

## Environmental Protection Agency

## § 60.424

reaction ammonium sulfate stream) to the crystallizer stage, prior to any recycle streams.

*Ammonium sulfate manufacturing plant* means any plant which produces ammonium sulfate.

*Caprolactam by-product ammonium sulfate manufacturing plant* means any plant which produces ammonium sulfate as a by-product from process streams generated during caprolactam manufacture.

*Coke oven by-product ammonium sulfate manufacturing plant* means any plant which produces ammonium sulfate by reacting sulfuric acid with ammonia recovered as a by-product from the manufacture of coke.

*Synthetic ammonium sulfate manufacturing plant* means any plant which produces ammonium sulfate by direct combination of ammonia and sulfuric acid.

### § 60.422 Standards for particulate matter.

On or after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator of an ammonium sulfate dryer subject to the provisions of this subpart shall cause to be discharged into the atmosphere, from any ammonium sulfate dryer, particulate matter at an emission rate exceeding 0.15 kilogram of particulate per megagram of ammonium sulfate produced (0.30 pound of particulate per ton of ammonium sulfate produced) and exhaust gases with greater than 15 percent opacity.

### § 60.423 Monitoring of operations.

(a) The owner or operator of any ammonium sulfate manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate flow monitoring devices which can be used to determine the mass flow of ammonium sulfate feed material streams to the process. The flow monitoring device shall have an accuracy of  $\pm 5$  percent over its range. However, if the plant uses weigh scales of the same accuracy to directly measure production rate of ammonium sulfate, the use of flow monitoring devices is not required.

(b) The owner or operator of any ammonium sulfate manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the emission control system. The monitoring device shall have an accuracy of  $\pm 5$  percent over its operating range.

### § 60.424 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.422 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = (c_s Q_{sd}) / (PK)$$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton) of ammonium sulfate produced.

$c_s$ =concentration of particulate matter, g/dscm (g/dscf).

$Q_{sd}$ =volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=production rate of ammonium sulfate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration ( $c_s$ ) and volumetric flow rate ( $Q_{sd}$ ) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 1.50 dscm (53 dscf).

(3) Direct measurement using product weigh scales or computed from material balance shall be used to determine the rate (P) of the ammonium sulfate production. If production rate is determined by material balance, the following equations shall be used:

(i) For synthetic and coke oven by-product ammonium sulfate plants:

$$P = ABCK^{1/4}$$

where:

A=sulfuric acid flow rate to the reactor/crystallizer averaged over the time-period taken to conduct the run, liter/min.

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B=acid density (a function of acid strength and temperature), g/cc.  
C=acid strength, decimal fraction.  
K<sup>1/4</sup>=conversion factor, 0.0808 (Mg-min-cc)/(g-hr-liter) [0.0891 (ton-min-cc)/(g-hr-liter)].

(ii) For caprolactam by-product ammonium sulfate plants:

P=DEFK"

where:

D=total combined feed stream flow rate to the ammonium crystallizer before the point where any recycle streams enter the stream averaged over the time-period taken to conduct the test run, liter/min.

E=density of the process stream solution, g/liter.

F=percent mass of ammonium sulfate in the process solution, decimal fraction.

K"=conversion factor, 6.0 x 10<sup>-5</sup> (Mg-min)/(g-hr) [6.614 x 10<sup>-5</sup> (ton-min)/(g-hr)].

(3) Method 9 and the procedures in §60.11 shall be used to determine the opacity.

[54 FR 6676, Feb. 14, 1989]

**Subpart QQ—Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing**

SOURCE: 47 FR 50649, Nov. 8, 1982, unless otherwise noted.

**§ 60.430 Applicability and designation of affected facility.**

(a) Except as provided in paragraph (b) of this section, the affected facility to which the provisions of this subpart apply is each publication rotogravure printing press.

(b) The provisions of this subpart do not apply to proof presses.

(c) Any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after October 28, 1980 is subject to the requirements of this subpart.

**§ 60.431 Definitions and notations.**

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

*Automatic temperature compensator* means a device that continuously senses the temperature of fluid flowing through a metering device and automatically adjusts the registration of the measured volume to the corrected

equivalent volume at a base temperature.

*Base temperature* means an arbitrary reference temperature for determining liquid densities or adjusting the measured volume of a liquid quantity.

*Density* means the mass of a unit volume of liquid, expressed as grams per cubic centimeter, kilograms per liter, or pounds per gallon, at a specified temperature.

*Gravure cylinder* means a printing cylinder with an intaglio image consisting of minute cells or indentations specially engraved or etched into the cylinder's surface to hold ink when continuously revolved through a fountain of ink.

*Performance averaging period* means 30 calendar days, one calendar month, or four consecutive weeks as specified in sections of this subpart.

*Proof press* means any device used only to check the quality of the image formation of newly engraved or etched gravure cylinders and prints only non-saleable items.

*Publication rotogravure printing press* means any number of rotogravure printing units capable of printing simultaneously on the same continuous web or substrate and includes any associated device for continuously cutting and folding the printed web, where the following saleable paper products are printed:

Catalogues, including mail order and premium,

Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

Magazines,

Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

Periodicals, and

Telephone and other directories, including business reference services.

*Raw ink* means all purchased ink.