

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Parts 9 and 63**

[FRL-6345-4]

RIN 2060-AE08

**National Emission Standards for Hazardous Air Pollutants for Source Categories; National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** This action promulgates national emission standards for hazardous air pollutants (NESHAP) for new and existing sources in mineral wool production facilities. Hazardous air pollutants (HAPs) emitted by the facilities covered by this rule include carbonyl sulfide (COS), nine hazardous metals, formaldehyde, and phenol. Exposure to these HAPs may be associated with adverse carcinogenic, respiratory, nervous system, dermal, developmental, and/or reproductive health effects. The EPA estimates that the final rule will reduce nationwide emissions of HAPs from these facilities by 46 megagrams per year (Mg/yr) (51 tons per year (tpy)). In addition, emissions of particulate matter (PM) will be reduced by approximately 186 Mg/yr (205 tpy). This action also amends 40 CFR part 9 by updating the table of currently approved information collection control numbers to include the information requirements contained in this final rule.

These standards implement section 112(d) of the Clean Air Act (Act) by requiring all mineral wool production facilities that are major sources to meet hazardous air pollutant (HAP) emission standards reflecting the application of the maximum achievable control technology (MACT). The emissions reductions achieved by these standards, when combined with the emissions reductions achieved by other similar standards, will provide protection to the public and achieve a primary goal of the Act.

A supplement to the proposed rule was proposed in the **Federal Register** on February 12, 1999 (64 FR 7149). The EPA will give careful consideration to all comments on the supplemental proposal and will amend this final rule in a future action as appropriate.

**EFFECTIVE DATE:** June 1, 1999. See the **SUPPLEMENTARY INFORMATION** section concerning judicial review.

**ADDRESSES:** *Docket.* The docket for this rulemaking containing the information considered by the EPA in development of the final rule is Docket A-95-33. This docket is available for public inspection between 8 a.m. and 5:30 p.m., Monday through Friday, excluding Federal holidays, at the following address: U.S. Environmental Protection Agency, Air and Radiation Docket and Information Center (6102), 401 M Street, SW, Washington, DC 20460; telephone number (202) 260-7548. The docket is located at the above address in Room M-1500, Waterside Mall (ground floor). A reasonable fee may be charged for copying docket materials.

**FOR FURTHER INFORMATION CONTACT:** Ms. Mary Johnson, Minerals and Inorganic Chemicals Group, Emission Standards Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number (919) 541-5025; facsimile number (919) 541-5600; electronic mail address "johnson.mary@epamail.epa.gov".

**SUPPLEMENTARY INFORMATION:**

**Regulated Entities**

Categories and entities potentially regulated by this action include:

Category	Examples of regulated entities
Industry .....	Mineral wool production facilities (SIC 3296).
Federal government ..	None.
State/local/tribal government.	None.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility is regulated by this action, you should examine the applicability criteria in § 63.1177 of the final rule. If you have any questions regarding the applicability of this action to a particular entity, consult the appropriate regional representative:

**Region I:**  
Janet Bowen, Office of Ecosystem Protection, U.S. EPA, Region I, CAP, JFK Federal Building, Boston, MA 02203, (617) 565-3595

**Region II:**  
Kenneth Eng, Air Compliance Branch Chief, U.S. EPA, Region II, 290 Broadway, New York, NY 10007-1866, (212) 637-4000

**Region III:**  
Bernard Turlinski, Air Enforcement Branch Chief, U.S. EPA, Region III, 3AT10, 841 Chestnut Building, Philadelphia, PA 19107, (215) 566-

2110  
**Region IV:**  
Lee Page, Air Enforcement Branch, U.S. EPA, Region IV, Atlanta Federal Center, 61 Forsyth Street, Atlanta, GA 30303-3104, (404) 562-9131

**Region V:**  
George T. Czerniak, Jr., Air Enforcement Branch Chief, U.S. EPA, Region V, 5AE-26, 77 West Jackson Street, Chicago, IL 60604, (312) 353-2088

**Region VI:**  
John R. Hepola, Air Enforcement Branch Chief, U.S. EPA, Region VI, 1445 Ross Avenue, Suite 1200, Dallas, TX 75202-2733, (214) 665-7220

**Region VII:**  
Donald Toensing, Air Permitting and Compliance, Branch Chief, U.S. EPA, Region VII, 726 Minnesota Avenue, Kansas City, KS 66101, (913) 551-7446

**Region VIII:**  
Douglas M. Skie, Air and Technical Operations, Branch Chief, U.S. EPA, Region VIII, 999 18th Street, Suite 500, Denver, CO 80202-2466, (303) 312-6432

**Region IX:**  
Barbara Gross, Air Compliance Branch Chief, U.S. EPA, Region IX, 75 Hawthorne Street, San Francisco, CA 94105, (415) 744-1138

**Region X:**  
Anita Frankel, Air and Radiation Branch Chief, U.S. EPA, Region X, AT-092, 1200 Sixth Avenue, Seattle, WA 98101, (206) 553-1757

**Plain Language**

The final rule is written in plain language. Plain language regulatory writing involves structuring the rule around questions the user may have. It takes the form of questions and answers and uses the words "I" and "you" to represent the owner or operator.

**Judicial Review**

The NESHAP for mineral wool production plants was proposed on May 8, 1997 (62 FR 25370). This action announces the EPA's final decisions on the rule. Under section 307(b)(1) of the Act, judicial review of the NESHAP is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit within 60 days of today's publication of this final rule. Under section 307(b)(2) of the Act, the requirements that are the subject of today's rule may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

**Technology Transfer Network**

In addition to being available in the docket, an electronic copy of today's notice is also available through the Technology Transfer Network (TTN). Following promulgation, a copy of the rule will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules (<http://www.epa.gov/ttn/oarpg/t3pfpr.html>). The TTN provides information and technology exchange in various areas of air pollution control. If more information regarding the TTN is needed, call the TTN HELP line at (919) 541-5384.

**Outline**

The information presented in this preamble is organized as follows:

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**I. Statutory Authority**

The statutory authority for this rule is provided by sections 101, 112, 113, 114, 116, and 301 of the Act, as amended (42 U.S.C. 7401, 7412, 7413, 7414, 7416, and 7601). This rule is also subject to section 307(d) of the Act (42 U.S.C. 7407(d)).

**II. Background and Public Participation**

Section 112(d) of the Act directs the EPA to establish standards to control all major sources emitting HAPs. On July 16, 1992, the EPA published a list of major source categories, including "Mineral Wool Production," for which NESHAP are to be promulgated (57 FR 3156). The NESHAP for mineral wool production (40 CFR part 63, subpart DDD) was proposed in the **Federal Register** on May 8, 1997 (62 FR 25370). The public comment period ended on July 7, 1997. Industry representatives, regulatory authorities, environmental groups, and the general public had the opportunity to comment on the proposed standards and to provide additional information during the public comment period. Three comment letters were received. Comments were received from the association representing industry and from two

representatives of air pollution control equipment manufacturers. Today's final rule reflects the EPA's full consideration of the comments. A summary of the major public comments along with the EPA's responses are summarized in this preamble. A more detailed discussion of public comments and the EPA's responses are contained in the docket (Docket No. A-95-33; Item V-C-2).

**III. Summary of Final Rule**

*A. Applicability*

The final NESHAP applies to each existing, new, and reconstructed cupola and curing oven at a mineral wool production facility that is located at a plant site that is a major source of HAP emissions. Facilities that manufacture wool fiberglass are not subject to this rule but are subject to a separate NESHAP rulemaking for wool fiberglass manufacturing.

*B. Standards*

Emissions of PM are regulated for existing cupolas. For new and reconstructed cupolas, emissions of carbon monoxide (CO) are also regulated. Emissions of formaldehyde are regulated for existing, new, and reconstructed curing ovens. Particulate matter serves as a surrogate for metal HAPs and CO is a surrogate for COS. In addition to being a HAP itself, formaldehyde serves as a surrogate for phenol. A numerical emission limit for PM expressed in kilograms per megagram (kg/Mg) or pound per ton (lb/ton) of melt is promulgated in the final rule. For CO or formaldehyde, the owner or operator may comply with percent removal or numerical emission limits. The emission limits for existing sources and new sources are presented below.

**SUMMARY OF EMISSION LIMITS FOR EXISTING SOURCES**

Source	Pollutant	Emission limit
Cupola .....	PM .....	0.05 kg/Mg (0.10 lb/ton) of melt.
Curing oven .....	Formaldehyde .....	0.03 kg/Mg (0.06 lb/ton) of melt or 80 percent formaldehyde removal.

**SUMMARY OF EMISSION LIMITS FOR NEW AND RECONSTRUCTED SOURCES**

Source	Pollutant	Emission limit
Cupola .....	PM .....	0.05 kg/Mg (0.10 lb/ton) of melt.
	CO .....	0.05 kg/Mg (0.10 lb/ton) of melt or 99 percent CO removal.
Curing oven .....	Formaldehyde .....	0.03 kg/Mg (0.06 lb/ton) of melt or 80 percent formaldehyde removal.

The owner or operator must also comply with operating limits. Operating limits for cupolas are as follows:

- (1) Within one hour after the alarm on a bag leak detection system sounds, the owner or operator must begin, and complete in a timely manner, corrective

actions as specified in their operations, maintenance, and monitoring plan.

- (2) When the alarm on a bag leak detection system sounds for more than

five percent of the total operating time in a six-month reporting period, the owner or operator must develop and implement a written quality improvement plan (QIP) consistent with the compliance assurance monitoring requirements in § 64.8(b)–(d) of 40 CFR part 64 (62 FR 54900, October 22, 1997).

(3) For each new or reconstructed cupola, the owner or operator must maintain the operating temperature of the thermal incinerator such that the average operating temperature for each three-hour block period never falls below the average temperature established during the performance test.

The owner or operator must meet the following operating limits for curing ovens:

(1) The owner or operator must maintain the free-formaldehyde content of each resin lot and formaldehyde content of each binder formulation at or below the specification ranges of the resin and binder used during the performance test.

(2) The owner or operator must maintain the operating temperature of each thermal incinerator such that the average operating temperature for each three-hour block period never falls below the average temperature established during the performance test.

#### *C. Compliance and Performance Test Provisions*

For existing sources, compliance with the standards must be demonstrated no later than three years from the effective date of the final rule. An extension for a fourth year may be granted by the Administrator under section 112(i)(3)(B) of the Act if necessary for the installation of controls. For new and reconstructed sources, any control devices or monitoring equipment necessary to meet the standards must be installed. Performance testing must be completed and compliance with all requirements of the final rule must be demonstrated by the dates in § 63.7 of the general provisions in subpart A of 40 CFR part 63. On and after these dates, the owner or operator must comply with the standards. The standards will apply at all times except during periods of startup, shutdown, or malfunction.

A performance test is required to demonstrate initial compliance with the percent removal or numerical emissions limits for cupolas and curing ovens. The performance test must be conducted while operating at the maximum production rate and must consist of three test runs. All monitoring systems and equipment must be installed, operational, and properly calibrated prior to the performance tests. To

comply with the CO or formaldehyde emission limit for a cupola or curing oven controlled by a thermal incinerator, or the PM limit for a fabric filter-controlled cupola, measurements are made at the outlet of the control device. If the owner or operator elects to comply with the percent removal emission limit for CO or formaldehyde, measurements are required at the inlet and outlet of the control device.

The owner or operator is required to measure and record the amount of raw materials, excluding coke, charged into and melted in each cupola during each performance test run, determine the average hourly melt rate for each performance test run, and determine the arithmetic average of the average hourly melt rates associated with the three performance test runs. The average hourly melt rate of the three performance test runs is used to determine compliance.

The owner or operator must conduct the performance test for each curing oven while manufacturing the product that requires a binder formulation made with the resin containing the highest free-formaldehyde content specification range. During the performance test, the owner or operator must record the free-formaldehyde content specification range of the resin used and the formulation of the binder used, including formaldehyde content and binder specification.

During the performance test for each cupola that uses a thermal incinerator to comply with the emission limit for CO and each curing oven that uses a thermal incinerator to comply with the formaldehyde emission limit, the owner or operator is required to establish the average operating temperature of the incinerator. The owner or operator must continuously measure the operating temperature, determine the average temperatures in consecutive 15-minute blocks, determine the arithmetic average of the 15-minute block temperatures for each performance test run, and determine the arithmetic average of the average operating temperatures associated with the three performance test runs.

With prior approval from the Administrator, operating limits established for control devices or processes during the initial performance tests and used to monitor compliance may be expanded by conducting additional performance tests to demonstrate compliance at the new levels. Also, owners or operators of curing ovens may conduct short-term experimental production runs without conducting additional performance tests

with prior approval from the Administrator.

