii) Cleaning in pre-press (that is, platemaking) operations.

(iii) Cleaning in post-press (that is, binding) operations.

(iv) Use of janitorial supplies (for example, detergents or floor cleaners) for general cleaning around a press.

(v) The use of parts washers or cold cleaners at an offset lithographic printing or a letterpress printing facility. The use of parts washers and cold cleaners is regulated under § 129.63 (relating to degreasing operations).

(j) *Composite partial vapor pressure.* The composite partial vapor pressure of organic compounds in cleaning materials 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) ASTM E260, *Standard Practice for Packed Column Gas Chromatography*, ASTM International, 100 Barr Harbor Drive, P. O. Box C700, West Conshohocken, PA 19428-2959 USA, for organic content, including updates and revisions.

(ii) ASTM D3792, *Standard Test Method for Water Content of Coatings by Direct Injection Into a Gas Chromatograph*, ASTM International, 100 Barr Harbor Drive, P. O. Box C700, West Conshohocken, PA 19428-2959 USA, for water content, including updates and revisions.

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

$$PP_c = \frac{\sum_{i=1}^{n} (W_i)(VP_i)/MW_i}{W_w/MW_w + \sum_{e=1}^{k} W_e/MW_e + \sum_{i=1}^{n} W_i/MW_i}$$

Where:

PP_c = VOC composite partial vapor 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, in g/g-mole. (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).

(k) *Determination of vapor pressure of single organic compounds in cleaning materials*. The vapor pressure of each single component compound shall be determined from one or more of the following:

(1) ASTM D2879, *Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope*, ASTM International, 100 Barr Harbor Drive, P. O. Box C700, West Conshohocken, PA 19428-2959 USA, including updates and revisions.

(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.

(v) Additional sources approved by the Department.

§ 129.77. Control of emissions from the use or application of adhesives, sealants, primers and solvents.

* * * * *

(k) This section does not apply to the use or application of the following compounds or products:

(1) Adhesives, sealants, adhesive primers or sealant primers being tested or evaluated in a research and development, quality assurance or analytical laboratory, if records are maintained as required in subsections (p) and (q).

(2) Adhesives, sealants, adhesive primers or sealant primers that are subject to **[§ 129.73 (relating to aerospace manufacturing and rework) or Chapter 130, Subchapter B or C (relating to consumer products; and architectural and industrial maintenance coatings)]** **other sections in this chapter or Chapter 130 (relating to standards for products), or both**.

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Subchapter D. ADHESIVES, SEALANTS, PRIMERS AND SOLVENTS

GENERAL PROVISIONS

§ 130.703. Exemptions and exceptions.

(a) This subchapter does not apply to the use, application, sale, supply, offer for sale or manufacture for sale for use in this Commonwealth of the following compounds or products:

(1) Adhesives, sealants, adhesive primers or sealant primers being tested or evaluated in a research and development, quality assurance or analytical laboratory, if records are maintained as required under § 130.704 (relating to recordkeeping requirements).

(2) Adhesives, sealants, adhesive primers or sealant primers that are subject to **[§ 129.73 (relating to aerospace manufacturing and rework) or Chapter 130, Subchapter B or C (relating to consumer products; and architectural and industrial maintenance coatings)]** **other sections in this chapter or Chapter 129 (relating to standards for sources), or both**.

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