§ 60.430

(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 the result of computations using a 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.
- \(B\) = acid density (a function of acid strength and temperature), g/cc.
- \(C\) = acid strength, decimal fraction.
- \(K^{1/4}\) = conversion factor, 0.0808 \(\text{Mg-min-cc)/(g-hr-liter)}\) [0.0891 \(\text{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 \times 10^{-3} \(\text{Mg-min)/(g-hr)}\) [6.614 \times 10^{-5} \(\text{ton-min)/(g-hr)}\].

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

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 si-
multaneously on the same continuous
web or substrate and includes any asso-
ciated device for continuously cutting
and folding the printed web, where the
following saleable paper products are printed:

- Catalogues, including mail order and pre-
imum
- Direct mail advertisements, including cir-
culars, 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, cir-
cular folders, announcements, package in-
serts, book jackets, market circulars, maga-
zine inserts, and shopping news
- Newspapers, magazine and comic supple-
ments for newspapers, and preprinted news-
paper inserts, including hi-fi and spectacular
rolls and sections
- Periodicals, and
- Telephone and other directories, including
business reference services

Raw ink means all purchased ink.

Related coatings means all non-ink
purchased liquids and liquid-solid mix-
tures containing VOC solvent, usually
referred to as extenders or varnishes,
that are used at publication roto-
gravure printing presses

Rotogravure printing unit means any
device designed to print one color ink
on one side of a continuous web or sub-
strate using a gravure cylinder

Solvant-borne ink systems means ink
and related coating mixtures whose
volatile portion consists essentially of
VOC solvent with not more than five
weight percent water, as applied to the
gravure cylinder

Solvant recovery system means an air
pollution control system by which VOC
solvent vapors in air or other gases are
captured and directed through a con-
denser(s) or a vessel(s) containing beds of
activated carbon or other adsorb-
ents. For the condensation method,
the solvent is recovered directly from the
condenser. For the adsorption method,
the vapors are adsorbed, then desorbed
by steam or other media, and finally
condensed and recovered.

VOC means volatile organic com-
pound

VOC solvent means an organic liquid
or liquid mixture consisting of VOC
components

Waterborne ink systems means ink and
related coating mixtures whose vola-
tile portion consists of a mixture of
VOC solvent and more than five weight
percent water, as applied to the gra-
vure cylinder.

(b) Symbols used in this subpart are
defined as follows:

- \( D_{ni} \) = the density at the base temperature of
  VOC solvent used or recovered during one
  performance averaging period
- \( D_{w} \) = the density of each color of raw ink and
  each related coating (i) used at the subject
  facility (or facilities), at the coating tem-
  perature when the volume of coating used
  is measured
- \( D_{so} \) = the density of each VOC solvent (i) added
  to the ink for dilution at the subject facility
  (or facilities), at the solvent tempera-
  ture when the volume of solvent used is
  measured
- \( D_{wi} \) = the density of each VOC solvent (i) used
  as a cleaning agent at the subject facility
  (or facilities), at the solvent tempera-
  ture when the volume of cleaning solvent
  used is measured.
- \( D_{w} \) = the density of each quantity of water (i)
  added at the subject facility (or facilities)
  for dilution of waterborne ink systems at
  the water temperature when the volume of
dilution water used is measured
- \( D_{so} \) = the density of each quantity of VOC sol-
  vent and miscellaneous solvent-borne
  waste inks and waste VOC solvents (i) re-
  covered from the subject facility (or facili-
ties), at the solvent temperature when the
  volume of solvent recovered is measured.
- \( D_{wc} \) = the density of the VOC solvent contained
  in each raw ink and related coating (i) used
  at the subject facility (or facilities), at the
  coating temperature when the volume of
  coating used is measured.
- \( D_{w} \) = the density of the water contained in
  each waterborne raw ink and related coat-
ing (i) used at the subject facility (or facil-
ties), at the coating temperature when the
  volume of coating used is measured.
- \( L_{ni} \) = the measured liquid volume of each color
  of raw ink and each related coating (i) used
  at the facility of a corresponding VOC con-
tent, \( V_{wi} \) or \( W_{wi} \), with a VOC density, \( D_{ni} \),
  and a coating density, \( D_{ci} \).
- \( L_{so} \) = the measured liquid volume of each VOC
  solvent (i) with corresponding density, \( D_{so} \),
  added to dilute the ink used at the subject
  facility (or facilities)
§ 60.432 Standard for volatile organic compounds.

(a) The performance averaging period for each test is 30 consecutive calendar days and not an average of three separate runs as prescribed under §60.8(f).

(b) Except as provided under paragraphs (f) and (g) of this section, if affected facilities routinely share the same raw ink storage/handling system with existing facilities, then temporary measurement procedures for segregating the raw inks, related coatings, VOC solvent, and water used at the affected facilities must be employed during the test. For this case, an overall emission percentage for the combined facilities as well as for only the affected facilities must be calculated during the test.

(c) For the purpose of measuring bulk storage tank quantities of each color of raw inks and related coatings at the subject facilities during one performance averaging period, the following subscripts are used in this subpart with the above symbols to denote the applicable facility:

1. a=affected facility.
2. b=both affected and existing facilities controlled in common by the same air pollution control equipment.
3. c=existing facility.
4. e=all affected and existing facilities located within the same plant boundary.

§ 60.433 Performance test and compliance provisions.

During the period of the performance test required to be conducted by §60.8 and after the date required for completion of the test, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility VOC equal to more than 16 percent of the total mass of VOC solvent and water used at that facility during any one performance averaging period. The water used includes only that water contained in the waterborne raw inks and related coatings and the water added for dilution with waterborne ink systems.