#### *D. Monitoring Requirements*

Each fabric filter used on a cupola must be equipped with a bag leak detection system having an audible alarm that automatically sounds when an increase in particulate emissions above a predetermined level is detected. The alarm must be located in an area where appropriate plant personnel will be able to hear it. Such a device serves as an indicator of the performance of the fabric filter and provides an indication of when maintenance of the fabric filter is needed. The rule requires that in response to an alarm, corrective actions be initiated within one hour, and completed in a timely manner, according to the operations, maintenance, and monitoring plan. The owner or operator is in violation of this operating limit upon a failure to begin corrective actions within one hour of the alarm.

When the alarm is activated for more than five percent of the total operating time during a six-month reporting period, the owner or operator must develop and implement a written QIP consistent with the compliance assurance monitoring requirements in § 64.8(b)–(d) of 40 CFR part 64 (62 FR 54900, October 22, 1997). Failure to develop and implement a written QIP that is consistent with the compliance assurance monitoring requirements is a violation of this operating limit.

Each owner or operator of an affected curing oven must monitor and record the free-formaldehyde content of each resin lot and the formulation of each batch of binder used, including formaldehyde content. Following the performance test, the owner or operator must maintain the free-formaldehyde content of each resin lot and the formaldehyde content of each binder formulation at or below the specification ranges of the resin and binder used during the performance test. If the free-formaldehyde content of a resin lot or the formaldehyde content of a binder formulation exceeds the performance test specification ranges, the owner or operator is in violation of this operating limit.

For each thermal incinerator used to control emissions from affected cupolas or curing ovens, the owner or operator must continuously measure the operating temperature of the incinerator. The owner or operator must determine the average temperatures in consecutive 15-minute blocks and then determine the arithmetic average of the 15-minute averages for each one-hour period. The average operating temperature of the

incinerator is based on the arithmetic average of the one-hour average temperatures for each consecutive three-hour period. Following the performance test, the owner or operator is required to maintain the operating temperature so that the average operating temperature for each three-hour block period never falls below the average temperature established during the performance test. If the average temperature in any three-hour block period falls below the average established during the performance test, the owner or operator is in violation of this operating limit. The owner or operator must operate and maintain each incinerator as specified in their operations, maintenance, and monitoring plan. Procedures for properly operating and maintaining an incinerator must include an annual inspection.

Under today's rule, the owner or operator may change control device and process operating parameter levels established during performance tests and used to monitor compliance. The owner or operator must notify the Administrator and upon approval, conduct additional performance tests at the proposed new control device or process operating parameter levels to verify compliance with the applicable emission limits.

#### *E. Notification, Recordkeeping, and Reporting Requirements*

Notification, recordkeeping, and reporting requirements for NESHAP are included in the general provisions (40 CFR part 63, subpart A). The general provisions include requirements for: (1) Initial notification(s) of applicability, notification of performance test, and notification of compliance status; (2) a report of performance test results; (3) a startup, shutdown, and malfunction plan, including a semiannual report when a reportable event occurs and the steps in the plan were not followed; and (4) semiannual reports of deviations from established parameters. If deviations from established parameters are reported, the owner or operator must report quarterly until a request to return the reporting frequency to semiannual is approved.

Owners or operators of affected cupolas and curing ovens must submit an operations, maintenance, and monitoring plan as part of their application for a title V permit. The plan must include procedures for the proper operation and maintenance of processes and control devices used to comply with the emission limits, including an annual inspection of each thermal incinerator. The plan also must identify the process or control device parameters

to be monitored for compliance; the established operating levels or ranges for each process or control device; a monitoring schedule; the corrective actions to be taken when process or control device parameters deviate from the levels established during performance testing; and procedures for keeping records to document compliance.

In addition to requirements of the general provisions, the final rule specifies additional records to be kept by the owner or operator. The owner or operator is required to maintain records of the following, as applicable:

- (1) Cupola production (melt) rate;
- (2) bag leak detection system alarms, the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected;
- (3) free-formaldehyde content of each resin lot and the binder formulation, including formaldehyde content, of each binder batch used in the manufacture of bonded products; and
- (4) incinerator operating temperature and results of incinerator inspections, including periods when the average temperature in any three-hour block period fell below the average temperature established during the performance test and periods when the inspection identified incinerator components in need of repair or maintenance, the date and time of the problem, when corrective actions were initiated, the cause of the problem, an explanation of the corrective actions taken, and when the cause of the problem was corrected.

The NESHAP general provisions require that records be maintained for at least five years from the date of each record. The owner or operator must retain the records on site for at least two years but may retain the records off site the remaining three years. The records may be retained on microfilm, on microfiche, on a computer, on computer disks, or on magnetic tape disks. Reports may be made on paper or on labeled computer disks using commonly available and compatible computer software.

#### **IV. Summary of Changes Since Proposal**

Changes have been incorporated into the final NESHAP for mineral wool production facilities in response to comments on the proposed rule, with the exception of the format change to plain language. A number of clarifications to the proposal language are reflected in the final rule as a result of this question and answer format. The

principal changes made since proposal are summarized below. Additional discussion of the changes and the rationale for these changes is presented in section VI of this preamble.

#### *A. Definitions*

In response to public comments, minor clarifying changes were made to the definition of *mineral wool*. Also, a definition for *new source*, that incorporates the May 8, 1997 date that the NESHAP was proposed, was added to the list of terms used in the final rule.

#### *B. Standards*

The final rule incorporates some changes to the proposed rule regarding emission standards. Depending on available control and monitoring technologies for particular source categories, emission limits, as well as operating limits, are set forth as enforceable regulatory requirements. In addition to emission limits, operating limits are also included as part of the final rule regulating mineral wool production facilities. These operating limits were included in the proposed rule as monitoring requirements and have been moved into the sections containing the emission limits in the final rule. These operating limits specify the established requirements which are enforceable and will be used to determine compliance.

As a result of additional PM emissions data from fabric filter-controlled cupolas, the proposed PM emission limit of 0.03 kg/Mg (0.06 lb/ton) has been revised to 0.05 kg/Mg (0.10 lb/ton) in the final rule. The additional data considered in making this determination are for three cupolas controlled by fabric filters with identical parameters as those previously determined to be representative of the MACT floor for existing and new cupolas. An emissions limit of 0.05 kg/Mg (0.10 lb/ton) represents a level that can be achieved by the fabric filter-controlled cupola upon which the proposed PM emission limit was based, as well as by these three fabric filter-controlled cupolas which are also representative of the MACT floor.

#### *C. Performance Test Provisions*

A few changes were made to the performance test requirements in the proposed rule. Revisions were made to clarify the proposed requirements for performance testing by specifying in the final rule how to establish the average operating temperature of an incinerator. The proposed provision that would allow the owner or operator of curing ovens subject to the NESHAP to conduct short-term experimental production

runs without conducting additional performance tests was revised. The final rule clarifies that the process modifications referred to in the proposed rule mean pollution prevention process modifications.

The proposed rule required the use of method 5 for determining the concentration of PM with a minimum performance test run time of two hours and a minimum sample volume of 2.5 dry standard cubic meters (dscm) (90 dry standard cubic feet (dscf)). The final rule specifies a minimum performance test run time of three hours and a minimum sample volume of 3.75 dscm (135 dscf). These revisions are the result of re-evaluation of the test method procedures in response to public comments regarding the level of the proposed emission limit for PM, and are to ensure that an adequate amount of PM is captured on the filter for analysis and subsequent compliance determination.

#### *D. Monitoring Requirements*

Several changes were made to the monitoring requirements in the proposed rule. The final rule does not include the proposed requirements to maintain the average hourly melt rate so that it does not exceed the average melt rate established during the performance test by more than 20 percent for more than five percent of the total operating time in each six-month reporting period, and to do a repeat performance test at the higher melt rate if the average hourly melt rate exceeds the average melt rate established during the performance test by more than 20 percent for more than five percent of the total operating time in a six-month reporting period. The EPA determined that these monitoring requirements are not necessary because compliance with the PM standards will be assessed through use of a bag leak detection system; compliance with the CO standards will be assessed through monitoring incinerator operating temperature; and compliance with the formaldehyde standards will be assessed through monitoring incinerator operating temperature, monitoring free-formaldehyde content of resin, and monitoring binder formulation. The average melt rate must still be determined during each performance test in order to assess compliance with the emissions standards. As a recordkeeping requirement, the final rule continues to require that records of cupola melt rate be maintained.

As proposed, each fabric filter used on a cupola must be equipped with a bag leak detection system having an audible alarm that automatically sounds

when an increase in particulate emissions above a predetermined level is detected. The final rule clarifies that each triboelectric bag leak detection system must be installed, operated, adjusted, and maintained according to the EPA's "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997) which is available on the TTN under Emission Measurement Center (EMC), Continuous Emission Monitoring. Other bag leak detection systems must be installed, operated, adjusted, and maintained according to the manufacturer's written specifications and recommendations. In response to public comments and to maintain consistency with sensitivity (range) specifications in other regulations, the final rule requires that the bag leak detection system be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot). To maintain consistency with bag leak detection system requirements in other regulations and to allow owners and operators flexibility to make necessary bag leak detection system adjustments, the final rule specifies that following initial adjustment, the owner or operator may adjust the range, averaging period, alarm set points, or alarm delay time as specified in the approved operations, maintenance, and monitoring plan. The final rule further specifies that in no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless a responsible official, as defined in § 63.2 of the general provisions in subpart A of 40 CFR part 63, certifies in writing to the Administrator that the fabric filter has been inspected and found to be in good operating condition. The final rule clarifies that the alarm must be located in an area where appropriate plant personnel will be able to hear it and that in response to the sounding of an alarm, the owner or operator must complete corrective actions in a timely manner.

Under the proposed rule, the owner or operator would monitor and record the free-formaldehyde content of each resin lot and the binder formulation, including the formaldehyde content of each binder batch, and would maintain the formaldehyde content of each binder formulation at or below the level established during the performance test. The final rule clarifies that the owner or operator must maintain the free-formaldehyde content of each resin lot and the formaldehyde content of each binder formulation at or below the specification ranges of the resin and

binder used during the performance test. The use of ranges in the final rule accommodates the fact that resins and binders are produced in accordance with specification ranges rather than levels as proposed.

As proposed, the owner or operator would obtain, at a minimum, valid three-hour block average incinerator operating temperatures for 75 percent of the operating hours per day for 90 percent of the operating days per six-month reporting period. This requirement is not included in the final rule in order to maintain consistency with the compliance assurance monitoring final rule (62 FR 54899, October 22, 1997), which was revised based on comments received on its proposal and now requires monitoring devices to be operational at all times that the process is operational. Revisions were also made to clarify the proposed requirements for monitoring incinerator operating temperature by specifying in the final rule how to determine the average operating temperature.

Under the proposed rule, the owner or operator could change a control device or process operating parameter level established during the performance test by conducting additional performance tests at the new parameter level. The final rule clarifies that the owner or operator must notify the Administrator of the desire to expand the range of a control device or process operating parameter level, and upon approval, conduct additional performance tests at the proposed new parameter levels before operating at these levels to verify compliance with the emission limits.

#### *E. Notification, Recordkeeping, and Reporting Requirements*

A few changes were made since proposal to the notification, recordkeeping, and reporting requirements. The final rule clarifies that notifications of performance tests must be submitted to the Administrator at least 60 days prior to the performance test. The final rule also clarifies what elements are required to be included in performance test reports. The proposed rule required an operations, maintenance, and monitoring plan for each affected source that would contain information on the proper operation and maintenance of control devices, the parameters to be monitored for compliance and their established operating levels, a monitoring schedule, corrective actions to be taken when parameters deviate from the levels established during performance testing, and procedures for keeping records to document compliance. The final rule

specifies some example corrective actions for bag leak detection system alarms that may be included in the operations, maintenance, and monitoring plan. Consistent with the general provisions requirements to operate and maintain air pollution control equipment in a manner consistent with good air pollution control practices, the final rule clarifies that the operations, maintenance, and monitoring plan procedures for properly operating and maintaining control devices must include, where applicable, an inspection of each incinerator at least once per year. The final rule also clarifies that records of when corrective actions were initiated and when the cause of the problem was corrected must be maintained.

#### V. Summary of Impacts

The impacts estimated to be attributable to the final rule are the same as those estimated to be attributable to the proposed rule. Nationwide emissions of metal HAPs from mineral wool production cupolas are estimated to be 1.0 Mg/yr (1.1 tpy) at the current level of control. Existing PM emissions are estimated to be 239 Mg/yr (263 tpy). Implementation of the final rule will reduce nationwide metal HAP and PM emissions from existing cupolas by 0.91 Mg/yr (1.0 tpy) and 186 Mg/yr (205 tpy), respectively. Formaldehyde and phenol emissions from existing curing ovens are estimated to be 54 Mg/yr (59 tpy) and 14 Mg/yr (16 tpy), respectively. Nationwide emissions of formaldehyde and phenol will be reduced by about 30 Mg/yr (34 tpy) and 14 Mg/yr (16 tpy), respectively, as a result of this final rule. Although the EPA does not anticipate any new cupolas or curing ovens within the next five years, installation of a new cupola with a 7.3 megagram per hour (8 ton per hour) capacity would result in estimated reductions of COS and CO emissions by 104 Mg/yr (114 tpy) and 1,256 Mg/yr (1,384 tpy), respectively, in addition to metal HAP and PM reductions.

