

SUBPART RR - Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations (Delegation Effective 3/19/87;
Rev. Effective 11/3/92)

RULE 260.440. APPLICABILITY AND DESIGNATION OF AFFECTED FACILITY

(a) The affected facility to which the provisions of this subpart apply is each coating line used in the manufacture of pressure sensitive tape and label materials.

(b) Any affected facility which inputs to the coating process 45 Mg (49.6 tons) of VOC or less per 12 month period is not subject to the emission limits of Rule 260.442(a), however, the affected facility is subject to the requirements of all other applicable sections of this subpart. If the amount of VOC input exceeds 45 Mg per 12 month period, the coating line will become subject to Rule 260.442(a) and all other sections of this subpart.

(c) This subpart applies to any affected facility which begins construction, modification, or reconstruction after December 30, 1980.

RULE 260.441. DEFINITIONS AND SYMBOLS

Except as otherwise required by the context, terms used in this subpart are defined in the Act, in Subpart A of this Regulation, or in this section as follows:

(a) **"Coating Applicator"** means an apparatus used to apply a surface coating to a continuous web.

(b) **"Coating Line"** means any number or combination of adhesive, release, or precoat coating applicators, flashoff areas, and ovens which coat a continuous web, located between a web unwind station and a web rewind station, to produce pressure sensitive tape and label materials.

(c) **"Coatings Solids Applied"** means the solids content of the coated adhesive, release, or precoat as measured by Reference Method 24.

(d) **"Flashoff Area"** means the portion of a coating line after the coating applicator and usually before the oven entrance.

(e) **"Fugitive Volatile Organic Compounds"** means any volatile organic compounds which are emitted from the coating applicator and flashoff areas and are not emitted in the oven.

(f) **"Hood or Enclosure"** means any device used to capture fugitive volatile organic compounds.

(g) **"Oven"** means a chamber which uses heat or irradiation to bake, cure, polymerize, or dry a surface coating.

(h) **"Precoat"** means a coating operation in which a coating other than an adhesive or release is applied to a surface during the production of a pressure sensitive tape or label product.

(i) **"Solvent Applied in the Coating"** means all organic solvent contained in the adhesive, release, and precoat formulations that is metered into the coating applicator from the formulation area.

(j) **"Total Enclosure"** means a structure or building around the coating applicator and flashoff area or the entire coating line for the purpose of confining and totally capturing fugitive VOC emissions.

(k) **"VOC"** means volatile organic compound.

All symbols used in this subpart not defined below are given meaning in the Act or in Subpart A of this Regulation.

a = the gas stream vents exiting the emission control device.

b = the gas stream vents entering the emission control device.

C_{aj} = the concentration of VOC (carbon equivalent) in each gas stream (j) exiting the emission device, in parts per million by volume.

C_{bi} = the concentration of VOC (carbon equivalent) in each gas stream (i) entering the emission control device, in parts per million by volume.

C_{fk} = the concentration of VOC (carbon equivalent) in each gas stream (k) emitted directly to the atmosphere, in parts per million by volume.

G = the calculated weighted average mass (kg) of VOC per mass (kg) of coating solids applied each calendar month.

M_{ci} = the total mass (kg) of each coating (i) applied during the calendar month as determined from facility records.

M_r = the total mass (kg) of solvent recovered for a calendar month.

Q_{aj} = the volumetric flow rate of each effluent gas stream (j) exiting the emission control device, in dry standard cubic meters per hour.

Q_{bi} = the volumetric flow rate of each effluent gas stream (i) exiting the emission control device, in dry standard cubic meters per hour.

Q_{fk} = the volumetric flow rate of each effluent gas stream (k) emitted to the atmosphere, in dry standard cubic meters per hour.

- R = the overall VOC emission reduction achieved for a calendar month (in percent).
- R_q = the required overall VOC emission reduction (in percent).
- W_{oi} = the weight fraction of organics applied of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.
- W_{si} = the weight fraction of solids of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.

