

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2002-0086, FRL-8695-9]

RIN 2060-AN80

**National Emission Standards for Hazardous Air Pollutants for
Semiconductor Manufacturing**

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is issuing amendments to the national emission standards for hazardous air pollutants (NESHAP) for semiconductor manufacturing. These amendments establish a new maximum achievable control technology floor level of control for existing and new combined hazardous air pollutants process vent streams containing inorganic and organic hazardous air pollutants and clarify the emission requirements for process vents by adding definitions for organic, inorganic, and combined hazardous air pollutant process vent streams that contain both organic and inorganic hazardous air pollutant.

DATES: This final rule is effective on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2002-0086. All documents in the docket are listed in the Federal Docket Management System index at

<http://www.regulations.gov>. Although listed in the index, some information is not publicly available, e.g., confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through www.regulations.gov or in hard copy at the National Emission Standards for Hazardous Air Pollutants for Semiconductor Manufacturing Docket, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: Mr. John Schaefer, Sector Policies and Programs Division, Office of Air Quality Planning and Standards (D243-05), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number: (919) 541-0296; fax number: (919) 541-3207; e-mail address: Schaefer.john@epa.gov.

SUPPLEMENTARY INFORMATION:

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I. General Information

- A. Does this action apply to me?

The regulated categories and entities potentially affected by these final amendments include:

Category	NAICS code ¹	Examples of regulated entities
Industry . . .	334413	Semiconductor crystal growing facilities, semiconductor wafer fabrication facilities, semiconductor test and assembly facilities.
Federal government		Not affected.
State/local/tribal government		Not affected.

¹ North American Industry Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria in 40 CFR 63.7181 of the rule. If you have any questions regarding the applicability of this action to a particular entity, consult either the air permit authority for the entity or your EPA regional representative as listed in 40 CFR 63.13 of subpart A (General Provisions).

B. Where can I get a copy of this document?

In addition to being available in the docket, an electronic copy of this final action will also be available on the Worldwide Web (WWW) through the Technology Transfer Network (TTN). Following signature, a copy of this final action will be posted on the TTN's policy and guidance page for newly proposed or promulgated rules at the following address:

<http://www.epa.gov/ttn/oarpg/>. The TTN provides information and technology exchange in various areas of air pollution control.

C. Judicial Review

Under section 307(b)(1) of the Clean Air Act (CAA), judicial review of these final rules is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by [INSERT DATE 60 DAYS AFTER

PUBLICATION IN THE FEDERAL REGISTER]. Under section 307(d)(7)(B) of the CAA, only an objection to these final rules that was raised with reasonable specificity during the period for public comment can be raised during judicial review. This section also provides a mechanism for us to convene a proceeding for reconsideration, "[i]f the person raising an objection can demonstrate to EPA that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule." Any person seeking to make such a demonstration to us should submit a Petition for Reconsideration to the Office of the Administrator, Environmental Protection Agency, Room 3000, Ariel Rios Building, 1200 Pennsylvania Ave., NW., Washington, DC 20460, with a copy to the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20004. Moreover, under section 307(d)(7)(B) of the CAA, only an objection to these final rules that was raised with reasonable specificity during the period for public comment can be raised during judicial review. Moreover, under section 307(b)(2) of the CAA, the

requirements established by these final rules may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce these requirements.

II. Background Information

On May 22, 2003, we promulgated the NESHAP for semiconductor manufacturing, under section 112(d) of the CAA. (68 FR 27913); 40 CFR part 63, subpart BBBBB). The NESHAP requires all semiconductor manufacturing facilities that are major sources of hazardous air pollutants (HAP) to meet standards reflecting application of the maximum achievable control technology (MACT). The NESHAP establishes emissions limitations for the control of HAP from semiconductor manufacturing operations. The compliance date for the NESHAP requirements was May 22, 2006.

After promulgation, it was brought to our attention that while the NESHAP established separate emission standards for organic and inorganic HAP from process vents, one plant had a different process vent system. Specifically, we learned that this plant combined inorganic and organic vent streams into a single atmospheric process vent. At the time we developed the MACT standard, however, we had determined that since at least 1980 industry practice has been to strictly separate process vent emissions into streams containing either organic or inorganic HAP (71 FR 61701). This was because we were not aware

of any sources that combined their inorganic and organic vent streams, and, therefore, had no data on such sources.