Because this rule is based on the use of fabric filters and thermal incinerators, there are no water pollution impacts. Solid waste generated by fabric filters in the form of ash is disposed of by landfilling. With the addition of fabric filters to five cupolas, the amount of solid waste is expected to increase by about 350 Mg/yr (390 tpy) from the current level of 24,800 Mg/yr (27,300 tpy) nationwide. The rule is estimated to have no significant effect on energy consumption.

The total nationwide capital and annualized costs for existing cupolas under the final rule are estimated to be

\$1.5 million and \$608,900/yr, respectively. These costs represent the addition of fabric filters to five cupolas but do not include the monitoring costs of bag leak detection systems required on all affected cupolas. Capital and annualized costs for a bag leak detection system are estimated at \$9,100 and \$1,800/yr for each affected cupola, respectively.

The total nationwide capital cost of complying with the requirements for existing curing ovens is estimated to be \$795,800 with a nationwide annual cost of \$641,600. These costs result from the addition of thermal incinerators to two curing ovens.

Total nationwide capital costs for the standard are estimated at \$2.6 million and nationwide annual costs are estimated at \$1.4 million, including installation, operation, and maintenance of emission control and monitoring systems.

Under the final rule, market-level price increases are estimated to range from 0.5 percent to 2.1 percent, resulting in quantity adjustments of -0.59 percent and -1.71 percent, respectively. The decreases in quantity demanded may lead to the loss of approximately nine jobs. There is no indication that the costs associated with achieving the reductions required by the final rule will cause facility closure.

#### VI. Summary of Responses to Major Comments

The EPA proposed the NESHAP for the mineral wool production source category on May 8, 1997 (62 FR 25370). A 60-day comment period from May 8, 1997 to July 7, 1997, was provided to accept written comments from the public on the proposed rule.

The EPA received a total of three comment letters regarding the proposed NESHAP for mineral wool production. A copy of each comment letter is available for public inspection in the docket for the rulemaking (Docket No. A-95-33; see the ADDRESSES section of this document for information on inspecting the docket). The EPA has had follow-up discussions with commenters regarding specific issues initially raised in their written comments that were submitted to the EPA during the comment period. Copies of correspondence and other information exchanged between the EPA and the commenters during the post-comment period are available for public inspection in the docket for the rulemaking.

All of the comments received by the EPA were reviewed and carefully considered by the EPA. Changes to the rule were made where the EPA

determined it to be appropriate. A summary of responses to major comments received on the proposed rule is presented below. Additional discussion of the EPA's responses to public comments is presented in the document "Summary of Public Comments and Responses on Mineral Wool Production NESHAP" (docket item V-C-2).

#### A. General

*Comment:* One commenter stated that there have been some shutdowns in the industry that affect the information presented in the preamble to the proposed rule. Currently, there are 15 mineral wool production facilities located in eight states. Five of the 15 plants manufacture bonded products and contain a total of ten cupolas and five curing ovens. Ten active plants manufacture only nonbonded products, with a total of 21 cupolas. Thus, the total industry currently operates 31 cupolas and five curing ovens, rather than the 36 cupolas and six curing ovens reported by the EPA in the **Federal Register** document. The commenter further stated that six of the ten companies in the mineral wool production industry are small businesses, rather than seven of the ten companies being small businesses as stated in the EPA's **Federal Register** document.

*Response:* The EPA acknowledges the information regarding shutdowns and changes in the industry profile as noted by the commenter. The EPA believes, however, that temporary shutdown of production lines is not unusual in this industry because the manufacture of mineral wool products is order-driven, and that these lines could be restarted in the future. The EPA, therefore, has not made any changes to the estimated impacts resulting from the rule. When considering these changes in the industry profile, the technology representative of the best controlled cupolas and curing ovens remains fabric filters and thermal incinerators, respectively. Therefore, these changes do not affect the proposed MACT floors for cupolas and curing ovens. Regarding the number of small businesses within the source category, two separate sources of information obtained by the EPA indicate that the company in question has less than 750 employees. Thus, the EPA continues to believe that seven of the ten mineral wool manufacturing companies are small businesses. No revisions to the final rule are necessary as a result of these comments.

### B. Definitions

*Comment:* One commenter suggested that the definition of "bonded product" be amended to read "Bonded product means mineral wool to which a hazardous air pollutant-based binder (e.g., phenol, formaldehyde) has been applied and cured."

*Response:* After consideration of this comment, the EPA has decided to leave the definition of "bonded product" as it is in the proposed rule to allow the broadest coverage of this term. Once binder has been applied to mineral wool, whether cured or not, hazardous air pollutants, which are the focus of the definition, have been introduced into the production process.

*Comment:* One commenter suggested that the definition of "mineral wool" be amended to read "Mineral wool means a fibrous glassy substance made from natural rock (such as basalt), recycled blast furnace slag, or a mixture of rock and slag; it may be used as a thermal or acoustical insulation material or in the manufacturing of other products to provide structural strength, sound absorbency, fire resistance, or other uses."

*Response:* After consideration of this comment, the EPA has decided to modify the definition of "mineral wool" by adding "or other required properties" rather than "or other uses" as suggested by the commenter. The EPA believes that this modification adequately expands the definition of "mineral wool" as the commenter requested, as well as provides more clarification than the commenter's suggested revision. The EPA does not believe it is necessary or technically correct to add "recycled" to the definition.

*Comment:* One commenter suggested that the definition of "cupola" be amended to read "Cupola means a melting system consisting of raw material bins, weighing and charging equipment, electrical power system, controls, a large water cooled metal vessel with water cooling system, combustion air fans, duct work, tuyeres and oxygen enrichment system with combustion air preheater, molten slag handling and spinning equipment, off gas duct work, fan and a structure to support and house the melting system. The cupola is charged with a mixture of fuel, rock and/or blast furnace slag and additives; as the fuel is burned, the charged mixture is heated to a molten state, flows from the metal vessel and is spun into mineral wool."

*Response:* After consideration of this comment, the EPA has decided to leave the definition of "cupola" as it is in the proposed rule to allow the broadest

coverage of this term. The EPA does not agree that all of the items in the commenter's suggested definition are part of a cupola. It is the EPA's intention to define "cupola" in general terms in order to cover all possible configurations. Some configurations may not include all of the items included in the commenter's suggested definition.

### C. Selection of Emission Standards

*Comment:* One commenter strongly supported the subcategorization in the proposed rule of plants with and without bonded lines. The commenter further stated that it is within the EPA's authority under the Act to define appropriate subcategories and that the differences between plants with and without bonded lines are substantial and consistent with the types of differences that the EPA has used to subcategorize other source categories.

*Response:* No changes in the final rule are necessary as a result of this comment.

*Comment:* One commenter supported the EPA's proposed MACT floor for new and existing sources.

*Response:* No changes in the final rule are necessary as a result of this comment.

*Comment:* One commenter strongly supported the EPA's proposed decision not to require an incinerator as above the MACT floor control for existing cupolas. Reasons cited by the commenter are that a cupola incinerator requirement would be unduly costly and economically devastating to an industry that produces an environmentally beneficial product using a waste product that would otherwise be landfilled, that a cupola incinerator requirement would not provide any significant health benefits, and that a cupola incinerator may even have negative net health impacts due to secondary emissions of nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>).

*Response:* No changes in the final rule are necessary as a result of this comment.

*Comment:* One commenter stated that the EPA should require control of CO and COS emissions from existing cupolas. The commenter further stated that thermal oxidizers provide excellent control of cupola CO/COS emissions and that the EPA incorrectly concluded that the costs and ancillary emissions from thermal oxidizers are too high for the EPA to require their use on existing cupolas. The commenter stated that in fact, thermal oxidizer costs have been declining in real terms, and NO<sub>x</sub> emissions from thermal oxidizers currently are guaranteed at very low

levels. Further, the commenter believes that the EPA's subcategorization of mineral wool production facilities based on the production of bonded products, and leading to MACT floors for cupola CO/COS emissions of no control, is inappropriate. Where subcategorization does not result in distinct emission limits or floors, the commenter believes that regulatory simplicity dictates that it should be avoided. The commenter also believes that the MACT floor for existing cupolas does call for thermal oxidizer-based limits given that the MACT floor level of control would be the use of thermal incineration or its equivalent in the absence of subcategorization.

*Response:* The EPA disagrees that subcategorization is either prohibited by the statute or unwise as a policy matter. While regulatory simplicity may be a consideration in how the EPA exercises its discretion, the statute does not dictate that this consideration supersede other legitimate considerations in establishing subcategories. As the EPA has noted in several rulemakings, the Act provides the EPA with substantial discretion to consider various factors when determining whether subcategorization is appropriate (see, e.g., 59 FR 29196-29200, June 6, 1994, **Federal Register** notice on determination of MACT floor for medium storage vessels at facilities subject to the hazardous organic NESHAP which indicates that the EPA may consider whether production processes used at different sources are sufficiently distinct to justify the creation of a subcategory).

In considering whether it is appropriate to subcategorize in this rule, the EPA continues to believe the basis for subcategorizing stated in the preamble to the proposed rule is valid (see 62 FR 25376-25377, May 8, 1997). Another commenter supported the EPA's view that it has substantial discretion to subcategorize and agreed with the EPA's decision to subcategorize in the proposed rule. Further, the EPA has taken several steps to accomplish the goal of regulatory simplicity in this rulemaking. For example, the EPA has emphasized readability in the plain language format of the final rule. In addition, the EPA has promulgated the cupola standards in one section, rather than in separate sections for each subcategory. Therefore, the EPA believes it has accomplished the goal of making the regulations as simple as possible while at the same time recognizing appropriate distinctions between the different types of facilities in the industry through subcategorization.

Regarding the commenter's statement about thermal oxidizer costs and ancillary emissions, the commenter did not provide any cost or NO<sub>x</sub> emissions data to substantiate the assertion that a requirement to install thermal oxidizers on existing cupolas would be cost effective. The EPA continues to believe that the data in the record does not indicate that CO/COS controls are cost effective or otherwise appropriate for either subcategory. The EPA has not made any changes to the rule as a result of these comments.

*Comment:* One commenter supported the EPA's proposing thermal incineration as the MACT floor for both new and existing curing ovens and new cupolas. The commenter further stated that significantly higher control efficiencies can be achieved beyond the 80 percent discussed in the proposed rule with the use of catalytic incineration or oxidation and, in fact, volatile organic compound (VOC) reductions in excess of 98 percent can be achieved. According to the commenter, catalytic oxidation is a cost-effective control option which has been used for many years in diverse applications and the commenter believes that significant further VOC reductions can be cost-effectively achieved by using the technology to also control the emissions from existing cupolas. The commenter stated that catalytic incineration minimizes the temperature required for the destruction of VOCs and consequently, minimizes the production of NO<sub>x</sub> and sulfur oxide (SO<sub>x</sub>) emissions from the combustion of sulfur bearing fuels. Another commenter stated that thermal oxidizers or equivalent controls can easily provide the proposed 80 percent reduction in curing oven formaldehyde emissions and suggested that the EPA mention the capabilities of regenerative thermal oxidizers to reduce fuel costs in the preamble to the final rule.

*Response:* Neither commenter provided costs or data indicating destruction efficiency of catalytic oxidizers or regenerative thermal oxidizers on a mineral wool cupola or curing oven. In addition, catalytic oxidizers and regenerative thermal oxidizers are not demonstrated in the mineral wool production industry. The proposed 80 percent reduction in curing oven formaldehyde emissions is based upon test data from a recuperative thermal incinerator representative of MACT for curing ovens in the mineral wool production industry. The EPA has not made any changes to the rule as a result of these comments.

*Comment:* One commenter recommended that the proposed PM

emission standard for existing cupolas be increased significantly from the proposed limit of 0.06 lb/ton of melt to 0.9 lb/ton to ensure that cupolas equipped with a fabric filter (also known as a baghouse) can comply with the standard. The commenter believes that emissions tests upon which the EPA based the proposed PM standard involved invalid tests that resulted in unrepresentative PM emission levels. According to the commenter, the baghouse had defects that resulted in the improper influx of air into the outlet stream, thereby diluting the observed PM emission level. The commenter stated that approximately 70–90 percent more air was emitted at the outlet than entered the intake and that this defect prevents the test results from being used to establish emission levels representative of a properly functioning baghouse. The commenter also noted that the baghouse differential pressures varied widely during the emissions tests, which could indicate a number of problems with the baghouse including air leaks or problems with bag cleaning.

