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United States  
Environmental Protection  
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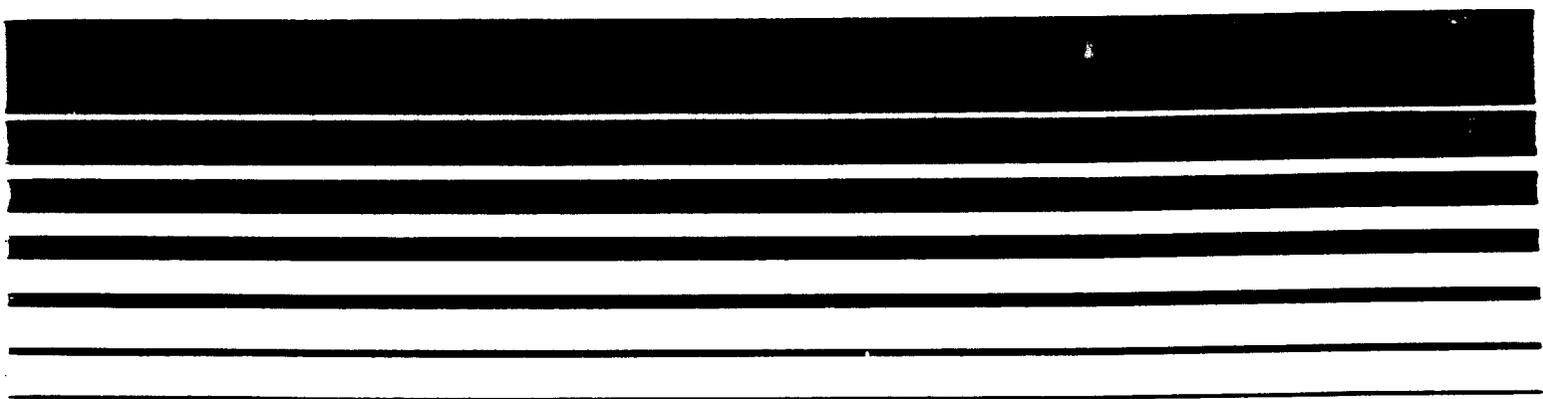
Office of Air Quality  
Planning and Standards  
Research Triangle Park NC 27711

EPA-450/4-89-022  
November 1989



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Note: This is a reference cited in AP 42, *Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at [www.epa.gov/ttn/chief/ap42/](http://www.epa.gov/ttn/chief/ap42/)  
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**PM10 EMISSION FACTOR LISTING**  
**DEVELOPED BY**  
**TECHNOLOGY TRANSFER**  
**AND**  
**AIRS SOURCE CLASSIFICATION**  
**CODES**  
**WITH DOCUMENTATION**



PM10 EMISSION FACTOR LISTING  
DEVELOPED BY  
TECHNOLOGY TRANSFER

AND  
AIRS SOURCE CLASSIFICATION  
CODES

WITH DOCUMENTATION

By

Engineering Science  
Cary, NC 27511

EPA Contract No. 68-02-4398

EPA Project Officer: Archibald A. MacQueen

Office Of Air Quality Planning And Standards  
Office Of Air And Radiation  
U. S. Environmental Protection Agency  
Research Triangle Park, NC 27711

November 1989

Page Number	SCC	Process	PM <sub>10</sub> Factor lbs/unit	Units	Reference Number
51	3-04-007-08	- Pouring and Casting	<del>5.0</del> 2.8	Tons Metal Processed	278
51	3-04-007-11	- Castings Cleaning	1.7	Tons Metal Processed	279
51	3-04-007-12	- Charge Handling	0.36	Tons Metal Processed	280
51	3-04-007-13	- Casting Cooling	<del>10.0</del> 1.4	Tons Metal Processed	281
51	3-04-007-15	- Finishing: Specify in Comments	0.0045	Tons Metal Processed	282
51	3-04-007-16	- Sand Grinding and Handling	6.0	Tons Metal Processed	283
51	3-04-007-17	- Core Ovens	0.90	Tons Metal Processed	284
53	<u>Lead Cable Coating - 3357, 3315</u> 3-04-040-01 - General		0.36	Tons Lead Processed	285

