Subpart FFF-Standards of Performance for Flexible Vinyl and Urethane Coating and Printing

Applicability of affected facility - §60.580

Source	All Emissions
General	1.) This subpart applies to each rotogravure printing line used to print or coat flexible vinyl or urethane products. 2.) This subpart applies to any affected facility which begins construction, modification, or reconstruction after January18, 1983. 3.) For facilities controlled by a solvent recovery emission control device, the provisions of §60.584(a) requiring monitoring of operations will not apply until EPA has promulgated performance specifications under appendix B for the continuous monitoring system. After the promulgation of performance specifications, these provisions will apply to each affected facility under paragraph (2) of this section. Facilities controlled by a solvent recovery emission control device that become subject to the standard prior to promulgation of performance specifications must conduct performance tests in accordance with §60.13(b) after performance specifications are promulgated.

Standard for volatile organic compounds - §60.582

Source	All Emissions
General	1.) On and after the date on which the performance test required by §60.8 has been completed, each owner or operator subject to this subpart shall either: a.) Use inks with a weighted average VOC content less than 1.0 kilogram VOC per kilogram ink solids at each affected facility, or b.) Reduce VOC emissions to the atmosphere by 85 percent from each affected facility.

Test methods and procedures - §60.583

Source	All Emissions
General	1.) Reference Methods in appendix A of this part, except as provided under §60.8(b), shall be used to determine compliance with §60.582(a) as follows: a.) Method 24 for analysis of inks. If nonphotochemically reactive solvents are used in the inks, standard gas chromatographic techniques may be used to identify and quantify these solvents. The results of Reference Method 24 may be adjusted to subtract these solvents from the measured VOC content. b.) Method 25A for VOC concentration (the calibration gas shall be propane); c.) Method 1 for sample and velocity traverses; d.) Method 2 for velocity and volumetric flow rates; e.) Method 3 for gas analysis; f.) Method 4 for stack gas moisture. 2.) Facility shall determine compliance with the standard by determining the VOC content of the inks according to the procedures found in §60.583 (b) (1-5).
Facilities using an inventory system to determine compliance with the standards	Facility shall use the following procedures to determine compliance: 1.) The inventory system shall accurately account to the nearest kilogram for the VOC content of all inks and dilution solvent used, recycled, and discarded for each affected facility during the averaging period. Separate records must be kept for each affected facility. 2.) To determine VOC content of inks and dilution solvent used or recycled, Reference Method 24 or ink manufacturers formulation data must be used in combination with plant blending records (if plant blending is done) or inventory records or purchase records for new inks or dilution solvent. 3.) For inks to be discarded, only Reference Method 24 shall be used to determine the VOC content. Inks to be discarded may be combined prior to measurement of volume or weight and testing by Reference Method 24. 4.) The Administrator may require the use of Reference Method 24 if there is a question concerning the accuracy of the ink manufacturer's data or plant records. 5.) The Administrator shall approve the inventory system of accounting for VOC content prior to the initial performance test.

Facility controlled by a solvent recovery emission control device or an incineration control device	Facility shall use the following procedures to determine compliance: 1.) The performance test shall consist of three runs. Each .test run must last a minimum of 30 minutes and shall continue until the printing operation is interrupted or until 180 minutes of continuous operation occurs. During each test run, the print line shall be printing continuously and operating normally. The VOC emission reduction efficiency achieved for each test run is averaged over the entire test run period. 2.) VOC concentration values at each site shall be measured simultaneously. 3.) The volumetric flow rate shall be determined from one Method 2 measurement for each test run conducted immediately prior to, during, or after that test run. Volumetric flow rates at each site do not need to be measured simultaneously. 4.) In order to determine capture efficiency from an affected facility, all fugitive VOC emissions from the affected facility shall be captured and vented through stacks suitable for measurement. During a performance test, the owner or operator of an affected facility located in an area with other sources of VOC shall isolate the affected facility from other sources of VOC. These two requirements shall be accomplished using one of the following methods: a.) Build a permanent enclosure around the affected facility; b.) Build a temporary enclosure around the affected facility and duplicate, to an extent that is reasonably feasible, the ventilation conditions that are in effect when the affected facility is not enclosed (one way to do this is to divide the room exhaust rate by the volume of the room and then duplicate that quotient or 20 air changes per hour, whichever is smaller, in the temporary enclosure); or c.) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected facility through any building ventilation system and other room exhausts such as print line ovens and embossers. 5.) For each affected facility, compliance with §60.582(a)(2) has been demonstrated if the average value of the overall control efficiency (EF) for the three runs is equal to or greater than 85 percent. An overall control efficiency is calculated for each run as found in §60.583 (d) (5).