*Response:* The commenter's request to increase the proposed PM emission standard to ensure that cupolas equipped with fabric filters can comply with the standard indicates a misunderstanding of the nature of section 112 of the Act, as well as the MACT determination process, which requires that emission standards for existing sources be set not less stringent than the level achieved by the average of the best performing five sources for categories or subcategories with fewer than 30 sources. This determination is made assuming that some sources will need to install new emission controls or improve performance of their existing controls to meet a standard that is not less stringent than the MACT floor.

Regarding the commenter's statement that baghouse defects resulted in improper influx of air into the outlet stream and dilution of the PM emission level, dilution air is of no significance given that the proposed PM emission standard is in pounds of PM per ton of melt. Emissions data from the baghouse-controlled cupola indicates a PM removal efficiency of about 99.8 percent, and therefore, casts doubt upon the commenter's assertion that the data are not representative of a properly functioning baghouse. In addition, EPA believes that if the commenter's statement about baghouse operational problems during the emissions testing upon which the proposed PM standard is based accurately assessed the situation, then the emission test results would be biased high and the emission standard would, therefore, be biased

high. This certainly does not support raising the limit to an even higher level. When provided the opportunity to review the emissions test report, the facility did not have any comments regarding baghouse defects resulting in the improper influx of air into the outlet stream and diluted PM emission levels. Furthermore, when the EPA discussed the proposed PM emission standard of 0.06 lb/ton with industry representatives and State and local environmental agency representatives prior to proposal, no concerns were expressed. In addition, the commenter provided no basis for a PM emission standard of 0.9 lb/ton of melt. Based on the above discussion, the EPA has not made any changes to the proposed PM emission standard as a result of these comments.

During a follow-up meeting with the commenter (see Docket Item IV-E-1), held at the commenter's request to provide an opportunity to present to the EPA clarification of the comments and issues of concern regarding the proposed emission standards, the commenter provided the EPA with additional PM emissions data from fabric filter-controlled cupolas. These data are from the Emission Factor Documentation for AP-42 Section 8.16, Mineral Wool Manufacturing. These PM data are from three fabric filter-controlled cupolas at the same facility as the fabric filter-controlled cupola upon which the EPA based its proposed PM emission standard. Because the parameters for these three fabric filters are the same as those parameters previously determined to be representative of the MACT floor for existing and new sources and because these cupolas are at the same facility as the cupola tested by the EPA and would therefore experience similar operating and maintenance practices, the EPA has decided that the PM data from these three fabric filter-controlled cupolas should be considered in development of the final rule. When data from these three additional fabric filter-controlled cupolas are included in the data base, PM data representative of the MACT floor for cupolas now consists of the following: 0.04 lb/ton, 0.05 lb/ton, 0.065 lb/ton, and 0.099 lb/ton. Based on these data, the EPA has determined that a PM emission limit of 0.10 lb/ton represents a level that can be achieved by all four cupolas controlled with well designed, operated, and maintained fabric filters, and is representative of the MACT floor in the final rule.

*Comment:* One commenter stated that emissions data from the second facility in the EPA test program indicate that PM emissions from a cupola also



controlled with a baghouse averaged 0.6 lb/ton of melt, an order of magnitude higher than the proposed PM standard of 0.06 lb/ton. Thus, emissions from this facility would not meet the EPA's proposed PM emission standard, even though the facility is equipped with the control technology that represents the MACT floor. The commenter acknowledged that the PM emissions data from this facility includes emissions from both the cupola and fiber collection process but stated that the facility is nevertheless required to meet the emission limit set by the EPA. The commenter further stated that at least one other mineral wool company vents the fiber collection process as well as the cupola through a baghouse and it would be infeasible for this facility to meet the proposed PM standard. Further, it would be very expensive and counter-productive with respect to emission levels to force the facility to rearrange its baghouse operation to exclude the fiber collection process air. Because it is possible that the collection chamber may require additional PM controls in the future as a result, for example, of the EPA's recently proposed PM<sub>2.5</sub> ambient standard, an additional reason to set the cupola PM emission standard at a higher level is therefore to permit the facility to meet the proposed PM emission standard with its current configuration, and to provide other companies additional flexibility to reduce PM emissions in the future.

*Response:* The EPA cannot foresee or accommodate all configurations of processes ducted to a common control device. Section 63.7 of the general provisions in subpart A of 40 CFR part 63 allows the use of alternative test methods and procedures based on review and approval by the EPA of relevant supporting information. The supporting data and information are submitted as part of the site specific test plan and are evaluated for approval by the EPA on a case-by-case basis. Because all facilities have the opportunity to request alternative methods and procedures for testing and demonstrating compliance with the cupola emission standards, the EPA again believes the proposed PM emission standard should not be raised to consider emissions not regulated by the MACT standards, and has therefore, not made any changes to the rule as a result of these comments.

*Comment:* One commenter stated that other mineral wool manufacturing companies indicated that a 0.06 lb/ton PM standard would not be feasible with their existing installed baghouse controls. Earlier data collected by the EPA as part of a screening study not

associated with the MACT standards development process found controlled particulate emissions from industry tests of six mineral wool cupolas equipped with baghouses ranged from 0.0044 to 0.70 lb/ton, while the average controlled emission level was 0.42 lb/ton. The commenter further stated that because most if not all mineral wool facilities will be unable to meet the proposed 0.06 lb/ton of melt PM standard on a consistent basis, the proposed standard is inconsistent with the intended objective of basing the standard on the existing baghouse technology installed by many facilities that represent the MACT floor.

*Response:* The EPA reviewed the 1980 document "Source Category Survey: Mineral Wool Manufacturing Industry" which contains the earlier data referred to by the commenter. Upon review, it was noted that only one facility with a cupola controlled by a baghouse as referenced in the 1980 report is still operational and it is not apparent from the study what the PM emissions associated with the cupola at this facility were. It is apparent, however, from an information collection request response submitted by this facility to the EPA in 1993, that new baghouses were installed in 1986 and 1987 for each of their two operating cupolas. Thus, the test data supplied by this facility for the 1980 study is not relevant. The commenter did not provide any data on baghouse design, maintenance, or operation characteristics to show that the facilities tabulated in the 1980 study were representative of MACT.

The commenter's statement that the proposed standard is inconsistent with the intended objective of basing the standard on the existing baghouse technology installed by many facilities that represent the MACT floor mischaracterizes the intent of the EPA and of section 112 of the Act. As previously stated, the statute requires the level of control to be not less stringent than the average level achieved by the best performing five sources, rather than be based on what all facilities can achieve with their current control and maintenance practices. The Act, through requiring all sources to meet a standard that is not less stringent than the MACT floor, assumes that existing controls may need to be replaced or upgraded at some sources. In many cases, bags within the fabric filter may need to be replaced and a more rigorous operation and maintenance plan may be necessary to meet the MACT. Accordingly, the EPA has decided that no changes in the final rule are necessary as a result of these comments.

*Comment:* One commenter recommended that the proposed formaldehyde emission standard for existing curing ovens be increased significantly from 0.06 pounds of formaldehyde per ton of melt (lb/ton) to 0.4 lb/ton because the commenter has concerns that the proposed standard may not be consistently achieved by an incinerator on the curing oven. The commenter stated that for example, the EPA's data from one tested facility (Facility B) showed that formaldehyde emissions from a curing oven equipped with an incinerator were 0.4 lb/ton, which is almost an order of magnitude above the proposed formaldehyde standard. The commenter acknowledged that the EPA's background documentation explains that only a portion of Facility B's curing oven exhaust passes through the high temperature incinerator but nevertheless, the input formaldehyde concentration into Facility B's curing oven incinerator was still over six times higher (1.3 lb/ton) than the low measured formaldehyde input at the facility upon which the proposed emission standard is based (0.2 lb/ton) (Facility A). The commenter stated that because the Facility A input level was abnormally low, the low output after incineration may also not be representative of other curing ovens. The commenter further stated that assuming Facility B's curing oven incinerator is the least efficient of the three curing oven incinerators existing in the industry, Facility B would be the median of the 5 curing ovens remaining in the industry. Thus, the commenter concluded that the MACT floor should be set at the emission limit corresponding to Facility B's curing oven incinerator.

*Response:* While the commenter characterizes the input formaldehyde concentration into Facility A's curing oven incinerator as strikingly low relative to the input formaldehyde concentration into Facility B's curing oven incinerator, the commenter did not submit data to indicate that the emissions measured for Facility A's curing oven incinerator are in error. The EPA recognized the potential variability in input formaldehyde, and for this reason proposed an alternative emission standard, also based on Facility A, requiring reduction of uncontrolled formaldehyde emissions by at least 80 percent. Regarding the commenter's concern that the proposed standards may not be consistently achieved by an incinerator, another commenter indicated that thermal oxidizers or equivalent controls can easily provide

the proposed 80 percent reduction in curing oven formaldehyde emissions. Furthermore, in the preamble to the proposed national emission standards for hazardous air pollutants for wool fiberglass manufacturing (62 FR 15228), the EPA stated that emission test measurements demonstrate that a thermal incinerator installed at these facilities is at least 99 percent effective in the removal of formaldehyde and phenol from curing ovens. Additionally, under the relevant emission standard for Facility B, 80 percent removal would translate into a limit of 0.26 lb/ton of melt, not 0.4 lb/ton of melt as proposed by the commenter.

Originally, Facility A's curing oven incinerator was selected as being representative of the MACT floor for existing sources and Facility B's curing oven incinerator was selected as being representative of MACT for new sources. These determinations were based on incinerator operating temperatures and gas residence times. After emissions testing was completed, the EPA decided to discount the data from Facility B because the curing oven incinerator was not operating properly as evidenced by a low formaldehyde removal efficiency of about 69 percent. Also, discussions with Facility B personnel revealed that gas flows within the curing oven were not within design parameters during the emissions test. Based on the above information, the EPA determined that Facility A's curing oven incinerator represented MACT for existing and new sources. Accordingly, other facilities with curing ovens, including Facility B, will be required to install new incinerators, or replace or modify their existing incinerators, as necessary, to meet the curing oven formaldehyde emission standards. After consideration of these comments, the EPA has decided to leave the formaldehyde emissions standards at 0.06 lb/ton of melt and 80 percent reduction of uncontrolled formaldehyde as in the proposed rule.

*Comment:* One commenter recommended that the EPA include an emission limit for COS of 0.05 pounds of COS per ton of melt (lb/ton) as an alternative to proposed emission standards for new cupolas of 0.10 pounds of CO per ton of melt (lb/ton) or 99 percent CO removal. The commenter stated that this alternative emission limit would give new sources in the future the flexibility to explore alternative methods to reduce COS through process modifications or other approaches. The commenter further stated that while they are not aware of any feasible process modifications that can significantly reduce COS at this

time, it is possible that alternative designs or processes that reduce COS emissions may be developed in the future that could be feasible for a new plant. The commenter believes that because the relationship between CO and COS involves some fluctuation and uncertainty, a direct COS alternative would be helpful to encourage exploration of such alternative means of compliance in any future new mineral wool plants.

*Response:* During development of the cupola emission standards, the EPA considered including an emission standard for COS for plants that choose to use process modifications, rather than thermal incineration, as a means of reducing COS emissions from new cupolas. When the EPA discussed this option with industry representatives, they considered this approach and strongly indicated, as the commenter does, that there are no feasible process modifications capable of reducing COS emissions to the level contemplated for a standard. In addition, the commenter provided no basis for a COS emission standard of 0.05 lb/ton of melt. Accordingly, the EPA has not made any changes to the rule as a result of this comment.

#### D. Monitoring

*Comment:* One commenter expressed concern that the monitoring equipment for baghouses required to meet the proposed PM standard is overly sensitive, would be unduly costly, and would trigger false alarms. The commenter recommended revising the bag leak detection system specifications from 1 milligram per cubic meter (mg/m<sup>3</sup>) to 10 mg/m<sup>3</sup> in order to be consistent with other MACT standards, such as the secondary lead standard where the minimum detection capability of the bag leak detection system was revised from 1 to 10 mg/m<sup>3</sup>.

*Response:* After consideration of this comment, the EPA has decided to modify the required minimum detection capability for bag leak detection systems to 10 mg/m<sup>3</sup> (0.0044 gr/ft<sup>3</sup>). This change does not alter the intended function of the bag leak detector, which is to detect broken bags or other defects in baghouses, and is consistent with the specification for sensitivity in other EPA standards.

