

# Boiler MACT Rule summary (40 CFR 63 subpart DDDDD)

This final rule addresses the combustion of non-solid waste materials in boilers and process heaters located at major sources of HAPs.

Important Dates:

April 29, 2010-Rule was proposed

August 23, 2010-Comment period ends

February 21, 2011-Rule was signed by the Administrator

March 21, 2011-Rule was published in FR

## APPLICABILITY

ICI boilers and process heaters located at major sources of HAPs are regulated by this rule. If an owner or operator of an affected source subject to these standards were to start combusting a solid waste, the affected source would cease to be subject to this action and would be subject to the regulations under CAA Section 129. There are other exemptions for boilers and process heaters which would not be subject to this rule.

**For units that may burn multiple fuel-types:**

1. Units designed to burn biomass/bio-based solid subcategory: boiler or process heater that burns at least 10% biomass or bio-based solids in combination with solid fossil fuels, liquid fuels, or gaseous fuels

2. Units designed to burn coal/solid fossil fuel subcategory: boiler or process heater that burns any coal or solid fossil fuel alone or at least 10% coal or other solid fuel in combination with liquid fuels, gaseous fuels, or less than 10% biomass and bio-based solids on an annual heat input basis.

3. Units designed to burn Gas 1 subcategory: boilers and process heaters that burn only natural gas, refinery gas, and/or other Gas 1

fuels  
 4. Units designed to burn Gas 2 (other) subcategory: boilers and process heaters that are not designed to burn Gas 1 fuels and burn any gaseous fuels alone or in combination with less than 10% coal/solid fossil fuel, less than 10% biomass/bio-based solid fuel, and less than 10% liquid fuels on an annual basis.  
 5. Units designed to burn liquid subcategory: boilers and process heaters that burn any liquid fuel, but less than 10% coal/solid fossil fuel and less than 10% biomass/bio-based solid fuels on an annual heat input basis.

Pollutants regulated:  
 HCl (as a surrogate for acid gas HAP)  
 PM (as a surrogate for non-Hg HAP metals)  
 CO (as a surrogate for non-dioxin/furan organic HAP)  
 Hg  
 Dioxins/Furans

**Compliance Dates (§63.7495):**

**New or Reconstructed Source:** Must comply with this subpart by 60 days after March 21, 2011 or upon startup of the source, whichever is later.

**Existing Source:** Must comply with this subpart no later than 3 years after March 21, 2011. An area source that becomes a major source:

New or reconstructed boiler or process heater at the existing source must be in compliance upon startup

Existing boiler or process heater at an existing source must be in compliance within 3 years

ICI boilers that would be subject to this subpart but combust solid waste are subject to the CISWI rule: If solid waste is no longer burned, you must be in compliance with this subpart on the date of the switch from waste to fuel.

Subcategories for boilers/process heaters
<b>Pulverized coal/solid fossil fuel units</b>
<b>Stokers designed to burn coal/solid fossil fuel</b>
<b>Fluidized bed units designed to burn coal/solid fossil fuel</b>
<b>Stokers designed to burn biomass/bio-based solids</b>
<b>Fluidized bed units designed to burn biomass/bio-based solids</b>
<b>Suspension burners/Dutch Ovens designed to burn biomass/bio-based solids</b>
<b>Fuel cells designed to burn biomass/bio-based solids</b>
<b>Units designed to burn solid fuel</b>
<b>Units designed to burn liquid fuel</b>
<b>Units designed to burn liquid fuel in non-continental States or territories</b>
<b>Units designed to burn natural gas, refinery gas, or other Gas 1 fuels</b>
<b>Units designed to burn Gas 2 (other) fuels</b>
<b>Metal process furnaces</b>
<b>Limited-use boilers/process heaters</b>
<b>Hybrid suspension/grate burners designed to burn biomass/bio-based solids</b>

The emission limits listed in the tables below apply to units with a designated heat input capacity of 10 million Btu per hour or greater. This rule has additional output-based standards. Units are **pounds per million British Thermal units** unless noted.

