

5-253.9 Offset Lithographic and Letterpress Printing

(a) Applicability.

- (1) This section applies to any *offset lithographic printing operation* and any *letterpress printing operation*, except any such printing operations within a *stationary source* whose *actual emissions* without *control devices* from all printing operations within the source are less than 3 tons of *volatile organic compounds* per 12-month rolling period. Once a source is subject to this section, it shall remain so, even if its *emissions* levels later fall below the applicability threshold.
- (2) Existing sources subject to this standard must comply within 24 months of the promulgation of this section.

(b) Definitions. For the purpose of this section, the following definitions apply, in addition to those of Section 5-101 of this chapter.

"*Cleaning materials*" means all materials used for cleaning a press, press parts, or to remove dried ink from areas around a press including blanket washing, roller washing, plate cleaners, metering roller cleaners, impression cylinder cleaners, rubber rejuvenators, and other cleaners. Cleaning materials do not include materials used on electronic components of a press, pre-press cleaning operations (e.g., platemaking), post-press cleaning operations (e.g., binding), cleaning supplies (e.g., detergents) used to clean the floor (other than dried ink) in the area around a press, or cleaning performed in parts washers or cold cleaners.

"*Cold-set*" means a press that uses inks that do not require heat to set or dry and instead rely primarily on absorption into the media. Cold-set inks tend to have lower *volatile organic compound* contents and higher vegetable oil content than heat-set inks and permanently retain most of the *volatile organic compounds* in the substrate.

"*Fountain solution*" means a water-based material that is applied to the non-image areas of the lithographic plate that were rendered water receptive thus making these areas unreceptive to ink. Fountain solutions have historically contained significant amounts of isopropyl alcohol which serves as a wetting agent or "dampening aid" to enhance the spreadability of the fountain solution across the plate.

"*Heat-set*" means a press that uses inks that require heat to set and dry the inks, usually in a printing press dryer. Heat-set inks tend to have higher *volatile organic compound* contents and lower vegetable oil content than cold-set inks and much of these compounds are volatilized off in the press dryer.

"*Letterpress printing operation*" means a printing process in which the image area is raised relative to the non-image area and the paste ink is transferred to the substrate directly from the image surface.

"*Offset lithographic printing operation*" means a planographic printing process in which the printing image areas and non-image areas are on the same plane on the same thin lithographic plate where the image area is rendered oil (ink) receptive and the non-image area is rendered water

receptive. The ink is transferred from an ink roller to the printing image areas of the lithographic plate, where it is confined to the plate areas that are rendered oil (ink) receptive and repelled from the plate areas that are rendered water receptive that instead pick up the water-based *fountain solution*. The ink is then transferred to a rubber-covered, intermediate "offset" cylinder before being transferred to the substrate being printed.

"*Sheet-fed press*" means a press where individual sheets of paper or other substrate are fed to the press.

"*Web-fed press*" means a press where continuous rolls of substrate material are fed to the press and rewound or cut to size after printing.

(c) Standards.

(1) Heat-set printing press dryers. Each press dryer shall be equipped with an effective emission capture and control system that shall comply with at least one of the following limitations: (1) the system shall achieve a minimum 99.0 percent overall destruction efficiency of *volatile organic compounds* from the press dryer, or (2) the system shall achieve an outlet *volatile organic compound* concentration not to exceed 5 ppmvd as hexane. Notwithstanding the above, presses used exclusively for printing of books and presses with a maximum web width of 22 inches or less shall not be subject to the above limitations.

(2) Fountain solutions.

(i) Heat-set printing operation fountain solutions. Each fountain solution shall comply with at least one of the following limitations: (1) the *volatile organic compound* content of the *fountain solution* as applied shall not exceed 1.6 percent by weight, (2) the *volatile organic compound* content of the *fountain solution* as applied shall not exceed 3.0 percent by weight if the fountain solution is refrigerated to 60 degrees F or below, or (3) the fountain solution as applied shall contain no alcohol and shall not exceed 5 percent by weight alcohol substitutes.

(ii) Cold-set web-fed press printing operations. Each fountain solution as applied shall contain no alcohol and shall not exceed 5 percent by weight alcohol substitutes.

(iii) Cold-set sheet-fed press printing operations. Each fountain solution shall comply with at least one of the following limitations: (1) the *volatile organic compound* content of the *fountain solution* as applied shall not exceed 5.0 percent by weight, (2) the *volatile organic compound* content of the *fountain solution* as applied shall not exceed 8.5 percent by weight if the fountain solution is refrigerated to 60 degrees F or below, or (3) the fountain solution as applied shall contain no alcohol and shall not exceed 5 percent by weight alcohol substitutes. Notwithstanding the above, sheet-fed presses with a maximum sheet size of 11 inches by 17 inches or smaller or any sheet-fed presses with a total fountain solution reservoir of 1 gallon or less shall not be subject to the above limitations.

- (3) Cleaning materials. Each *cleaning material* used shall comply with at least one of the following limitations: (1) the composite vapor pressure of the cleaning material as applied shall not exceed 10 mmHG at 20 degrees C, or (2) the *volatile organic compound* content of the *cleaning material* as applied shall not exceed 70 percent by weight. All cleaning materials and shop rags contaminated with cleaning materials shall be kept in normally closed containers. Notwithstanding the above, a facility may use up to 110 gallons per calendar year of cleaning materials for all printing operations combined at the *stationary source* that do not meet either of the content limitations above.

(d) Recordkeeping and Reporting

- (1) The owner or operator of any *offset lithographic printing operation* or any *letterpress printing operation* shall maintain records sufficient to determine the *volatile organic compound* emissions from all printing operations at the *stationary source* per 12-month rolling period, including the following:
 - (i) The quantity of each ink, *fountain solution* and *cleaning material* used each day.
 - (ii) The *volatile organic compound* content of each ink, *fountain solution* and cleaning material used each day and the *Material Safety Data Sheet* for each.
- (2) All such records shall be retained for a minimum of 5 years and shall be made available to the *Secretary* upon request.