*Comment:* One commenter suggested that the EPA allow the use of opacity monitors for bag leak detection because these monitors comply with Performance Specification 1 of Appendix B of 40 CFR part 60, and have been used for many years on electric arc furnace baghouses where the opacity limit is set at 3 percent.

*Response:* The commenter did not submit data to prove that opacity monitors are as sensitive as bag leak detection systems or can meet their minimum detection capability specification. The facts that opacity monitors comply with Performance Specification 1 of Appendix B of 40 CFR part 60 and that opacity monitors have been used on electric arc furnace baghouses are no indication that opacity monitors are suitable for use on cupola baghouses. The EPA continues to believe that a bag leak detection system will provide the best indication of cupola baghouse performance at the low PM levels characteristic of these sources. The EPA has not made any changes to the rule as a result of this comment.

#### E. Recordkeeping and Reporting

*Comment:* One commenter stated that although they agree with the need for startup, shutdown, and malfunction plans, the proposed rule does not clearly provide that emissions may temporarily exceed the emission limits during startup, shutdown, or malfunctions. The commenter recommended that the proposed rule should therefore specify that emission limits may be temporarily exceeded during startup, shutdown, or malfunctions without violating the standard provided the company is taking appropriate actions consistent with its startup, shutdown, and malfunction plan. The commenter further recommended that the EPA should provide some flexibility in the rule for unexpected developments and upsets that are difficult to predict and control in the mineral wool industry. The commenter stated that there is no practical or legal reason why a single perceived deviation from a defined operating range should be deemed to be out of compliance, but rather, some margin of error should be permitted in the form of one or two allowable excursions per month.

*Response:* Section 63.6(f) of the general provisions in subpart A of 40 CFR part 63 provides that nonopacity emission standards shall apply at all times except during periods of startup, shutdown, and malfunction. The situation the commenter describes regarding unexpected developments and upsets are covered under the definition of a malfunction in the general provisions provided the failures are not caused in part by poor maintenance or careless operation. The EPA, therefore, does not believe that an additional provision in the form of one or two allowable excursions per month is warranted. The EPA has specified in the

final rule, however, that the owner or operator must comply with the standards at all times except during periods of startup, shutdown, or malfunction.

## VII. Administrative Requirements

### A. Docket

The docket is intended to be an organized file of the administrative records compiled by the EPA. The docket is a dynamic file because information is added throughout the rulemaking development. The docketing system is intended to allow members of the public and industries involved to readily identify and locate documents so that they can effectively participate in the rulemaking process. Along with the proposed and promulgated standards and their preambles, the docket will contain the record in case of judicial review. (See section 307(d)(7)(A) of the Act.) The location of the docket, which includes all public comments received on the proposed rule, is in the ADDRESSES section at the beginning of this preamble.

### B. Executive Order 12866—Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether the regulatory action is "significant" and therefore subject to review by the Office of Management and Budget (OMB) and the requirements of the Executive Order. The Executive Order defines "significant regulatory action" as one that is likely to result in a rule that may:

- (1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or
- (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that this action is not a "significant regulatory action" under the terms of the Executive Order and is therefore not subject to OMB review.

### C. Executive Order 12875—Enhancing the Intergovernmental Partnership

Under Executive Order 12875, the EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or the EPA consults with those governments. If the EPA complies by consulting, Executive Order 12875 requires the EPA to provide to the OMB a description of the extent of the EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, copies of any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires the EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments "to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates."

Today's rule does not create a mandate on State, local or tribal governments. The rule does not impose any enforceable duties on State, local or tribal governments, because they do not own or operate any sources that would be subject to this rule. Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this rule.

### D. Executive Order 13084—Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, the EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or the EPA consults with those governments. If the EPA complies by consulting, Executive Order 13084 requires the EPA to provide to the OMB, in a separately identified section of the preamble to the rule, a description of the extent of the EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires the EPA to

develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. No affected facilities are owned or operated by Indian tribal governments. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

### E. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, the EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires the EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows the EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before the EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of \$100

million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. The EPA projects that annual economic impacts would be far less than \$100 million. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA. In addition, the EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments because it does not impose any enforceable duties on small governments; such governments own or operate no sources subject to the rule and therefore would not be required to purchase control systems to meet the requirements of the rule.

#### F. Regulatory Flexibility

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. The EPA has determined that seven of the ten firms that potentially would be subject to the final rule are small firms. The EPA has met with all of these small firms and their trade association. They have been fully involved in this rulemaking and their concerns and comments have been considered in the development of this rule. Also, a representative of the EPA's Office of the Small Business Ombudsman participated in the development of these standards as a work group member to ensure that the requirements of the standards were examined for potential adverse economic impacts and those impacts were mitigated to the extent feasible while still achieving the rule's environmental objectives.

Five of the seven small firms would incur emission control costs that are less than 0.1 percent of sales; one firm would incur control costs estimated to be 2.4 percent of the firm's sales; and another firm would incur control costs believed to be in excess of 3 percent. (See Docket Item II-A-16 for a discussion of this analysis.) Thus, this rule affects only a small number of small businesses. Further, most of the small businesses impacted by this rule will experience minimal increases in costs. Only two small businesses are projected to incur costs exceeding 0.1 percent of sales.

#### G. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective June 1, 1999.

#### H. Paperwork Reduction Act

The OMB has approved the information collection requirements contained in this rule under the provisions of PRA, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2060-0362.

The information collection requirements include the notification, recordkeeping, and reporting requirements of the NESHAP general provisions, authorized under section 114 of the Act, which are mandatory for all owners and operators subject to national emission standards. All information submitted to the EPA for which a claim of confidentiality is made is safeguarded according to EPA policies in 40 CFR part 2, subpart B. This rule does not require any notifications or reports beyond those required by the general provisions. Subpart DDD does require additional records of specific information needed to determine compliance with the rule. These include records of: (1) Cupola production (melt) rate; (2) all bag leak detection system alarms, the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected; (3) the free-formaldehyde content of each resin lot and the binder formulation, including formaldehyde content, of each binder batch used in the manufacture of bonded products; and (4) incinerator operating temperature, including all periods when the average temperature in any three-hour block period fell below the average temperature established during the performance test, and the results of the annual inspection, including any problems discovered during the inspection, the date and time of the

problem, when corrective actions were initiated, the cause of the problem, an explanation of the corrective actions taken, and when the cause of the problem was corrected. Each of these information requirements is needed to determine compliance with the standards.

The annual public reporting and recordkeeping burden to industry for this collection is estimated to be 6,107 labor hours per year at an annual cost of \$196,206. This estimate includes a one-time performance test and report (with repeat tests where needed); one-time preparation of a startup, shutdown, and malfunction plan with semiannual reports of any event in which the procedures were not followed; preparation of an operations, maintenance, and monitoring plan; semiannual excess emissions reports; notifications; and recordkeeping. The total capital cost associated with the monitoring requirements is estimated to be \$309,400. This estimate includes the capital and startup costs associated with installation of a bag leak detection system for each affected cupola. The annualized cost of that capital is \$44,059 per year, and the operation and maintenance of the monitoring equipment is estimated to be \$17,000 per year.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15. In compliance with the Paperwork Reduction Act (PRA), the EPA is amending the table in 40 CFR part 9 of currently approved information collection request (ICR) control numbers issued by the OMB for various regulations.

This amendment updates the table to accurately display those information requirements contained in this final rule. The EPA will continue to present OMB control numbers in a consolidated table format to be codified in 40 CFR part 9 of the EPA's regulations, and in each Code of Federal Regulations volume containing EPA regulations. The table lists the section numbers with reporting and recordkeeping requirements, and the current OMB control numbers. This display of the OMB control number and its subsequent codification in the CFR satisfy the requirements of the PRA (44 U.S.C. 3501 *et seq.*) and OMB's implementing regulations at 5 CFR part 1320.

The ICR was previously subject to public notice and comment prior to OMB approval. As a result, the EPA finds there is "good cause" under section 553(b)(3)(B) of the Administrative Procedures Act (5 U.S.C. 553(b)(3)(B)) to amend this table without prior notice and comment. Due to the technical nature of the table, further notice and comment would be unnecessary. For the same reasons, the EPA also finds that there is good cause under 5 U.S.C. 553(d)(3).

#### *I. Pollution Prevention Act*

The Pollution Prevention Act of 1990 states that pollution should be prevented or reduced at the source whenever feasible. During the development of these standards, the EPA explored opportunities to eliminate or reduce emissions through the application of new processes or work practices. By reducing or eliminating the formaldehyde and phenol in binder formulations, HAPs from the curing process would be reduced or eliminated without the use of air pollution control equipment. Alternative binders have been investigated by various mineral wool producers. Acceptable alternatives have been difficult to identify due to the higher costs of the potential alternative binders; the problems associated with requalification of altered products to meet required product specifications; the production process changes necessitated by the use of modified binders; and the concerns regarding potential toxicity of new binder ingredients. Thus, at this time an acceptable alternative binder has not been commercially demonstrated.

#### *J. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA), Pub. L. 104-113 (March 7, 1996), directs the EPA to use voluntary consensus standards in

regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (such as materials specifications, test methods, sampling procedures, and business practices) which are developed or adopted by voluntary consensus standard bodies. Where available and potentially applicable voluntary consensus standards are not used by EPA, the Act requires the Agency to provide Congress, through the OMB, an explanation for not using such standards. This section summarizes the EPA's response to the requirements of the NTTAA for the analytical test methods promulgated as part of this final rule.

Consistent with the NTTAA, the EPA conducted searches to identify voluntary consensus standards for the EPA's emissions sampling and analysis reference methods and industry recommended materials analysis procedures cited in this rule. Candidate voluntary consensus standards for materials analysis were identified for free-formaldehyde content. Consensus comments provided by industry experts were that the candidate standards did not meet industry materials analysis requirements. Therefore, EPA has determined these voluntary consensus standard are impractical for the mineral wool production NESHAP. The EPA, in consultation with the North American Insulation Manufacturers Association (NAIMA), has formulated an industry-specific materials analysis, consensus standard for free-formaldehyde content which is promulgated in this rule.

The EPA search to identify voluntary consensus standards for the EPA's emissions sampling and analysis reference methods cited in this rule identified 17 voluntary consensus standards that appeared to have possible use in lieu of EPA standard reference methods. However, after reviewing available standards, EPA determined that 12 of the candidate consensus standards identified for measuring emissions of the HAPs or surrogates subject to emission standards in the rule would not be practical due to lack of equivalency, documentation, validation data and other important technical and policy considerations. Five of the remaining candidate consensus standards are new standards under development that EPA plans to follow, review and consider adopting at a later date. This rule requires standard EPA emission test methods known to the industry and States. Approved alternative methods also may be used with prior EPA approval.

#### *K. Executive Order 13045—Protection of Children From Environmental Health Risks and Safety Risks*

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that (1) is determined to be "economically significant" as defined under Executive Order 12866, and (2) concerns the environmental health or safety risk that the EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the EPA must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the EPA.

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Order has the potential to influence the regulation. This final rule is not subject to Executive Order 13045 because it is not an economically significant regulatory action as defined by Executive Order 12866, and it is based on technology performance and not on health or safety risks.

#### **List of Subjects**

##### *40 CFR Part 9*

Environmental protection, Recordkeeping and reporting requirements.

##### *40 CFR Part 63*

Environmental protection, Air pollution control, Hazardous substances, Mineral wool production, Recordkeeping and reporting requirements.

Dated: May 13, 1999.

**Carol M. Browner,**  
*Administrator.*

For the reasons set out in the preamble, parts 9 and 63 of title 40, chapter I of the Code of Federal Regulations are amended as follows:

#### **PART 9—OMB APPROVALS UNDER THE PAPERWORK REDUCTION ACT**

1. The authority citation for part 9 continues to read as follows:

**Authority:** 7 U.S.C. 135 *et seq.*, 136-136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601-2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345(d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9, 1857 *et seq.*,

6901-6992k, 7401-7671q, 7542, 9601-9657, 11023, 11048.

2. Section 9.1 is amended by adding a new entry in numerical order to the table under the indicated heading to read as follows:

**§ 9.1 OMB approvals under the Paperwork Reduction Act.**

40 CFR citation	OMB control No.
* * * * *	
<b>National Emission Standards for Hazardous Air Pollutants for Source Categories<sup>3</sup></b>	
* * * * *	
63.1178-63.1194	2060-0362
* * * * *	

<sup>3</sup>The ICRs referenced in this section of the table encompass the applicable general provisions contained in 40 CFR part 63, subpart A, which are not independent information collection requirements.

\* \* \* \* \*

**PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES**

3. The authority citation for part 63 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

4. Part 63 is amended by adding subpart DDD to read as follows:

**Subpart DDD—National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production**

Sec.