Therefore, the NESHAP failed to account for the existence of combined organic and inorganic HAP process vents.

On October 19, 2006, in order to address these combined process vent streams, we proposed amending the NESHAP by establishing emission standards for existing and new combined process vent streams (71 FR 61701). We proposed no control for the limited number of existing combined process vents. Additionally, for new and reconstructed combined HAP process vents, we proposed the requirement for inorganic HAP process vents to be the same as the requirement that currently apply to inorganic HAP process vents and the requirement for organic HAP process vents to be the same as the requirement that currently apply to organic HAP process vents (71 FR 61703). Further, we proposed new definitions that clarified the applicability of the NESHAP to inorganic, organic and combined HAP process vents.

Subsequently, the D.C. Circuit in Sierra Club v. EPA, 479 F.3d 875 (D.C. Circuit 2007), found that our decision to set no control emission floors for source categories where the best performing sources did not use emission control technology was in direct contravention of CAA section 112(d)(3). In response to this decision, we issued a supplemental proposal on April 2, 2008 that proposed an emission limitation for existing and new

combined HAP process vents. Specifically, we proposed that new and existing combined HAP process vents achieve a control level of 14.22 parts per million by volume (ppmv) (73 FR 17942). We also proposed no beyond the floor control options because we determined as prohibitive the costs associated with the one control option we evaluated.

III. Summary of the Final Amendments

In today's rule we are taking final action on both our October 2006 (71 FR 61703), and April 2008 proposals (73 FR 17940). Therefore, we are finalizing, as proposed in October 2006, definitions that clarify the applicability of the NESHAP to inorganic, organic and combined HAP process vents. We are also promulgating, as proposed in April 2008, an emission limitation of 14.22 ppmv for new and existing combined HAP process vents.

IV. Summary of Comments and Responses

We received 3 comments on our October 2006 and April 2008 proposals. The commenters were generally supportive of both proposals. A summary of the significant issues raised in the comments are included below.

Comment: One commenter expressed support for the development of a separate MACT floor level of control for combined HAP process vents contained in the April 2, 2008, proposal. The commenter stated, "This action appropriately

recognizes that a limited number of process vents at older, existing facilities have unique emission characteristics that warrant distinction from the process vents used to establish the original MACT floor." The commenter gave a description of the typical construction of a modern semiconductor facility indicating that clean rooms are situated on a single floor with semiconductor manufacturing tools arranged in cells of similar tools (e.g., web benches, furnaces, etc. are grouped together). The commenter stated that these features and other features in a modern semiconductor facility make the segregation and treatment of concentrated organic and inorganic HAP emission streams feasible. However, segregating emission streams into their organic and inorganic constituents was near infeasible for some older facilities, such as the one described by the commenter, where tools are located on three separate floors, and are not grouped together in cells according to tool function and type. Due to these reasons the commenter indicated strong support for EPA's development of a separate MACT floor for combined HAP process vents.

Response: We agree with the commenter that the proposed changes to the standard are necessary to account for the limited number of older facilities that do not segregate their emissions due to facility design limitations. Today's rule reflects our conclusion that a separate MACT floor for these facilities is

appropriate. Therefore, as stated earlier we are promulgating definitions that clarify the applicability of the existing NESHAP and an emissions limitation of 14.22 ppmv for new and existing combined HAP process vents.

V. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

This action is not a "significant regulatory action" under the terms of Executive Order (EO) 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under the EO.

B. Paperwork Reduction Act

This action does not impose any new information collection burden. These amendments clarify applicability of the final rule. Therefore, the Information Collection Request (ICR) has not been revised.

However, the Office of Management and Budget (OMB) has previously approved the information collection requirements contained in the existing regulations 40 CFR part 63, subpart BBBBB under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and has assigned OMB control number 2060-0519. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act generally requires an agency to prepare a regulatory flexibility analysis of any rule subject

to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule would 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.

For the purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) a small business that meets the Small Business Administration size standards for small businesses found at 13 CFR 121.201 (less than 500 employees for NAICS codes 331511, 331512, and 331513); (2) a small governmental jurisdiction that is a government of a city, county, town, school district, or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This final rule will not impose any requirements on small entities since we do not create any new requirements or burdens that were not already included in the economic impact assessment for the existing rule.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 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, 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 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 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 EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal 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.

