

## FACT SHEET

### FINAL AMENDMENTS TO THE AIR TOXICS STANDARDS FOR MINERAL WOOL PRODUCTION AND WOOL FIBERGLASS MANUFACTURING

#### ACTION

- On June 25, 2015, the Environmental Protection Agency (EPA) issued final risk and technology review (RTR) amendments to the emission standards regulating mineral wool and wool fiberglass facilities and a new air toxics standard for area sources in the wool fiberglass manufacturing industry. These three rules will further reduce emissions of toxic air pollutants, also known as hazardous air pollutants (HAP) or air toxics, which are known or suspected to cause cancer and other serious health and environmental effects.
- Industrial facilities that have the potential to emit at least 10 tons per year of a single toxic air pollutant or 25 tons per year of any combination of toxic air pollutants are “major” sources. Facilities that emit less than these amounts are called "area" sources.
- EPA issued the air toxics standards for major sources in the mineral wool production and the wool fiberglass manufacturing industries separately in June 1999. EPA proposed action on its review of the remaining health risks and updated technologies for these industrial categories together in November 2011.
- Products made from mineral wool are generally used in high population density buildings for insulation, fire proofing and noise attenuation. The mineral wool air toxics standards currently apply to eight facilities, all of which are major sources.
- Wool fiberglass products are mostly used for residential insulation, with two plants also operating a pipe insulation line. There are a total of 30 sources in the wool fiberglass industry. The air toxics standards currently apply to 10 major source facilities. The area source rule applies to the remaining 20 wool fiberglass facilities.
- EPA supplemented its November 2011 proposal for wool fiberglass major sources by proposing first-time standards for wool fiberglass area sources in April 2013.
- In November 2014, EPA issued a second supplemental proposal to revise emission limits based on a new approach to maximum achievable control technology (MACT) floor calculations with limited datasets. EPA also explained the use of the upper prediction limit in setting emission limits and issued a few clarifications and corrections to the previous proposals.

#### Final Wool Fiberglass Area Source Rule

- Most wool fiberglass plants have become area sources by eliminating or reducing phenol/formaldehyde emissions from the binding processes in their wool fiberglass manufacturing lines. Reducing these emissions decreases their overall air toxics emissions and changes their applicability so that they are no longer subject to the major source rule.

- Of the total 30 wool fiberglass manufacturing facilities in the United States, 20 are now area sources. Many of the remaining 10 major sources have announced plans to become area sources in the near future.
- The final rule regulates gas-fired furnaces at wool fiberglass manufacturing facilities that are area sources to control their emissions of chromium compounds, including highly-toxic hexavalent chromium.
- Area sources currently emit low levels of chromium compounds. As furnaces age, emissions of this toxic pollutant can increase over time. EPA set the chromium compound emissions limits for area sources at the levels currently demonstrated by well-performing facilities. While this rule will not result in chromium emissions reductions from current levels, the chromium emission limits in this rule will prevent significant future increases in chromium compound emissions.
- The area source rule will refer to the major source rule's compliance, measurement, recordkeeping, reporting, monitoring, startup, shutdown and malfunction requirements.

## **Final Wool Fiberglass Major Source Rule**

### **Risk Review**

- EPA conducted a risk review based on actual emissions from wool fiberglass manufacturing and found that risk is acceptable with a maximum individual lifetime cancer risk of 20-in-1 million. These risk are driven by emissions of formaldehyde and hexavalent chromium.
- EPA found that one furnace emitted chromium at a higher rate than the other furnaces due to furnace design, construction practices and raw material choice. The Agency concluded that other wool fiberglass manufacturing facilities could construct a similar furnace having similar chromium emissions.
- In response, EPA conducted an auxiliary risk analysis to evaluate the risk that would result if other wool fiberglass furnaces had similar emission rates and found the maximum individual lifetime cancer risk could be as high as 400-in-a million. Additionally, EPA found that chromium emissions increase exponentially over time as a result of furnace refractory degradation.
- To prevent the escalation of chromium emissions from wool fiberglass furnaces and provide an ample margin of safety, EPA concluded that chromium emissions could be further reduced cost effectively. EPA is finalizing limits for chromium from gas-fired furnaces at 0.00025 lb/ton of glass pulled further reducing chromium emissions from furnaces located at major sources by 524 pounds per year.