- 63.1175 What is the purpose of this subpart?
- 63.1176 Where can I find definitions of key words used in this subpart?
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**Standards**

- 63.1178 For cupolas, what standards must I meet?
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- 63.1180 When must I meet these standards?

**Compliance With Standards**

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**Additional Monitoring Information**

- 63.1184 What do I need to know about the design specifications, installation, and operation of a bag leak detection system?
- 63.1185 How do I establish the average operating temperature of an incinerator?
- 63.1186 How may I change the compliance levels of monitored parameters?
- 63.1187 What do I need to know about operations, maintenance, and monitoring plans?

**Performance Tests and Methods**

- 63.1188 What performance test requirements must I meet?
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- 63.1190 How do I determine compliance?

**Notification, Recordkeeping, and Reporting**

- 63.1191 What notifications must I submit?
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- 63.1193 What reports must I submit?

**Other Requirements and Information**

- 63.1194 Which general provisions apply?
  - 63.1195 Who enforces this subpart?
  - 63.1196 What definitions should I be aware of?
  - 63.1197-63.1199 [Reserved]
- Table 1 to Subpart DDD of Part 63—Applicability of General Provisions (40 CFR Part 63, Subpart A) to Subpart DDD of Part 63.
- Appendix A to Subpart DDD of Part 63—Free Formaldehyde Analysis of Insulation Resins by the Hydroxylamine Hydrochloride Method.

**Subpart DDD—National Emission Standards for Hazardous Air Pollutants for Mineral Wool Production**

**§ 63.1175 What is the purpose of this subpart?**

This subpart establishes national emission standards for hazardous air pollutants emitted from existing, new, and reconstructed cupolas and curing ovens at facilities that produce mineral wool.

**§ 63.1176 Where can I find definitions of key words used in this subpart?**

The definitions of key words used in this subpart are in the Clean Air Act (Act), in § 63.2 of the general provisions in subpart A of this part, and in § 63.1196 of this subpart.

**§ 63.1177 Am I subject to this subpart?**

You are subject to this subpart if you own or operate an existing, new, or reconstructed mineral wool production facility that is located at a plant site that is a major source of hazardous air pollutant (HAP) emissions, meaning the plant emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (10 tons) or more per year or any combination of HAPs at a rate of 22.68 megagrams (25 tons) or more per year.

**Standards**

**§ 63.1178 For cupolas, what standards must I meet?**

(a) You must control emissions from each cupola as follows:

(1) Limit emissions of particulate matter (PM) from each existing, new, or reconstructed cupola to 0.05 kilograms (kg) of PM per megagram (MG) (0.10 pound [lb] of PM per ton) of melt or less.

(2) Limit emissions of carbon monoxide (CO) from each new or reconstructed cupola to either of the following:

(i) 0.05 kg of CO per MG (0.10 lb of CO per ton) of melt or less.

(ii) A reduction of uncontrolled CO emissions by at least 99 percent.

(b) You must meet the following operating limits for each cupola:

(1) Begin within one hour after the alarm on a bag leak detection system sounds, and complete in a timely manner, corrective actions as specified in your operations, maintenance, and monitoring plan required by § 63.1187 of this subpart.

(2) When the alarm on a bag leak detection system sounds for more than five percent of the total operating time in a six-month reporting period, develop and implement a written quality improvement plan (QIP) consistent with the compliance assurance monitoring requirements of § 64.8(b)-(d) of 40 CFR part 64.

(3) Additionally, for each new or reconstructed cupola, maintain the operating temperature of the incinerator so that the average operating temperature for each three-hour block period never falls below the average temperature established during the performance test.

**§ 63.1179 For curing ovens, what standards must I meet?**

(a) You must control emissions from each existing, new, or reconstructed curing oven by limiting emissions of formaldehyde to either of the following:

(1) 0.03 kg of formaldehyde per MG (0.06 lb of formaldehyde per ton) of melt or less.

(2) A reduction of uncontrolled formaldehyde emissions by at least 80 percent.

(b) You must meet the following operating limits for each curing oven:

(1) Maintain the free-formaldehyde content of each resin lot and the formaldehyde content of each binder formulation at or below the specification ranges of the resin and binder used during the performance test.

(2) Maintain the operating temperature of each incinerator so that

the average operating temperature for each three-hour block period never falls below the average temperature established during the performance test.

**§ 63.1180 When must I meet these standards?**

(a) *Existing cupolas and curing ovens.* You must install any control devices and monitoring equipment necessary to meet the standards in this subpart, complete performance testing, and demonstrate compliance with all requirements of this subpart no later than the following:

- (1) June 2, 2002; or
- (2) June 3, 2003 if you apply for and receive a one-year extension under section 112(i)(3)(B) of the Act.

(b) *New and reconstructed cupolas and curing ovens.* You must install any control devices or monitoring equipment necessary to meet the standards in this subpart, complete performance testing, and demonstrate compliance with all requirements of this subpart by the dates in § 63.7 of the general provisions in subpart A of this part.

(c) You must comply with the standards in §§ 63.1178 and 63.1179 of this subpart on and after the dates in paragraphs (a) and (b) of this section.

(d) You must comply with these standards at all times except during periods of startup, shutdown, or malfunction.

**Compliance With Standards**

**§ 63.1181 How do I comply with the particulate matter standards for existing, new, and reconstructed cupolas?**

To comply with the PM standards, you must meet all of the following:

(a) Install, adjust, maintain, and continuously operate a bag leak detection system for each fabric filter.

(b) Do a performance test as specified in § 63.1188 of this subpart and show compliance with the PM emission limits while the bag leak detection system is installed, operational, and properly adjusted.

(c) Begin corrective actions specified in your operations, maintenance, and monitoring plan required by § 63.1187 of this subpart within one hour after the alarm on a bag leak detection system sounds. Complete the corrective actions in a timely manner.

(d) Develop and implement a written QIP consistent with compliance assurance monitoring requirements of 40 CFR 64.8(b) through (d) when the alarm on a bag leak detection system sounds for more than five percent of the total operating time in a six-month reporting period.

**§ 63.1182 How do I comply with the carbon monoxide standards for new and reconstructed cupolas?**

To comply with the CO standards, you must meet all of the following:

(a) Install, calibrate, maintain, and operate a device that continuously measures the operating temperature in the firebox of each thermal incinerator.

(b) Do a performance test as specified in § 63.1188 of this subpart and show compliance with the CO emission limits while the device for measuring incinerator operating temperature is installed, operational, and properly calibrated. Establish the average operating temperature as specified in § 63.1185(a) of this subpart.

(c) Following the performance test, measure and record the average operating temperature of the incinerator as specified in § 63.1185(b) of this subpart.

(d) Maintain the operating temperature of the incinerator so that the average operating temperature for each three-hour block period never falls below the average temperature established during the performance test.

(e) Operate and maintain the incinerator as specified in your operations, maintenance, and monitoring plan required by § 63.1187 of this subpart.

**§ 63.1183 How do I comply with the formaldehyde standards for existing, new, and reconstructed curing ovens?**

To comply with the formaldehyde standards, you must meet all of the following:

(a) Install, calibrate, maintain, and operate a device that continuously measures the operating temperature in the firebox of each thermal incinerator.

(b) Do a performance test as specified in § 63.1188 of this subpart while manufacturing the product that requires a binder formulation made with the resin containing the highest free-formaldehyde content specification range. Show compliance with the formaldehyde emission limits while the device for measuring incinerator operating temperature is installed, operational, and properly calibrated. Establish the average operating temperature as specified in § 63.1185(a) of this subpart.

(c) During the performance test that uses the binder formulation made with the resin containing the highest free-formaldehyde content specification range, record the free-formaldehyde content specification range of the resin used, and the formulation of the binder used, including the formaldehyde content and binder specification.

(d) Following the performance test, monitor and record the free-

formaldehyde content of each resin lot and the formulation of each batch of binder used, including the formaldehyde content.

(e) Maintain the free-formaldehyde content of each resin lot and the formaldehyde content of each binder formulation at or below the specification ranges established during the performance test.

(f) Following the performance test, measure and record the average operating temperature of the incinerator as specified in § 63.1185(b) of this subpart.

(g) Maintain the operating temperature of the incinerator so that the average operating temperature for each three-hour block period never falls below the average temperature established during the performance test.

(h) Operate and maintain the incinerator as specified in your operations, maintenance, and monitoring plan required by § 63.1187 of this subpart.

(i) With prior approval from the Administrator, you may do short-term experimental production runs using resin where the free-formaldehyde content, or binder formulations where the formaldehyde content, is higher than the specification ranges of the resin and binder used during previous performance tests, or using experimental pollution prevention process modifications without first doing additional performance tests. Notification of intent to perform a short-term experimental production run must include the following information:

(1) The purpose of the experimental run.

(2) The affected production process.

(3) How the resin free-formaldehyde content or binder formulation will deviate from previously approved levels or what the experimental pollution prevention process modifications are.

(4) The duration of the experimental run.

(5) The date and time of the experimental run.

(6) A description of any emissions testing to be done during the experimental run.

**Additional Monitoring Information**

**§ 63.1184 What do I need to know about the design specifications, installation, and operation of a bag leak detection system?**

A bag leak detection system must meet the following requirements:

(a) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(b) The sensor on the bag leak detection system must provide output of relative PM emissions.

(c) The bag leak detection system must have an alarm that will sound automatically when it detects an increase in relative PM emissions greater than a preset level.

(d) The alarm must be located in an area where appropriate plant personnel will be able to hear it.

(e) For a positive-pressure fabric filter, each compartment or cell must have a bag leak detector. For a negative-pressure or induced-air fabric filter, the bag leak detector must be installed downstream of the fabric filter. If multiple bag leak detectors are required (for either type of fabric filter), detectors may share the system instrumentation and alarm.

(f) Each triboelectric bag leak detection system must be installed, operated, adjusted, and maintained so that it follows EPA's "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). Other bag leak detection systems must be installed, operated, adjusted, and maintained so that they follow the manufacturer's written specifications and recommendations.

(g) At a minimum, initial adjustment of the system must consist of establishing the baseline output in both of the following ways:

(1) Adjust the range and the averaging period of the device.

(2) Establish the alarm set points and the alarm delay time.

(h) After initial adjustment, the range, averaging period, alarm set points, or alarm delay time may not be adjusted except as specified in the operations, maintenance, and monitoring plan required by § 63.1187 of this subpart. In no event may the range be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless a responsible official as defined in § 63.2 of the general provisions in subpart A of this part certifies in writing to the Administrator that the fabric filter has been inspected and found to be in good operating condition.

**§ 63.1185 How do I establish the average operating temperature of an incinerator?**

(a) During the performance test, you must establish the average operating temperature of an incinerator as follows:

(1) Continuously measure the operating temperature of the incinerator.

(2) Determine and record the average temperatures in consecutive 15-minute blocks.

(3) Determine and record the arithmetic average of the recorded

average temperatures measured in consecutive 15-minute blocks for each of the one-hour performance test runs.

(4) Determine and record the arithmetic average of the three one-hour average temperatures during the performance test runs. The average of the three one-hour performance test runs establishes the temperature level to use to monitor compliance.

(b) To comply with the requirements for maintaining the operating temperature of an incinerator after the performance test, you must measure and record the average operating temperature of the incinerator as required by §§ 63.1182 and 63.1183 of this subpart. This average operating temperature of the incinerator is based on the arithmetic average of the one-hour average temperatures for each consecutive three-hour period and is determined in the same manner described in paragraphs (a)(1) through (a)(4) of this section.

**§ 63.1186 How may I change the compliance levels of monitored parameters?**

You may change control device and process operating parameter levels established during performance tests and used to monitor compliance if you do the following:

(a) You must notify the Administrator of your desire to expand the range of a control device or process operating parameter level.

(b) Upon approval from the Administrator, you must conduct additional performance tests at the proposed new control device or process operating parameter levels. Before operating at these levels, the performance test results must verify that, at the new levels, you comply with the emission limits in §§ 63.1178 and 63.1179 of this subpart.

**§ 63.1187 What do I need to know about operations, maintenance, and monitoring plans?**

(a) An operations, maintenance, and monitoring plan must be submitted to the Administrator for review and approval as part of your application for the title V permit.

(b) The operations, maintenance, and monitoring plan must include the following:

(1) Process and control device parameters you will monitor to determine compliance, along with established operating levels or ranges for each process or control device.

(2) A monitoring schedule.

(3) Procedures for properly operating and maintaining control devices used to meet the standards in §§ 63.1178 and

63.1179 of this subpart. These procedures must include an inspection of each incinerator at least once per year. At a minimum, you must do the following as part of an incinerator inspection:

(i) Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation. Clean pilot sensor if necessary.

(ii) Ensure proper adjustment of combustion air, and adjust if necessary.

(iii) Inspect, when possible, all internal structures (such as baffles) to ensure structural integrity per the design specifications.