This final rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector. The final amendments are expected to result in an overall reduction in expenditures for the private sector and are not expected to impact State, local, or tribal governments. Thus, the final amendments are not subject to the requirements of sections 202 and 205 of the UMRA.

E. Executive Order 13132: Federalism

Executive Order 13132 (64 FR 43255, August 10, 1999) requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" are defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various

levels of government.”

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. These final amendments do not impose any requirements on State and local governments. Thus, Executive Order 13132 does not apply to this rule. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communication between EPA and State and local governments, EPA specifically solicited comment on the proposed rule from State and local officials.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

Executive Order 13175 (65 FR 67249, November 6, 2000), requires EPA to develop an accountable process to ensure “meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.” This final rule does not have tribal implications, as specified in Executive Order 13175. These final amendments impose no requirements on tribal governments. Thus, Executive Order 13175 does not apply to this rule.

G. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks

EPA interprets EO 13045 (62 FR 19885, April 23, 1997) as applying to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the Order has the potential to influence the regulation. This action is not subject to EO 13045 because it is based solely on technology performance.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law No. 104-114, 12(d)(15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not involve technical standards. Therefore, EPA did not consider the use of any voluntary consensus standards.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because they do not affect the level of protection provided to human health or the environment. These final amendments do not relax the control measures on sources regulated by the rule and therefore will not cause emissions increases from these sources.

K. Congressional Review Act

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 Congress and to the Comptroller General of the United States. EPA will submit a report containing these final amendments 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 final amendments in the Federal Register. A major rule cannot take effect until 60 days after it is published 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 on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Reporting and recordkeeping requirements.

Dated: July 15, 2008

Stephen L. Johnson,
Administrator.

For the reasons stated in the preamble, title 40, chapter I, part 63, of the Code of the Federal Regulations is amended as follows:

PART 63--[AMENDED]

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

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

2. Section 63.7184 is amended by revising paragraphs (b) and (c) and adding paragraph (f) to read as follows:

§63.7184 What emission limitations, operating limits, and work practice standards must I meet?

* * * * *

(b) Process vents - organic HAP emissions. For each organic HAP process vent, other than process vents from storage tanks, you must limit organic HAP emissions to the level specified in paragraph (b)(1) or (2) of this section. These limitations can be met by venting emissions from your process vent through a closed vent system to any combination of control devices meeting the requirements of §63.982(a)(2).

(1) Reduce the emissions of organic HAP from the process vent stream by 98 percent by weight.

(2) Reduce or maintain the concentration of emitted organic HAP from the process vent to less than or equal to 20 parts per million by volume (ppmv).

(c) Process vents - inorganic HAP emissions. For each inorganic HAP process vent, other than process vents from storage tanks, you must limit inorganic HAP emissions to the level specified in paragraph (c)(1) or (2) of this section. These limitations can be met by venting emissions from your process vent through a closed vent system to a halogen scrubber meeting the requirements of §§63.983 (closed vent system requirements) and §63.994 (halogen scrubber requirements); the applicable general monitoring requirements of §63.996; the applicable performance test requirements; and the monitoring, recordkeeping and reporting requirements referenced therein.

(1) Reduce the emissions of inorganic HAP from the process vent stream by 95 percent by weight.

(2) Reduce or maintain the concentration of emitted inorganic HAP from the process vent to less than or equal to 0.42 ppmv.

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(f) Process vents - combined HAP emissions. For each combined HAP process vent, other than process vents from storage tanks, you must reduce or maintain the concentration of emitted HAP from the process vent to less than or equal to 14.22 ppmv. These limitations can be met by venting emissions from your process vent through a closed vent system to any combination of control devices meeting the requirements of §63.982(a)(2).

3. Section 63.7195 is amended by adding definitions in alphabetical order for "Combined HAP process vents, Organic HAP process vents and Inorganic HAP process vents" to read as follows:

§63.7195 What definitions apply to this subpart?

* * * * *

Combined HAP Process Vent means a process vent that emits both inorganic and organic HAP to the atmosphere.

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Inorganic HAP Process Vent means a process vent that emits only inorganic HAP to the atmosphere.

Organic HAP Process Vent means a process vent that emits only organic HAP to the atmosphere.

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