Subcategory (Existing)	PM (Particulate Matter)	Hydrogen Chloride (HCl)	Mercury (Hg)	Carbon Monoxide (CO ppm @ 3% oxygen)	Dioxin/furan (TEQ) (ng/dscm)
Coal Stoker	0.039	0.035	0.0000046	270	0.003
Coal Fluidized Bed	0.039	0.035	0.0000046	82	0.002
Pulverized Coal	0.039	0.035	0.0000046	160	0.004
Biomass Stoker/other	0.039	0.035	0.0000046	490	0.005
Biomass Fluidized bed	0.039	0.035	0.0000046	430	0.02
Biomass Dutch Oven/Suspension Burner	0.039	0.035	0.0000046	470	0.2
Biomass fuel cells	0.039	0.035	0.0000046	690	4
Biomass Suspension/Grate	0.039	0.035	0.0000046	3500	0.2
Liquid	0.0075	0.00033	0.0000035	10	4
Gas 2 (other process gases)	0.043	0.0017	0.000013	9.0	0.08
Non-continental liquid	0.0075	0.0003	0.00000078	160	4

Subcategory (New)	PM (Particulate Matter)	Hydrogen Chloride (HCl)	Mercury (Hg)	Carbon Monoxide (CO ppm @ 3% oxygen)	Dioxin/furan (TEQ) (ng/dscm)
Coal Stoker	0.0011	0.0022	0.0000035	6	0.003
Coal Fluidized Bed	0.0011	0.0022	0.0000035	18	0.002
Pulverized Coal	0.0011	0.0022	0.0000035	12	0.003
Biomass Stoker	0.0011	0.0022	0.0000035	160	0.005
Biomass Fluidized Bed	0.0011	0.0022	0.0000035	260	0.02
Biomass Dutch Oven/Suspension Burner	0.0011	0.0022	0.0000035	470	0.2
Biomass fuel cells	0.0011	0.0022	0.0000035	470	0.003
Biomass Suspension/Grate	0.0011	0.0022	0.0000035	1500	0.2
Liquid	0.0013	0.0031	0.00000021	3	0.002
Gas 2 (other process gases)	0.0067	0.0017	0.0000079	3	0.08
Non-continental liquid	0.0013	0.0032	0.00000078	51	0.002

**Initial compliance deadline (§63.7510):**

Existing sources must demonstrate initial compliance no later than 180 days after the compliance date.

New/Reconstructed sources that had construction or modifications after June 4, 2010 must demonstrate initial compliance no later than November 16, 2011. New/Reconstructed sources complying with an emission limit in Table 12 must demonstrate compliance by September 17, 2014.

A work practice standard is also proposed for three classes of boilers and process heaters.

- New and existing units with a heat input capacity of less than 10 million Btu per hour
- New and existing units in the Gas 1 subcategory
- Units in the metal process furnace subcategory

**Notification, Recordkeeping, and Reporting Requirements (§63.7545, §63.7550, §63.7555):**

Notifications Required:

- Notifications required by the General Provisions
- Initial Notifications must be submitted no later than 120 days after the affected source is subject to the rule
- Notification of Intent to Test must be submitted at least 60 days before the performance test and/or compliance demonstration is scheduled
- Notification of Compliance Status must be submitted 60 days after the completion of the performance test and/or compliance demonstration
- Compliance reports to be submitted semiannually (units with emission limits)
- Compliance reports to be submitted annually or biennially (units with work practice/management practice standards)

Additional reports are also required under this rule.

<i>If your boiler is...</i>	<i>You must do the following...</i>
<b>A new or existing boiler or process heater with heat input capacity of less than 10 million Btu per hour or a limited use boiler or process heater.</b>	Conduct a tune-up of the boiler or process heater biennially.
<b>A new or existing boiler or process heater on either the Gas 1 or Metal Processes Furnace subcategory with heat input capacity of 10 million Btu per hour or greater.</b>	Conduct a tune-up of the boiler annually.
<b>An existing boiler or process heater located at a major source facility.</b>	<p>Must have an energy assessment performed on the major source facility by qualified personnel which includes:</p> <ul style="list-style-type: none"> <li>A visual inspection of the boiler or process heater system.</li> <li>An evaluation of operating characteristics of the facility, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints</li> <li>An inventory of major energy consuming systems</li> <li>A review of available architectural and engineering plans, fuel usage, maintenance procedures and logs</li> <li>A review of the facility’s energy management practices and provide recommendations for improvements consistent with the definition of energy management practices</li> <li>A list of major energy conservation measures identified</li> <li>List of energy savings potential of the energy conservation measures identified</li> <li>Comprehensive report detailing ways to improve efficiency</li> </ul> <p>Energy assessment that meets the criteria listed above and has been conducted on or after January 1, 2008 meets the requirements in the rule.</p>