(iv) Inspect dampers, fans, and blowers for proper operation.

(v) Inspect motors for proper operation.

(vi) Inspect, when possible, combustion chamber refractory lining. Clean, and repair or replace lining if necessary.

(vii) Inspect incinerator shell for proper sealing, corrosion, and/or hot spots.

(viii) For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments.

(ix) Generally observe whether the equipment is maintained in good operating condition.

(x) Complete all necessary repairs as soon as practicable.

(4) Procedures for keeping records to document compliance.

(5) Corrective actions you will take if process or control device parameters vary from the levels established during performance testing. For bag leak detection system alarms, example corrective actions that may be included in the operations, maintenance, and monitoring plan include:

(i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media, or otherwise repairing the control device.

(iv) Sealing off a defective fabric filter compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions.

**Performance Tests and Methods**

**§ 63.1188 What performance test requirements must I meet?**

You must meet the following performance test requirements:



(a) All monitoring systems and equipment must be installed, operational, and properly calibrated before the performance tests.

(b) Do a performance test, consisting of three test runs, for each cupola and curing oven subject to this subpart at the maximum production rate to demonstrate compliance with each of the applicable emission limits in §§ 63.1178 and 63.1179 of this subpart.

(c) Measure emissions of PM from each existing cupola.

(d) Measure emissions of PM and CO from each new or reconstructed cupola.

(e) Measure emissions of formaldehyde from each existing, new or reconstructed curing oven.

(f) Measure emissions at the outlet of the control device if complying with a numerical emission limit for PM, CO, or formaldehyde, or at the inlet and outlet of the control device if complying with a percent reduction emission limit for CO or formaldehyde.

(g) To determine the average melt rate, measure and record the amount of raw materials, excluding coke, charged into and melted in each cupola during each performance test run. Determine and record the average hourly melt rate for each performance test run. Determine and record the arithmetic average of the average hourly melt rates associated with the three performance test runs. The average hourly melt rate of the three performance test runs is used to determine compliance with the applicable emission limits.

(h) Compute and record the average emissions of the three performance test runs and use the equations in § 63.1190 of this subpart to determine compliance with the applicable emission limits.

(i) Comply with control device and process operating parameter monitoring requirements for performance testing as specified in this subpart.

#### § 63.1189 What test methods do I use?

You must use the following test methods to determine compliance with the applicable emission limits:

(a) Method 1 in appendix A to part 60 of this chapter for the selection of the sampling port locations and number of sampling ports.

(b) Method 2 in appendix A to part 60 of this chapter for stack gas velocity and volumetric flow rate.

(c) Method 3 or 3A in appendix A to part 60 of this chapter for oxygen and carbon dioxide for diluent measurements needed to correct the concentration measurements to a standard basis.

(d) Method 4 in appendix A to part 60 of this chapter for moisture content of the stack gas.

(e) Method 5 in appendix A to part 60 of this chapter for the concentration of PM. Each PM test run must consist of a minimum run time of three hours and a minimum sample volume of 3.75 dscm (135 dscf).

(f) Method 10 in appendix A to part 60 of this chapter for the concentration of CO, using the continuous sampling option described in section 7.1.1 of the method. Each CO test run must consist of a minimum run time of one hour.

(g) Method 318 in appendix A to this part for the concentration of formaldehyde or CO.

(h) Method to determine the free-formaldehyde content of each resin lot in appendix A of this subpart.

#### § 63.1190 How do I determine compliance?

(a) Using the results of the performance tests, you must use the following equation to determine compliance with the PM emission limit:

$$E = \frac{C \times O \times K_1}{P}$$

where:

E = Emission rate of PM, kg/Mg (lb/ton) of melt.

C = Concentration of PM, g/dscm (gr/dscf).

Q = Volumetric flow rate of exhaust gases, dscm/hr (dscf/hr).

K<sub>51</sub> = Conversion factor, 1 kg/1,000 g (1 lb/7,000 gr).

P = Average melt rate, Mg/hr (ton/hr).

(b) Using the results of the performance tests, you must use the following equation to determine compliance with the CO and formaldehyde numerical emission limits:

$$E = \frac{C \times MW \times O \times K_1 \times K_2}{K_3 \times P \times 10^6}$$

where:

E = Emission rate of measured pollutant, kg/Mg (lb/ton) of melt.

C = Measured volume fraction of pollutant, ppm.

MW = Molecular weight of measured pollutant, g/g-mole:

CO = 28.01, Formaldehyde = 30.03.

Q = Volumetric flow rate of exhaust gases, dscm/hr (dscf/hr).

K<sub>1</sub> = Conversion factor, 1 kg/1,000 g (1 lb/453.6 g).

K<sub>2</sub> = Conversion factor, 1,000 L/m<sup>3</sup> (28.3 L/ft<sup>3</sup>).

K<sub>3</sub> = Conversion factor, 24.45 L/g-mole.

P = Average melt rate, Mg/hr (ton/hr).

(c) Using the results of the performance tests, you must use the following equation to determine compliance with the CO and formaldehyde percent reduction performance standards:

$$\%R = \frac{L_i - L_o}{L_i} \times 100$$

where:

%R = Percent reduction, or collection efficiency of the control device.

L<sub>i</sub> = Inlet loading of pollutant, kg/Mg (lb/ton).

L<sub>o</sub> = Outlet loading of pollutant, kg/Mg (lb/ton).

#### Notification, Recordkeeping, and Reporting

##### § 63.1191 What notifications must I submit?

You must submit written notifications to the Administrator as required by § 63.9(b)–(h) of the general provisions in subpart A of this part. These notifications include, but are not limited to, the following:

(a) Notification that the following types of sources are subject to the standard:

(1) An area source that increases its emissions so that it becomes a major source.

(2) A source that has an initial startup before the effective date of the standard.

(3) A new or reconstructed source that has an initial startup after the effective date of the standard and doesn't require an application for approval of construction or reconstruction under § 63.5(d) of the general provisions in subpart A of this part.

(b) Notification of intention to construct a new major source or reconstruct a major source where the initial startup of the new or reconstructed source occurs after the effective date of the standard and an application for approval of construction or reconstruction under § 63.5(d) of the general provisions in subpart A of this part is required.

(c) Notification of special compliance obligations for a new source that is subject to special compliance requirements in § 63.6(b)(3) and (4) of the general provisions in subpart A of this part.

(d) Notification of a performance test at least 60 calendar days before the performance test is scheduled to begin.

(e) Notification of compliance status.

##### § 63.1192 What recordkeeping requirements must I meet?

You must meet the following recordkeeping requirements:

(a) Maintain files of all information required by § 63.10(b) of the general provisions in subpart A of this part, including all notifications and reports.

(b) Maintain records of the following information also:

(1) Cupola production (melt) rate (Mg/hr (tons/hr) of melt).

(2) All bag leak detection system alarms. Include the date and time of the alarm, when corrective actions were initiated, the cause of the alarm, an explanation of the corrective actions taken, and when the cause of the alarm was corrected.

(3) The free-formaldehyde content of each resin lot and the binder formulation, including formaldehyde content, of each binder batch used in the manufacture of bonded products.

(4) Incinerator operating temperature and results of incinerator inspections. For all periods when the average temperature in any three-hour block period fell below the average temperature established during the performance test, and all periods when the inspection identified incinerator components in need of repair or maintenance, include the date and time of the problem, when corrective actions were initiated, the cause of the problem, an explanation of the corrective actions taken, and when the cause of the problem was corrected.

(c) Retain each record for at least five years following the date of each occurrence, measurement, corrective action, maintenance, record, or report. The most recent two years of records must be retained at the facility. The remaining three years of records may be retained off site.

(d) Retain records on microfilm, on a computer, on computer disks, on magnetic tape disks, or on microfiche.

(e) Report the required information on paper or on a labeled computer disk using commonly available and compatible computer software.

#### § 63.1193 What reports must I submit?

You must prepare and submit reports to the Administrator as required by this subpart and § 63.10 of the general provisions in subpart A of this part. These reports include, but are not limited to, the following:

(a) A performance test report, as required by § 63.10(d)(2) of the general provisions in subpart A of this part, that documents the process and control equipment operating parameters during the test period, the test methods and procedures, the analytical procedures, all calculations, and the results of the performance tests.

(b) A startup, shutdown, and malfunction plan, as described in § 63.6(e)(3) of the general provisions in subpart A of this part, that contains specific procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction and a program of corrective action for malfunctioning process and control systems used to comply with the

emission standards. In addition to the information required by § 63.6(e)(3), your plan must include the following:

(1) Procedures to determine and record what caused the malfunction and when it began and ended.

(2) Corrective actions you will take if a process or control device malfunctions, including procedures for recording the actions taken to correct the malfunction or minimize emissions.

(3) An inspection and maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

(c) A report of each event as required by § 63.10(b) of the general provisions in subpart A of this part, including a report if an action taken during a startup, shutdown, or malfunction is inconsistent with the procedures in the plan as described in § 63.6(e)(3) of the general provisions in subpart A of this part.

(d) An operations, maintenance, and monitoring plan as specified in § 63.1187 of this subpart.

(e) A semiannual report as required by § 63.10(e)(3) of the general provisions in subpart A of this part if measured emissions exceed the applicable standard or a monitored parameter varies from the level established during performance testing. The report must contain the information specified in § 63.10(c) of the general provisions, as well as the relevant records required by § 63.1192(b) of this subpart.

(f) A semiannual report stating that no excess emissions or deviations of monitored parameters occurred during the reporting period as required by § 63.10(e)(3)(v) of the general provisions in subpart A of this part if no deviations have occurred.

#### Other Requirements and Information

##### § 63.1194 Which general provisions apply?

The general provisions in subpart A of this part define requirements applicable to all owners and operators affected by NESHAP in part 63. See Table 1 of this subpart for general provisions that apply (or don't apply) to you as an owner or operator subject to the requirements of this subpart.

##### § 63.1195 Who enforces this subpart?

If the Administrator has delegated authority to your State, then the State, along with the EPA, enforces this regulation. If the Administrator has not delegated authority to your State, then the EPA enforces this regulation.

##### § 63.1196 What definitions should I be aware of?

Terms used in this subpart are defined in the Act, in § 63.2 of the general provisions in subpart A of this part, and in this section as follows:

*Bag leak detection system* means a monitoring device for a fabric filter that identifies an increase in particulate matter emissions resulting from a broken filter bag or other malfunction and sounds an alarm.

*Bonded product* means mineral wool to which a hazardous air pollutant-based binder (containing such hazardous air pollutants as phenol or formaldehyde) has been applied.

*CO* means, for the purposes of this subpart, emissions of carbon monoxide that serve as a surrogate for emissions of carbonyl sulfide, a compound included on the list of hazardous air pollutants in section 112 of the Act.

*Cupola* means a large, water-cooled metal vessel to which is charged a mixture of fuel, rock and/or slag, and additives. As the fuel is burned, the charged mixture is heated to a molten state for later processing to form mineral wool.

*Curing oven* means a chamber in which heat is used to thermoset a binder on the mineral wool fiber used to make bonded products.

*Fabric filter* means an air pollution control device used to capture particulate matter by filtering gas streams through fabric bags. It also is known as a baghouse.

*Formaldehyde* means, for the purposes of this subpart, emissions of formaldehyde that, in addition to being a HAP itself, serve as a surrogate for organic compounds included on the list of hazardous air pollutants in section 112 of the Act, including but not limited to phenol.

*Hazardous air pollutant* means any air pollutant listed in or pursuant to section 112(b) of the Act.

*I* means the owner or operator of a mineral wool production facility.

*Incinerator* means an enclosed air pollution control device that uses controlled flame combustion to convert combustible materials to noncombustible gases.

*Melt* means raw materials, excluding coke, that are charged into the cupola, heated to a molten state, and discharged to the fiber forming and collection process.

*Melt rate* means the mass of molten material discharged from a single cupola over a specified time period.

*Mineral wool* means a fibrous glassy substance made from natural rock (such as basalt), blast furnace slag or other slag, or a mixture of rock and slag. It

may be used as a thermal or acoustical insulation material or in the making of other products to provide structural strength, sound absorbency, fire resistance, or other required properties.

*New source* means any affected source the construction or reconstruction of which is commenced after May 8, 1997.

*PM* means, for the purposes of this subpart, emissions of particulate matter that serve as a surrogate for metals (in particulate or volatile form) on the list

of hazardous air pollutants in section 112 of the Act, including but not limited to: antimony, arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium.

*You* means the owner or operator of a mineral wool production facility.