### **Technology Review**

- EPA also conducted a technology review for the Wool Fiberglass Manufacturing source category and found that there are improvements in technology that will help further reduce emissions from furnaces. As a result, the Agency is amending the particulate matter (PM) limit for existing and new glass-melting furnaces.

- EPA reviewed the source category to determine if all hazardous air pollutants are regulated appropriately and if all sources are subject to emission limits. As a result of this review, EPA is:
  - removing formaldehyde as an emissions surrogate for phenol and methanol; and
  - setting emission limits for phenol, formaldehyde and methanol for flame attenuation (FA) lines that will maintain emissions of these compounds current low levels.
- EPA is deferring action on emissions limits for phenol, methanol and formaldehyde for rotary spin lines, pending new information. The Agency has issued a request for information under Section 144 of the Clean Air Act to gather more data to better inform future rulemakings.
- The final rule eliminates the exemptions to emission limits and standards during periods of startup, shutdown and malfunction to ensure the standards are consistent with the United States Court of Appeals for the District of Columbia Circuit's vacatur of similar provisions in other rules. EPA is requiring work practices standards, as demonstrated by the best performers in this industry for periods of startup and shutdown.
  - During startup, gas-fired glass-melting furnaces can preheat an empty furnace using only natural gas or other clean fuels. Electric furnaces can startup using only glass cullet and natural gas; and
  - Capture and control all emissions during startup and shutdown using equipment operated in the manner that showed compliance during the most recent performance test.

## **Final Mineral Wool Major Source Rule**

### **Risk Review**

- EPA conducted a risk review based on actual emissions from mineral wool production and found that risk is acceptable at a maximum individual lifetime cancer risk of 10-in-1 million. These risks are driven by emissions of formaldehyde.

### **Technology Review**

- EPA evaluated the current technology and concluded that no new technologies are in use that would cost-effectively further reduce emissions of any regulated hazardous air pollutant.
- EPA reviewed the source category to determine if all hazardous air pollutants are regulated appropriately and if all sources are subject to emission limits. As a result of this review, EPA is:
  - removing carbon monoxide as an emissions surrogate for carbonyl sulfide;
  - removing formaldehyde as a surrogate for phenol and methanol;
  - setting emission limits for carbonyl sulfide, hydrogen fluoride and hydrogen chloride for four subcategories of new and existing cupolas; and
  - setting emission limits for phenol, formaldehyde and methanol for three subcategories of new and existing combined collection/curing lines.
- The final rule eliminates exemptions to emission limits and standards during periods of startup, shutdown and malfunction to ensure the standards are consistent with the United States Court of Appeals for the District of Columbia Circuit's vacatur of similar provisions in other rules. EPA is promulgating work practices standards, as demonstrated by the best performers in this industry, for these periods.

- Mineral wool facilities will be required to either use only natural gas or other clean fuel in the cupola, or to use the work practices demonstrated by the best performers to control emissions during startup and shutdown (i.e., to capture and control all emissions using control equipment operated in the manner that showed compliance during the most recent performance test.)

### **Compliance Dates for the Final Rules**

- Startup, shutdown and malfunction provisions will be effective immediately upon publication of the final rules.
- Existing impacted wool fiberglass plants will have 2 years to comply with these revised standards. Existing mineral wool plants will have 3 years to comply. Please see the tables on the last page of this fact sheet for the emission limits for each type of facility.

### **BACKGROUND**

- The Clean Air Act requires the EPA to regulate toxic air pollutants from large industrial facilities in two phases:
- The first phase is “technology-based,” where the EPA develops standards for controlling the emissions of air toxics from sources in a source category. These Maximum Achievable Control Technology (MACT) standards are based on emission levels that are already being achieved by the better-controlled and lower-emitting sources in an industry.
- The second phase is a “risk-based” approach called residual risk. Within 8 years of setting the MACT standards, the Clean Air Act directs EPA to assess the remaining health risks from each source category to determine whether the MACT standards protect public health with an ample margin of safety and also protect against adverse environmental effects. Here, EPA must determine whether more health-protective standards are necessary or cost effective.
- Also, every 8 years after setting the air toxics standards, the Clean Air Act requires that EPA review and revise the standards, if necessary, to account for process changes, including improvements in air pollution controls and/or prevention.
- Additionally, under the Urban Air Toxics Strategy, EPA regulates area sources of 33 urban air toxics presenting the greatest threat to human health and the environment in urban areas.
- The previously-issued air toxic standards for mineral wool and wool fiberglass production processes are part of 96 air toxic standards that require 174 industry sectors to eliminate 1.7 million tons of 187 toxic air pollutants. Congress listed these toxic air pollutants in the Clean Air Act.