RULE 260.442. STANDARD FOR VOLATILE ORGANIC COMPOUNDS

- (a) On and after the date on which the performance test required by Rule 260.8 has been completed, each owner or operator subject to this subpart shall:
- (1) Cause the discharge into the atmosphere from an affected facility to be not more than 0.20 kg VOC/kg of coating solids applied as calculated on a weighted average basis for one calendar month; or
 - (2) Demonstrate for each affected facility:
 - (i) a 90 percent overall VOC emission reduction as calculated over a calendar month; or
 - (ii) the percent overall VOC emission reduction specified in Rule 260.443(b) as calculated over a calendar month.

RULE 260.443. COMPLIANCE PROVISIONS

- (a) To determine compliance with Rule 260.442 the owner or operator of the affected facility shall calculate a weighted average of the mass of solvent used per mass of coating solids applied for a one calendar month period according to the following procedures:
- (1) Determine the weight fraction of organics and the weight fraction of solids of each coating applied by using EPA Reference Method 24 or by the coating manufacturer's formulation data.
 - (2) Compute the weighted average by the following equation:

$$G = \frac{\sum_{i=1}^n W_{oi} M_{ci}}{\sum_{i=1}^n W_{si} M_{ci}}$$

(3) For each affected facility where the value of G is less than or equal to 0.20 kg VOC per kg of coating solids applied, the affected facility is in compliance with Rule 260.442(a)(1).

(b) To determine compliance with rule 260.442(a)(2), the owner or operator shall calculate the required overall VOC emission reduction according to the following equation:

$$R_q = \frac{G - 0.20}{G} \times 100$$

If R_q is less than or equal to 90 percent, then the required overall VOC emission reduction is R_q . If R_q is greater than 90 percent, then the required overall VOC emission reduction is 90 percent.

(c) Where compliance with the emission limits specified in Rule 260.442(a)(2) is achieved through the use of a solvent recovery system, the owner or operator shall determine the overall VOC emission reduction for a one calendar month period by the following equation:

$$R = \frac{M_r}{\sum_{i=1}^n W_{oi} M_{ci}} \times 100$$

If the R value is equal to or greater than the R_q value specified in Section (b) of this rule, then compliance with Rule 260.442(a)(2) is demonstrated.

(d) Where compliance with the emission limit specified in Rule 260.442(a)(2) is achieved through the use of a solvent destruction device, the owner or operator shall determine calendar monthly compliance by comparing the monthly required overall VOC emission reduction specified in Section (b) of this rule to the overall VOC emission reduction demonstrated in the most recent performance test which complied with Rule 260.442(a)(2). If the monthly required overall VOC emission reduction is less than or equal to the overall VOC reduction of the most recent performance test, the affected facility is in compliance with Rule 260.442(a)(2).

(e) Where compliance with Rule 260.442(a)(2) is achieved through the use of a solvent destruction device, the owner or operator shall continuously record the destruction device combustion temperature during coating operations for thermal incineration destruction devices or the gas temperature upstream and downstream of the incinerator catalyst bed during coating

operations for catalytic incineration destruction devices. For thermal incineration destruction devices the owner or operator shall record all 3-hour periods (during actual coating operations) during which the average temperature of the device is more than 10° C (50° F) below the average temperature of the device during the most recent performance test complying with Rule 260.442(a)(2). For catalytic incineration destruction devices, the owner or operator shall record all 3-hour periods (during actual coating operations) during which the average temperature of the device immediately before the catalyst bed is more than 10° C (50° F) below the average temperature of the device during the most recent performance test complying with Rule 260.442(a)(2), and all 3-hour periods (during actual coating operations) during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test complying with Rule 260.442(a)(2).

(f) After the initial performance test required for all affected facilities under Rule 260.8, compliance with the VOC emission limitation and percentage reduction requirements under Rule 260.442 is based on the average emission reduction for one calendar month. A separate compliance test is completed at the end of each calendar month after the initial performance test, and a new calendar month's average VOC emission reduction is calculated to show compliance with the standard.