TABLE 1 TO SUBPART DDD OF PART 63—APPLICABILITY OF GENERAL PROVISIONS (40 CFR PART 63, SUBPART A) TO SUBPART DDD OF PART 63

General provisions citation	Requirement	Applies to subpart DDD?	Explanation
63.1(a)(1)–(a)(4)	General Applicability	Yes.	
63.1(a)(5)		No	[Reserved].
63.1(a)(6)–(a)(8)		Yes.	
63.1(a)(9)		No	[Reserved].
63.1(a)(10)–(a)(14)		Yes.	
63.1(b)	Initial Applicability Determination	Yes.	
63.1(c)(1)	Applicability After Standard Established	Yes.	
63.1(c)(2)		Yes	Some plants may be area sources.
63.1(c)(3)		No	[Reserved].
63.1(c)(4)–(c)(5)		Yes.	
63.1(d)		No	[Reserved].
63.1(e)	Applicability of Permit Program	Yes.	
63.2	Definitions	Yes	Additional definitions in § 63.1196.
63.3	Units and Abbreviations	Yes.	
63.4(a)(1)–(a)(3)	Prohibited Activities	Yes.	
63.4(a)(4)		No	[Reserved].
63.4(a)(5)		Yes.	
63.4(b)–(c)	Circumvention/Severability	Yes.	
63.5(a)	Construction/Reconstruction Applicability	Yes.	
63.5(b)(1)	Existing, New, Reconstructed Sources Requirements.	Yes.	
63.5(b)(2)		No	[Reserved].
63.5(b)(3)–(b)(6)		Yes.	
63.5(c)		No	[Reserved].
63.5(d)	Application for Approval of Construction/Reconstruction.	Yes.	
63.5(e)	Approval of Construction/Reconstruction	Yes.	
63.5(f)	Approval of Construction/Reconstruction Based on State Review.	Yes.	
63.6(a)	Compliance with Standards and Maintenance Applicability.	Yes.	
63.6(b)(1)–(b)(5)	New and Reconstructed Sources Dates	Yes.	
63.6(b)(6)		No	[Reserved].
63.6(b)(7)		Yes.	
63.6(c)(1)	Existing Sources Dates	Yes	§ 63.1180 specifies compliance dates.
63.6(c)(2)		Yes.	
63.6(c)(3)–(c)(4)		No	[Reserved].
63.6(c)(5)		Yes.	
63.6(d)		No	[Reserved].
63.6(e)(1)–(e)(2)	Operation & Maintenance Requirements	Yes	§ 63.1187 specifies additional requirements.
63.6(e)(3)	Startup, Shutdown, and Malfunction Plan	Yes.	
63.6(f)	Compliance with Emission Standards	Yes.	
63.6(g)	Alternative Standard	Yes.	
63.6(h)	Compliance with Opacity/VE Standards	No	Subpart DDD does not include VE/opacity standards.
63.6(i)(1)–(i)(14)	Extension of Compliance	Yes	§ 63.1180 specifies date.
63.6(i)(15)		No	[Reserved].
63.6(i)(16)		Yes.	
63.6(j)	Exemption from Compliance	Yes.	
63.7(a)	Performance Test Requirements Applicability.	Yes.	
63.7(b)	Notification	Yes.	
63.7(c)	Quality Assurance/Test Plan	Yes.	
63.7(d)	Testing Facilities	Yes.	
63.7(e)	Conduct of Tests	Yes	§ 63.1188 specifies additional requirements.
63.7(f)	Alternative Test Method	Yes.	
63.7(g)	Data Analysis	Yes.	
63.7(h)	Waiver of Tests	Yes.	

TABLE 1 TO SUBPART DDD OF PART 63—APPLICABILITY OF GENERAL PROVISIONS (40 CFR PART 63, SUBPART A) TO SUBPART DDD OF PART 63—Continued

General provisions citation	Requirement	Applies to subpart DDD?	Explanation
63.8(a)(1) .....	Monitoring Requirements Applicability .....	Yes.	Subpart DDD does not require CMS performance specifications.
63.8(a)(2) .....		No .....	
63.8(a)(3) .....	Conduct of Monitoring .....	No .....	[Reserved].
63.8(a)(4) .....		Yes.	
63.8(b) .....		Yes.	
63.8(c)(1)–(c)(3) .....		Yes.	
63.8(c)(4)–(c)(8) .....		No .....	
63.8(d) .....	Quality Control .....	No .....	Subpart DDD does not require a CMS quality control program.
63.8(e) .....	CMS Performance Evaluation .....	No .....	Subpart DDD does not require CMS performance evaluations.
63.8(f)(1)–(f)(5) .....	Alternative Monitoring Method .....	Yes.	Subpart DDD does not require CEMS.
63.8(f)(6) .....	Alternative to RATA Test .....	No .....	
63.8(g)(1) .....	Data Reduction .....	Yes.	
63.8(g)(2) .....	Notification Requirements Applicability .....	No .....	Subpart DDD does not require COMS or CEMS.
63.8(g)(3)–(g)(5) .....		Yes.	
63.9(a) .....		Yes.	
63.9(b) .....		Yes.	
63.9(c) .....		Yes.	
63.9(d) .....	New Source Notification for Special Compliance Requirements.	Yes.	Subpart DDD does not include VE/opacity standards.
63.9(e) .....	Notification of Performance Test .....	Yes.	
63.9(f) .....	Notification of VE/Opacity Test .....	No .....	
63.9(g) .....	Additional CMS Notifications .....	No .....	Subpart DDD does not require CMS performance evaluation, COMS, or CEMS.
63.9(h)(1)–(h)(3) .....	Notification of Compliance Status .....	Yes.	[Reserved].
63.9(h)(4) .....		No .....	
63.9(h)(5)–(h)(6) .....		Yes.	
63.9(i) .....	Adjustment of Deadlines .....	Yes.	Subpart DDD does not require CMS performance specifications.
63.9(j) .....	Change in Previous Information .....	Yes.	
63.10(a) .....	Recordkeeping/Reporting-Applicability .....	Yes.	
63.10(b) .....	General Recordkeeping Requirements .....	Yes .....	§ 63.1192 includes additional requirements.
63.10(c)(1) .....	Additional CMS Recordkeeping .....	Yes.	[Reserved].
63.10(c)(2)–(c)(4) .....		No .....	
63.10(c)(5) .....		Yes.	
63.10(c)(6) .....	Additional CMS Recordkeeping .....	No .....	Subpart DDD does not require CMS performance specifications.
63.10(c)(7)–(c)(8) .....		Yes.	
63.10(c)(9) .....		No .....	
63.10(c)(10)–(c)(13) .....	Additional CMS Recordkeeping .....	Yes.	[Reserved].
63.10(c)(14) .....		No .....	
63.10(c)(15) .....	General Reporting Requirements .....	Yes.	Additional requirements in § 63.1193.
63.10(d)(1) .....		Yes .....	
63.10(d)(2) .....		Yes.	
63.10(d)(3) .....	Opacity or VE Observations .....	No .....	Subpart DDD does not include VE/opacity standards.
63.10(d)(4)–(d)(5) .....	Progress Reports/ Startup, Shutdown, and Malfunction Reports.	Yes.	Subpart DDD does not require CEMS or CMS performance evaluations.
63.10(e)(1)–(e)(2) .....	Additional CMS Reports .....	No .....	
63.10(e)(3) .....	Excess Emissions/CMS Performance Reports.	Yes.	
63.10(e)(4) .....	COMS Data Reports .....	No .....	Subpart DDD does not require COMS.
63.10(f) .....	Recordkeeping/Reporting Waiver .....	Yes.	
63.11(a) .....	Control Device Requirements Applicability.	Yes.	Flares not applicable.
63.11(b) .....	Flares .....	No .....	
63.12 .....	State Authority and Delegations .....	Yes.	
63.13 .....	Addresses .....	Yes.	Flares not applicable.
63.14 .....	Incorporation by Reference .....	Yes.	
63.15 .....	Information Availability/Confidentiality .....	Yes.	

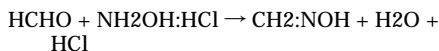
**Appendix A to Subpart DDD of Part 63—  
Free Formaldehyde Analysis of Insulation  
Resins by the Hydroxylamine Hydrochloride  
Method**

**1. Scope**

The method in this appendix was specifically developed for water-soluble phenolic resins that have a relatively high free-formaldehyde (FF) content such as insulation resins. It may also be suitable for other phenolic resins, especially those with a high FF content.

**2. Principle**

2.1 a. The basis for this method is the titration of the hydrochloric acid that is liberated when hydroxylamine hydrochloride reacts with formaldehyde to form formaldoxine:



b. Free formaldehyde in phenolic resins is present as monomeric formaldehyde, hemiformals, polyoxymethylene hemiformals, and polyoxymethylene glycols. Monomeric formaldehyde and hemiformals react rapidly with hydroxylamine hydrochloride, but the polymeric forms of formaldehyde must hydrolyze to the monomeric state before they can react. The greater the concentration of free formaldehyde in a resin, the more of that formaldehyde will be in the polymeric form. The hydrolysis of these polymers is catalyzed by hydrogen ions.

2.2 The resin sample being analyzed must contain enough free formaldehyde so that the initial reaction with hydroxylamine hydrochloride will produce sufficient hydrogen ions to catalyze the depolymerization of the polymeric formaldehyde within the time limits of the test method. The sample should contain approximately 0.3 grams (g) free

formaldehyde to ensure complete reaction within 5 minutes.

**3. Apparatus**

- 3.1 Balance, readable to 0.01 g or better.
- 3.2 pH meter, standardized to pH 4.0 with pH 4.0 buffer and pH 7 with pH 7.0 buffer.
- 3.3 50-mL burette for 1.0 N sodium hydroxide.
- 3.4 Magnetic stirrer and stir bars.
- 3.5 250-mL beaker.
- 3.6 50-mL graduated cylinder.
- 3.7 100-mL graduated cylinder.
- 3.8 Timer.

**4. Reagents**

- 4.1 Standardized 1.0 N sodium hydroxide solution.
- 4.2 Hydroxylamine hydrochloride solution, 100 grams per liter, pH adjusted to 4.00.
- 4.3 Hydrochloric acid solution, 1.0 N and 0.1 N.
- 4.4 Sodium hydroxide solution, 0.1 N.
- 4.5 50/50 v/v mixture of distilled water and methyl alcohol.

**5. Procedure**

5.1 Determine the sample size as follows:  
a. If the expected FF is greater than 2 percent, go to Part A in 5.1.c to determine sample size.

b. If the expected FF is less than 2 percent, go to Part B in 5.1.d to determine sample size.

c. Part A: Expected FF ≥ 2 percent.

Grams resin = 60/expected percent FF

I. The following table shows example levels:

Expected percent free formaldehyde	Sample size, grams
2 .....	30.0
5 .....	12.0
8 .....	7.5

Expected percent free formaldehyde	Sample size, grams
10 .....	6.0
12 .....	5.0
15 .....	4.0

ii. It is very important to the accuracy of the results that the sample size be chosen correctly. If the milliliters of titrant are less than 15 mL or greater than 30 mL, reestimate the needed sample size and repeat the tests.

d. Part B: Expected FF < 2 percent

Grams resin = 30/expected percent FF

I. The following table shows example levels:

Expected percent free formaldehyde	Sample size, grams
2 .....	15
1 .....	30
0.5 .....	60

ii. If the milliliters of titrant are less than 5 mL or greater than 30 mL, reestimate the needed sample size and repeat the tests.

5.2 Weigh the resin sample to the nearest 0.01 grams into a 250-mL beaker. Record sample weight.

5.3 Add 100 mL of the methanol/water mixture and stir on a magnetic stirrer. Confirm that the resin has dissolved.

5.4 Adjust the resin/solvent solution to pH 4.0, using the prestandardized pH meter, 1.0 N hydrochloric acid, 0.1 N hydrochloric acid, and 0.1 N sodium hydroxide.

5.5 Add 50 mL of the hydroxylamine hydrochloride solution, measured with a graduated cylinder. Start the timer.

5.6 Stir for 5 minutes. Titrate to pH 4.0 with standardized 1.0 N sodium hydroxide. Record the milliliters of titrant and the normality.

**6. Calculations**

$$\% \text{ FF} = \frac{\text{mL sodium hydroxide} \times \text{normality} \times 3.003}{\text{grams of sample}}$$

**7. Method Precision and Accuracy**

Test values should conform to the following statistical precision:

Variance = 0.005

Standard deviation = 0.07

95% Confidence Interval, for a single determination = 0.2

**8. Author**

This method was prepared by K.K. Tutin and M.L. Foster, Tacoma R&D Laboratory, Georgia-Pacific Resins, Inc. (Principle written by R. R. Conner.)

**9. References**

- 9.1 GPAM 2221.2.

9.2 PR&C TM 2.035.

9.3 Project Report, Comparison of Free Formaldehyde Procedures, January 1990, K. Tutin.

[FR Doc. 99-12585 Filed 5-28-99; 8:45 am]

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