### **FOR MORE INFORMATION ON THE FINAL RULES**

- Interested parties can download the notice from the EPA's web site at the following addresses: <http://www.epa.gov/ttn/atw/minwool/minwopg.html> and <http://www.epa.gov/ttn/atw/woolfib/woolfipg.html>.

- Today's final rules and other background information are also available either electronically at <http://www.regulations.gov>, the EPA's electronic public docket and comment system, or in hardcopy at the EPA Docket Center's Public Reading Room.
  - The Public Reading Room is located in the EPA Headquarters Library, Room Number 3334 in the EPA WJC West Building, located at 1301 Constitution Avenue, NW, Washington, DC. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding federal holidays.
  - Visitors are required to show photographic identification, pass through a metal detector and sign the EPA visitor log. All visitor materials will be processed through an X-ray machine as well. Visitors will be provided a badge that must be visible at all times.
  - Visitors must show valid picture identification to gain access to the meeting room. The REAL ID Act, passed by Congress in 2005, established new requirements for entering federal facilities. Visitors holding driver's licenses issued by Alaska, American Samoa, Arizona, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Montana, New York, Oklahoma or the state of Washington must present an additional form of identification to enter the federal building, such as federal employee badges, passports and military identification cards.
- Materials for this final action can be accessed using Docket ID Numbers EPA-HQ-OAR-2010-1041 and EPA-HQ-OAR-2010-1042.
- For further information, contact Susan Fairchild of the EPA's Office of Air Quality Planning and Standards by phone at (919) 541-5167, or by email at: [fairchild.susan@epa.gov](mailto:fairchild.susan@epa.gov).

### Final Rule Emission Limits

EPA is finalizing this emission limit for area sources in the Wool Fiberglass Manufacturing source category:

Process	Subcategory	Pollutant	Emission Limit (lb/ton)
Glass-Melting Furnace	Gas-Fired Glass-Melting Furnace	Chromium Compounds	0.00025

EPA is finalizing these emission limits for major sources in the Wool Fiberglass Manufacturing source category:

Process	Subcategory	Pollutant	Emission Limit (lb/ton)
New and Existing Glass-Melting Furnaces		PM	0.33
	Gas-fired Glass-Melting Furnace	Chromium Compounds	0.00025
New Flame Attenuation Lines		Phenol	0.44
		Formaldehyde	2.6
		Methanol	0.35
Existing Flame Attenuation Lines		Phenol	1.4
		Formaldehyde	5.6
		Methanol	0.50

EPA is finalizing these emission limits for major sources in the Mineral Wool Manufacturing source category:

Process	Subcategory	HAP	Emission Limit (lb/ton)
Cupolas	Existing Open-Top	Carbonyl Sulfide	6.8
	New Open Top		3.2
	Existing Closed Top		3.4
	New Closed Top		0.062
	Existing Processing Slag	Hydrogen Flouride	0.16
		Hydrogen Chloride	0.44
	New Processing Slag	Hydrogen Flouride	0.015
		Hydrogen Chloride	0.012
	Existing Not Processing Slag	Hydrogen Flouride	0.13
		Hydrogen Chloride	0.43
	New Not Processing Slag	Hydrogen Flouride	0.018
		Hydrogen Chloride	0.015

Bonded Lines	Vertical (Existing and New)	Formaldehyde	2.4
		Phenol	0.71
		Methanol	0.92
	Horizontal (Existing and New)	Formaldehyde	0.63
		Phenol	0.12
		Methanol	0.049
	Drum (Existing and New)	Formaldehyde	0.17
		Phenol	0.85
		Methanol	0.28