(g) If a common emission control device is used to recover or destroy solvent from more than one affected facility, the performance of that control device is assumed to be equal for each of the affected facilities. Compliance with Rule 260.442(a)(3) is determined by the methods specified in Sections (c) and (d) of this rule and is performed simultaneously on all affected facilities.

(h) If a common emission control device is used to recover solvent from an existing facility (or facilities) as well as from an affected facility (or facilities), the overall VOC emission reduction for the affected facility (or facilities), for the purpose of compliance, shall be determined by the following procedures:

(1) The owner or operator of the existing facility (or facilities) shall determine the mass of solvent recovered for a calendar month period from the existing facility (or facilities) prior to the connection of the affected facility (or facilities) to the emission control device.

(2) The affected facility (or facilities) shall then be connected to the emission control device.

(3) The owner or operator shall determine the total mass of solvent recovered from both the existing and affected facilities over a calendar month period. The mass of solvent determined in Subsection (h)(1) of this rule from the existing facility shall be subtracted from the total mass of recovered solvent to obtain the mass of solvent recovered from the affected facility (or facilities). The overall VOC emission reduction of the affected facility (or facilities) can then be determined as specified in Section (c) of this rule.

(i) If a common emission control device is used to destruct solvent from an existing facility (or facilities) as well as from an affected facility (or facilities) the overall VOC emission

reduction for the affected facility (or facilities), for the purpose of compliance, shall be determined by the following procedures:

(1) The owner or operator shall operate the emission control device with both the existing and affected facilities connected.

(2) The concentration of VOC (in parts per million by volume) after the common emission control device shall be determined as specified in Rule 260.444(c). This concentration is used in the calculation of compliance for both the existing and affected facilities.

(3) The volumetric flow out of the common control device attributable to the affected facility (or facilities) shall be calculated by first determining the ratio of the volumetric flow entering the common control device attributable to the affected facility (or facilities) to the total volumetric flow entering the common control device from both existing and affected facilities. The multiplication of this ratio by the total volumetric flow out of the common control device yields the flow attributable to the affected facility (or facilities). Compliance is determined by the use of the equation specified in Rule 260.444(c).

(j) Startups and shutdowns are normal operation for this source category. Emissions from these operations are to be included when determining if the standard specified in Rule 260.442(a)(2) is being attained.

RULE 260.444. PERFORMANCE TEST PROCEDURES

(a) The performance test for affected facilities complying with Rule 260.442 without the use of add-on controls shall be identical to the procedures specified in Rule 260.443(a).

(b) The performance test for affected facilities controlled by a solvent recovery device shall be conducted as follows:

(1) The performance test shall be a one calendar month test and not the average of three runs as specified in Rule 260.8(f).

(2) The weighted average mass of VOC per mass of coating solids applied for a one calendar month period shall be determined as specified in Rules 260.443(a)(1) and 260.443(a)(2).

(3) Calculate the required percent overall VOC emission reduction as specified in Rule 260.443(b).

(4) Inventory VOC usage and VOC recovery for a one calendar month period.

(5) Determine the percent overall VOC emission reduction as specified in Rule 260.443(c).

(c) The performance test for affected facilities controlled by a solvent destruction device shall be conducted as follows:

(1) The performance of the solvent destruction device shall be determined by averaging the results of three test runs as specified in Rule 260.8(f).

(2) Determine for each affected facility prior to each test run the weighted average mass of VOC per mass of coating solids applied being used at the facility. The weighted average shall be determined as specified in Rule 260.443(a). In this application the quantities of W_{oi} , W_{si} , and M_i shall be determined for the time period of each test run and not a calendar month as specified in Rule 260.441.

(3) Calculate the required percent overall VOC emission reduction as specified in Rule 260.443(b).

(4) Determine the percent overall VOC emission reduction of the solvent destruction device by the following equation and procedures:

$$R = \frac{\sum_{i=1}^n Q_{bi} C_{bi} - \sum_{i=1}^m Q_{aj} C_{aj}}{\sum_{i=1}^n Q_{bi} C_{bi} + \sum_{k=1}^p Q_{fk} C_{fk}} \times 100$$

(i) The owner or operator of the affected facility shall construct the overall VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in Rule 260.446(b).

