

EMISSIONS ACTIVITY CATEGORY FORM FOR IRON AND STEEL FOUNDRIES: FUGITIVE DUST EMISSIONS

(PLEASE DO NOT COMPLETE WITHOUT READING INSTRUCTIONS)

1. Ohio EPA ID for emissions unit (if established): **F001**
2. Company ID for emissions unit: **Electric Induction Furnace No. 1**
3. Check the type(s) of processes included in the emissions unit:
 - A. Furnace Raw Material Handling and Preparation
 - B. Melting (includes charging, melting and tapping)
 - C. Holding Furnace
 - D. Hot Metal Transfer (includes transfers between melting, holding and pouring)
 - E. Mold Pouring and Cooling
 - F. Shakeout/Casting Cooling
 - G. Casting Cleaning (includes blast cleaning)
 - H. Casting Grinding/Finishing (includes grinding, welding, torching, etc.)
 - I. Sand/Additive Unloading and Storage
 - J. Core Sand Preparation
 - K. Core Making
 - L. Core/Mold Baking
 - M. Mold Sand Handling and Preparation
 - N. Mold Making
 - O. Ladle/Refractory Preheating
 - P. Core/Mold Washing and Release Agents
 - Q. Other

___ other, describe _____

- b) If fossil fuel is used for firing the preheater:
- i.) identify the maximum heat input rate (MMBTU/hour): _____
 - ii.) identify the maximum annual fuel usage (include units):

 - iii.) identify the method(s) of heat transfer employed in the preheater:
___ direct-fired ___ indirect-fired
- c) If preheater is exhausted via a stack, identify exit gas temperature at preheater (degrees Fahrenheit): _____

B. Melting Furnace (includes charging, melting and tapping):

- 1) Identify the type of furnace included in this emission unit:
- ___ Electric Arc
 - X** Electric Induction
 - ___ Cupola
 - ___ Other, describe _____
- 2) For the furnace included in this emission unit identify:
- a) Maximum metal melting design capacity (tons/hour): **1.5 tons/hr**
 - b) Maximum actual metal melting rate for furnace (tons/hour): **1.5 tons/hr**
 - c) Projected maximum annual metal production rate for furnace (tons/year):
3,120 tons/year
 - d) Process weight rate at maximum capacity (tons/hour): **1.5 tons/hr**
 - e) Composition of the materials charged to the furnace: **steel scrap, pig iron, clean scrap & discards**
 - f) Is the furnace physically or operationally united, or otherwise located in close proximity with other furnaces? **Yes**
If so, identify other furnaces: **F002**
- 3) If fossil fuel is used (e.g. afterburners): **Not Applicable**
- a) Identify the fossil fuel:
___ #2 oil ___ natural gas
___ other _____

- b) Identify the maximum heat input rate (MMBTU/hour): _____
- c) Identify the maximum annual fuel usage (include units):

- 4) If using a cupola, identify maximum sulfur content of coke (percent by weight of coke):

- 5) If inoculation or refining is performed at this emission unit: **Not Applicable**
 - a) Describe the process: _____

 - b) Identify inoculation/refining materials to be used: _____

 - c) Maximum amount of iron treated per hour (tons/hour): _____
 - d) Projected maximum annual amount of iron treated (tons/year): _____
 - e) Process weight rate at maximum capacity (tons/hour): _____

C. Holding Furnace

- 1) Maximum metal holding design capacity (tons): _____
- 2) Process weight rate at maximum capacity (tons/hour): _____
- 3) Maximum actual process weight rate (tons/year): _____
- 4) Identify the type(s) of fuel used for heating:
 - ___ electric ___ distillate oil
 - ___ natural gas ___ residual oil
 - ___ other, describe _____

- 5) If fossil fuel is used for heating the furnace:
 - a) Identify the maximum heat input rate (MMBTU/hour): _____
 - b) Identify the maximum annual fuel usage (include units):

