

Chapter 129 -- Standards for Sources

SOURCES OF VOCs

§ 129.52b. Control of VOC emissions from paper, film and foil surface coating processes.

(a) *Applicability.* This section applies to the owner and operator of a paper, film or foil surface coating process, as follows, if the surface coating process meets one or a combination of the following:

(1) The emission limits in Table I and other requirements of this section apply to the owner and operator of a paper, film or foil surface coating process if an individual paper, film or foil surface coating line has a potential to emit at least 25 tpy of VOC from coatings, prior to controls. For these processes, the emission limits and other requirements of this section supersede the emission limits and other requirements of § 129.52 (relating to surface coating processes).

(2) The emission limit in Table II and other requirements of this section apply to the owner and operator of a paper surface coating process which emits or has emitted VOCs into the outdoor atmosphere in quantities greater than 3 pounds (1.4 kilograms) per hour, 15 pounds (7 kilograms) per day or 2.7 tons (2,455 kilograms) per year during any calendar year since January 1, 1987. For these processes, the emission limit and other requirements of this section supersede the emission limit and other requirements of § 129.52.

(3) The work practice requirements for cleaning materials found in subsection (h), and the related compliance monitoring and recordkeeping and reporting requirements of subsections (d) and (e), apply to the owner and operator of a paper, film or foil surface coating process if the total actual VOC emissions from all paper, film or foil surface coating operations, including 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 controls.

(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, 2012, under § § 129.91—129.95 (relating to stationary sources of NO_x and VOCs) to control, reduce or minimize VOCs from a paper, film or foil surface coating process, except to the extent the RACT permit contains more stringent requirements.

(c) *Emission limits.* Beginning January 1, 2012, a person subject to subsection (a)(1) or (2) may not cause or permit the emission into the outdoor atmosphere of VOCs from a paper, film or foil surface coating process, unless one of the following limitations is met:

(1) The VOC content of each as applied coating is equal to or less than the limit specified in Table I or Table II, as applicable.

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

$$\text{VOC}_B = (W_o)/(W_n)$$

Where:

VOC_B = VOC content in lb VOC/lb of coating solids

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 coating

(ii) The VOC content of the as applied coating, expressed in units of weight of voc per volume of coating solids, shall be calculated as follows:

$$\text{VOC} = (W_o)(D_c)/V_n$$

Where:

VOC = VOC Content in lb voc/gal of coating solids

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 solvent(s)

D_c = Density of coating, lb/gal, at 25° C

V_n = Volume percent of solids of the as applied coating

(iii) The VOC content of a dip coating, expressed in units of weight of VOC per weight of coating solids, shall be calculated on a 30-day rolling average basis using the following equation:

$$\text{VOC}_A = \frac{\sum_i (W_{oi} \times D_{ci} \times Q_i) + \sum_j (W_{oj} \times D_{dj} \times Q_j)}{\sum_i (W_{ni} \times D_{ci} \times Q_i)}$$

Where:

VOC_A = VOC content in lb VOC/lb of coating solids for a dip coating, calculated on a 30-day rolling average basis

W_{oi} = Percent VOC by weight of each as supplied coating (i) added to the dip coating process, expressed as a decimal fraction (that is 55% = 0.55)

D_{ci} = Density of each as supplied coating (i) added to the dip coating process, in pounds per gallon

Q_i = Quantity of each as supplied coating (i) added to the dip coating process, in gallons

W_{ni} = Percent solids by weight of each as supplied coating (i) added to the dip coating process, expressed as a decimal fraction

W_{oJ} = Percent VOC by weight of each thinner (J) added to the dip coating process, expressed as a decimal fraction

D_{dJ} = Density of each thinner (J) added to the dip coating process, in pounds per gallon

Q_J = Quantity of each thinner (J) added to the dip coating process, in gallons

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

(2) The overall weight of VOCs emitted to the atmosphere 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 be no less than 90% or may be no less than 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 coating solids or lb voc/gal of coating solids.

E = The Table I limit in lb VOC/lb of coating solids or Table II limit in lb voc/gal of coating solids.

O = The overall required control efficiency.