(ii) The owner or operator of an affected facility shall construct a temporary total enclosure around the coating line applicator and flashoff area during the performance test for the purpose of capturing fugitive VOC emissions. If a permanent total enclosure exists in the affected facility prior to the performance test and the Control Officer is satisfied that the enclosure is totally capturing fugitive VOC emissions, then no additional total enclosure will be required for the performance test.

(iii) For each affected facility where the value of R is greater than or equal to the value of R_q calculated in Rule 260.443(b), compliance with Rule 260.442(a)(2) is demonstrated.

RULE 260.445. MONITORING OF OPERATIONS AND RECORDKEEPING

(a) The owner or operator of an affected facility, subject to this subpart shall maintain a calendar month record of all coatings used and the results the reference test method specified in Section 60.446(a), Part 60, Chapter I, Title 40, Code of Federal Regulations, or the manufacturer's formulation data used for determining the VOC content of those coatings.

(b) The owner or operator of an affected facility, which is controlled by a solvent recovery device, shall maintain a calendar month record of the amount of solvent applied in the coating at each affected facility.

(c) The owner or operator of an affected facility, which is controlled by a solvent recovery device, shall install, calibrate, maintain, and operate a monitoring device for indicating the cumulative amount of solvent recovered by the device over a calendar month period. The monitoring device shall be accurate within ± 2.0 percent. The owner or operator shall maintain a calendar month record of the amount of solvent recovered by the device.

(d) The owner or operator of an affected facility operating at the conditions specified in Rule 260.440(b) shall maintain a 12-month record of the amount of solvent applied in the coating at the facility.

(e) The owner or operator of an affected facility controlled by a thermal incineration solvent destruction device shall install, calibrate, maintain, and operate a monitoring device which continuously indicates and records the temperature of the solvent destruction device's exhaust gases. The monitoring device shall have an accuracy of ± 0.75 percent of the temperature being measured expressed in degrees Celsius, or $\pm 2.5^{\circ}$ C, whichever is greater.

(f) The owner or operator of an affected facility controlled by a catalytic incineration solvent destruction device shall install, calibrate, maintain, and operate a monitoring device which continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed.

(g) The owner or operator of an affected facility controlled by a solvent destruction device which uses a hood or enclosure to capture fugitive VOC emissions shall install, calibrate, maintain, and operate a monitoring device which continuously indicates that the hood or enclosure is operating. No continuous monitor shall be required if the owner or operator can demonstrate that the hood or enclosure system is interlocked with the affected facility's oven recirculation air system.

(h) Records of the measurements required in Rules 260.443 and 260.445 must be retained for at least two years following the dates of measurements.

RULE 260.446. TEST METHODS AND PROCEDURES

Performance tests shall be conducted as specified in Part 60, Chapter I, Title 40, Code of Federal Regulations, Section 60.446.

RULE 260.447. REPORTING REQUIREMENTS (Rev. Effective 11/3/92)

(a) For all affected facilities subject to compliance with Rule 260.442, the performance test data and results from the performance test shall be submitted to the Control Officer as specified in Rule 260.8 (a) of the General Provisions (40 CFR Part 60, Subpart A).

(b) Following the initial performance test, the owner or operator of each affected facility shall submit quarterly reports, as specified in Rule 260.7(c), to the Control Officer of exceedances of the VOC emission limits specified in Rule 260.442. If no such exceedances occur during a particular quarter, a report stating this shall be submitted to the Control Officer semiannually.

(c) The owner or operator of each affected facility shall also submit reports semiannually to the Control Officer when the incinerator temperature drops as defined under Rule 260.443(e). If no such periods occur, the owner or operator shall state this in the report.

(d) The requirements of this rule shall remain in force until and unless EPA, the delegating enforcement authority to a State under Section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this rule, provided that they comply with the requirements established by the State.