6) If inoculation or refining is performed at this emission unit:

a) Describe the process:

b) Identify inoculation/refining materials to be used:

c) Maximum amount of iron treated (tons/hour): _____

d) Projected maximum annual amount of iron treated (tons/year): _____

e) Process weight rate at maximum capacity (tons/hour): _____

D. Hot Metal Transfer

1) Maximum actual hourly hot metal transfer rate (tons/hour): _____

2) Projected maximum annual hot metal transfer rate (tons/year): _____

3) Describe hot metal transfer operation (e.g. from/to transfer locations, method of transfer, ladle capacity):

4) If inoculation or refining is performed at this emission unit:

a) Describe the process:

b) Identify inoculation/refining materials to be used:

c) Maximum amount of iron treated per hour (tons/hour): _____

d) Projected maximum annual amount of iron treated (tons/year): _____

e) Process weight rate at maximum capacity (tons/hour): _____

E. Mold Pouring and Cooling:

- 1) Maximum design capacity metal pouring rate (tons/hour): _____
- 2) Maximum actual hourly metal pouring rate (tons/hour): _____
- 3) Projected maximum annual metal pouring rate (tons/year): _____
- 4) Process weight rate at maximum capacity (tons/hour): _____

5) If inoculation or refining is performed at this emission unit:

a) Describe the process:

b) Identify inoculation/refining materials to be used:

c) Maximum amount of iron treated per hour (tons/hour): _____

d) Projected maximum annual amount of iron treated (tons/year): _____

e) Process weight rate at maximum capacity (tons/hour): _____

F. Shakeout/Casting Cooling:

- 1) Maximum design capacity metal shakeout rate (tons/hour): _____
- 2) Maximum actual hourly metal shakeout rate (tons/hour): _____
- 3) Projected maximum annual metal shakeout rate (tons/year): _____
- 4) Process weight rate at maximum capacity (tons/hour): _____

G. Castings Cleaning (includes blast cleaning):

- 1) Maximum design capacity casting cleaning rate (tons/hour): _____
- 2) Maximum actual hourly casting cleaning rate (tons/hour): _____
- 3) Projected maximum annual casting cleaning rate (tons/year): _____

4) Process weight rate at maximum capacity (tons/hour): _____

H. Castings Grinding/Finishing (includes grinding, welders, torching, etc.):

1) Maximum actual hourly casting cleaning rate (tons/hour): _____

2) Projected maximum annual casting cleaning rate (tons/year): _____

3) Process weight rate at maximum capacity (tons/hour): _____

4) If fossil fuel is used:

a) Identify the fossil fuel:

_____ #2 oil _____ propane _____ natural gas

_____ other _____

b) Identify the maximum heat input rate (MMBTU/hour): _____

c) Identify the maximum annual fuel usage (include units):

I. Sand/Additive Unloading and Storage:

1) Maximum actual hourly sand unloading rate (tons/hour): _____

2) Maximum actual hourly additive unloading rate (tons/hour): _____

3) Projected maximum annual sand unloading rate (tons/year): _____

4) Projected maximum annual additive unloading rate (tons/year): _____

J. Core Sand Preparation (to be completed only if preparation activities are independent of coremaking operation):

1) Maximum design hourly sand preparation rate (tons/hour): _____

2) Maximum actual hourly sand preparation rate (tons/hour): _____

3) Projected maximum annual sand preparation rate (tons/year): _____

4) Process weight rate at maximum capacity (tons/hour): _____

5) If binder addition occurs at core sand preparation:

a) Describe binder system and identify composition:

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- b) Identify maximum binder added (pounds/hour): _____
 - c) Identify maximum binder usage (pounds/day): _____
 - d) Identify maximum binder usage (tons/year): _____

K. Core Making:

- 1) Maximum design capacity for core production (tons/hour): _____
- 2) Maximum actual hourly core production rate (tons/hour): _____
- 3) Projected annual core production rate (tons/year): _____
- 4) Process weight rate at maximum capacity (tons/hour): _____

5) If binder addition occurs at coremaking:

- a) Describe binder system:

- b) Identify maximum binder added (pounds/hour): _____

- c) Identify maximum binder usage (pounds/day): _____

- d) Identify maximum binder usage (tons/year): _____

- e) Provide binder composition:

6) If fossil fuel is used for curing cores:

- a) Identify the fossil fuel:

_____ #2 oil _____ natural gas

_____ other _____

- b) Identify the maximum heat input rate (MMBTU/hour): _____

- c) Identify the maximum annual fuel usage (include units):

7) If core wash is used at this emission unit, provide the following:

a) Provide wash composition:

b) Identify maximum wash used (pounds/hour): _____

c) Identify maximum wash used (pounds/day): _____

d) Identify maximum wash used (tons/year): _____

8) If core release is used at this emission unit, provide the following:

a) Provide release composition:

b) Identify maximum release used (pounds/hour): _____

c) Identify maximum release used (pounds/day): _____

d) Identify maximum release used (tons/year): _____

L. Core/Mold Baking:

1) Maximum amount of cores baked per hour (tons/hour)? _____

2) Projected maximum annual amount of cores baked (tons/year)? _____

3) If fossil fuel is used for baking the cores/molds:

a) Identify the fossil fuel:

_____ #2 oil _____ natural gas

_____ other _____

b) Identify the maximum heat input rate (MMBTU/hour): _____

c) Identify the maximum annual fuel usage (include units):

M. Mold Sand Handling and Preparation:

1) Maximum hourly mold sand production rate (tons/hour)? _____

2) Actual maximum hourly mold sand production rate (tons/hour)? _____

3) Projected annual mold sand production rate (tons/year)? _____

4) If fossil fuel is used for?:

a) Identify the fossil fuel:

_____ #2 oil _____ natural gas

_____ other _____

b) Identify the maximum heat input rate (MMBTU/hour): _____

c) Identify the maximum annual fuel usage (include units):

d) Identify the method(s) of heat transfer employed in the process:

_____ direct-fired _____ indirect-fired

N. Mold Making:

1) Maximum design capacity for mold production (tons/hour)? _____

2) Maximum actual hourly mold production rate (tons/hour)? _____

3) Projected maximum annual mold production rate (tons/year)? _____

4) If fossil fuel is used for?:

a) Identify the fossil fuel:

_____ #2 oil _____ natural gas

_____ other _____

b) Identify the maximum heat input rate (MMBTU/hour): _____

c) Identify the maximum annual fuel usage (include units):

5) If mold wash is used at this emission unit, provide the following:

a) Provide wash composition:

b) Identify maximum wash used (pounds/hour): _____

c) Identify maximum wash used (pounds/day): _____

d) Identify maximum wash used (tons/year): _____

6. If mold release is used at this emission unit, provide the following:

a) Provide release composition:

b) Identify maximum release used (pounds/hour): _____

c) Identify maximum release used (pounds/day): _____

d) Identify maximum release used (tons/year): _____

O. Ladle/Refractory Preheating:

1) If fossil fuel is used:

a) Identify the fossil fuel:

_____ #2 oil _____ natural gas

_____ other _____

b) Identify the maximum heat input rate (MMBTU/hour): _____

c) Identify the maximum annual fuel usage (include units):

P. Core Wash (to be completed only if independent of coremaking):

1) Provide the following:

a) Provide wash composition:

b) Identify maximum wash used (pounds/hour): _____

c) Identify maximum wash used (pounds/day): _____

d) Identify maximum wash used (tons/year): _____

Q. Other:

1) Describe Process:

2) Maximum design hourly process weight rate (tons/hour)? _____

3) Maximum actual hourly process weight rate (tons/hour)? _____

4) Projected maximum annual process weight rate (tons/year)? _____

5) Specify all raw materials used in the process and their respective maximum hourly usage rates?

<u>Material Name</u>	<u>Maximum Hourly Usage Rate (lbs/hour)</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

6) If fossil fuel is combusted in this process:

a) Identify the fossil fuel:

_____ #2 oil _____ natural gas

_____ other _____

b) Identify the maximum heat input rate (MMBTU/hour): _____

c.) Identify the maximum annual fuel usage (include units):