(d) *Compliance monitoring procedures.* The owner or operator of a facility subject to this section shall maintain records sufficient to demonstrate compliance as follows:

(1) The owner or operator of a facility subject to subsection (a) shall maintain daily records of the following parameters for each coating, thinner, component or cleaning solvent, as supplied:

- (i) Name and identification number of the coating, thinner, component or cleaning solvent.
- (ii) Volume used.
- (iii) Mix ratio.
- (iv) Density or specific gravity.
- (v) Weight percent of total volatiles, water, solids and exempt solvents.
- (vi) VOC content.

(2) In addition to the records required under paragraph (1), the owner or operator of a facility subject to subsection (a)(2) shall maintain daily records of the volume percent solids for each coating, thinner or component, as supplied.

(3) The owner or operator of a facility subject to subsection (a) shall maintain daily records of the VOC content of each as applied coating or cleaning solvent.

(e) *Recordkeeping and reporting requirements.* The records required under subsection (d) shall be:

(1) Maintained for 2 years, unless a longer period is required under § 127.511(b)(2) (relating to monitoring and related recordkeeping and reporting requirements).

(2) Submitted to the Department upon receipt of a written request.

(f) *Coating application methods.* A person subject to subsection (a)(1) may not cause or permit the emission into the outdoor atmosphere of VOCs from the application of paper, film or foil surface coatings, unless the coatings are applied using one or more of the following coating application methods:

- (1) Rotogravure coating.
- (2) Reverse roll coating.
- (3) Knife coating.
- (4) Dip coating.
- (5) Slot die coating.
- (6) Flexographic coating.

(7) Extrusion coating.

(8) Calendaring.

(9) Other coating application method, if approved in writing by the Department prior to the use of the application method.

(i) The coating application method must be capable of achieving a transfer efficiency equivalent to or better than that achieved by a method listed in paragraphs (1)—(8).

(ii) The request for approval must be submitted in writing by the owner or operator of the paper, film or foil surface coating facility.

(g) *Exempt coatings.* The VOC coating content limits in Tables I and II do not apply to a coating used exclusively for determining product quality and commercial acceptance and other small quantity coatings, if the coating meets the following criteria:

(1) The quantity of coating used does not exceed 50 gallons per year for a single coating and a total of 200 gallons per year for all coatings combined for the facility.

(2) The owner or operator of the facility requests, in writing, and the Department approves, in writing, the exemption prior to use of the coating.

(h) *Work practice requirements for cleaning materials.* The owner or operator of a paper, film or foil surface coating process subject to subsection (a) shall comply with the following work practices for cleaning materials:

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

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

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

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

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

Table I

Emission Limits of VOCs for Paper, Film and Foil Surface Coatings if Potential VOC Emissions from a Single Line, Prior to Control, are 25 Tons per Year or More

**Weight of VOC per Weight of
Coating Solids, as Applied**

| <i>Units</i> | <i>RACT Limits</i> | |
|--|--|--|
| | <i>Pressure Sensitive Tape and Label Surface Coating</i> | <i>Paper, Film, and Foil Surface Coating (Not including Pressure Sensitive Tape and Label Surface Coating)</i> |
| kg VOC/kg solids (lb VOC/lb solids) | 0.20 | 0.40 |
| kg VOC/kg coating (lb VOC/lb coating) | 0.067 | 0.08 |

Table II

Emission Limit of VOCs for Paper Coating if Actual VOC Emissions have Exceeded 3 Pounds per Hour, 15 Pounds per Day or 2.7 Tons per Year in Any Year Since January 1, 1987

**Weight of VOC per Volume of
Coating Solids, as Applied**

| <i>Units</i> | <i>RACT Limit Paper Coating</i> |
|---------------------------|-------------------------------------|
| lb voc/gal coating solids | 4.84 |
| kg voc/l coating solids | 0.58 |

Authority

The provisions of this § 129.52b issued under section 5 of the Air Pollution Control Act (35 P. S. § 4005).

Source

The provisions of this § 129.52b adopted November 19, 2010, effective November 20, 2010, 40 Pa.B. 6646.

Cross References

This section cited in 25 Pa. Code § 121.1 (relating to definitions); 25 Pa. Code § 129.51 (relating to general); and 25 Pa. Code § 129.52 (relating to surface coating processes).