Monitoring of operations and recordkeeping requirements - §60.584

Source	All Emissions
General	Facilities shall record time periods of operation when an emission control device is not in use.
Facility controlled by a solvent recovery emission control device	Facilities shall install, calibrate, operate, and maintain a monitoring system which continuously measures and records the VOC concentration of the exhaust vent stream from the control device and shall comply with the following requirements: 1.) The continuous monitoring system shall be installed in a location that is representative of the VOC concentration in the exhaust vent, at least two equivalent stack diameters from the exhaust point, and protected from interferences due to wind, weather, or other processes. 2.) During the performance test, the owner or operator shall determine and record the average exhaust vent VOC concentration in parts per million by volume. After the performance test, the owner or operator shall determine and, in addition to the record made by the continuous monitoring device, record the average exhaust vent VOC concentration for each 3-hour clock period of printing operation when the average concentration is greater than 50 ppm and more than 20 percent greater than the average concentration value demonstrated during the most recent performance test.
Facility controlled by a thermal incineration emission control device	Facility shall install, calibrate, operate, and maintain a monitoring device that continuously measures and records the temperature of the control device exhaust gases and shall comply with the following requirements: 1.) The continuous monitoring device shall be calibrated annually and have an accuracy of ±0.75 percent of the temperature being measured or ±2.5 C, whichever is greater. 2.) During the performance test, the owner or operator shall determine and record the average temperature of the control device exhaust gases. After the performance test, the owner or operator shall determine and record, in addition to the record made by the continuous monitoring device, the average temperature for each 3-hour clock period of printing operation when the average temperature of the exhaust gases is more than 28° C below the average temperature demonstrated during the most recent performance test.

Facility controlled by a catalytic incineration emission control device	Facilities shall install, calibrate, operate, and maintain monitoring devices that continuously measure and record the gas temperatures both upstream and downstream of the catalyst bed and shall comply with the following requirements: 1.) Each continuous monitoring device shall be calibrated annually and have an accuracy of ±0.75 percent of the temperature being measured or ±2.5 C, whichever is greater. b.) During the performance test, the owner or operator shall determine and record the average gas temperature both upstream and downstream of the catalyst bed. After the performance test, the owner or operator shall determine and record, in addition to the record made by the continuous monitoring device, the average temperatures for each 3-hour clock period of printing operation when the average temperature of the gas stream before the catalyst bed is more than 28˚C below the average temperature demonstrated during the most recent performance test or 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.

Reporting requirements - §60.585

Source	All Emissions
General	1.) For all affected facilities subject to compliance with §60.582, the performance test data and results from the performance test shall be submitted to the Administrator as specified in §60.8(a). 2.) The owner or operator of each affected facility shall submit semiannual reports to the Administrator of occurrences of the following: a.) Exceedances of the weighted average VOC content specified in §60.582(a)(1); b.) Exceedances of the average value of the exhaust vent VOC concentration as defined under §60.584(a)(2); c.) Drops in the incinerator temperature as defined under §60.584(b)(2); and d.) Drops in the average temperature of the gas stream immediately before the catalyst bed or drops in the average temperature across the catalyst bed as defined under §60.584(c)(2). 3.) The reports required under paragraph (b) shall be postmarked within 30 days following the end of the second and fourth calendar quarters.