MINERAL PRODUCTS - MAJOR GROUPS 11, 12, 14, 28, 29, 32, 44

54	<u>Asphalt Roofing Manufacture - 2952</u> 3-05-001-01 - Asphalt Blowing: Saturant		6.8	Tons Asphalt Processed	286
54	3-05-001-02 - Asphalt Blowing: Coating		25.0	Tons Asphalt Processed	287
54	3-05-001-03 - Felt Saturation: Dipping Only		0.5	Tons Asphalt Shingle	288
54	3-05-001-04 - Felt Saturation: Dipping/Spraying		2.26	Tons Asphalt Shingle	289
54	<u>Asphaltic Concrete - 2951</u> 3-05-002-02 - Hot Elevators, Screens, Bins & Mixer		0.03	Tons Produced	290
54	3-05-002-03 - Storage Piles		0.12	Tons Produced	291

Page Number	SCC	Process	PM <sub>10</sub> Factor lbs/unit	Units	Reference Number
50	3-04-004-05	- Reverberatory Sweating Furnace	31	Tons Metal Charged	263
50	3-04-004-08	- Barton Process Reactor (Oxidation Kettle)	40.0	Tons Lead Oxide Produced	264
50	3-04-004-09	- Casting	0.87	Tons of Lead Cast	265
50	3-04-004-12	- Sweating Furnace: Fugitive	2.35	Tons Metal Charged	266
50	3-04-004-13	- Smelting Furnace: Fugitive	10.0	Tons Metal Charged	267
50	3-04-004-14	- Kettle Refining: Fugitive	0.002	Tons Metal Charged	268
<u>Lead Battery Manufacture - 3691</u>					
50	3-04-005-05	- Overall Process	125	10 <sup>3</sup> Batteries Produced	269
50	3-04-005-07	- Paste Mixing	3.92	10 <sup>3</sup> Batteries Produced	270
50	3-04-005-10	- Lead Reclaiming Furnace	1.67	10 <sup>3</sup> Batteries Produced	271
50	3-04-005-11	- Small Parts Casting	0.19	10 <sup>3</sup> Batteries Produced	272
50	3-04-005-12	- Formation	32.4	10 <sup>3</sup> Batteries Produced	273
<u>Steel Foundry - 3324, 3325</u>					
51	3-04-007-03	- Open Hearth Furnace with Oxygen Lance	8.5	Tons Metal Processed	274
51	3-04-007-05	- Electric Induction Furnace	0.09	Tons Metal Processed	275
51	3-04-007-06	- Sand Grinding/ Handling in Mold and Core Making	0.54	Tons Sand Processed	276
51	3-04-007-07	- Core Ovens	2.22	Tons Sand Processed	277

Page Number	SCC	Process	PM <sub>10</sub> Factor lbs/unit	Units	Reference Number
49	3-04-002-38	- Electric Induction Furnace	0.08	Tons of Charge	246
49	3-04-002-39	- Casting Operations	0.015	Tons of Casting Produced	247
<u>Gray Iron Foundries - 3321</u>					
49	3-04-003-02	- Reverberatory Furnace	1.7	Tons Metal Charged	248
49	3-04-003-03	- Electric Induction Furnace	0.86	Tons Metal Charged	249
49	3-04-003-15	- Charge Handling	0.36	Tons Metal Charged	250
49	3-04-003-20	- Pouring/Casting	2.8	Tons Metal Charged	251
49	3-04-003-25	- Casting Cooling	1.4	Tons Metal Charged	252
49	3-04-003-40	- Casting Grinding/Cleaning	1.7	Tons Metal Charged	253
49	3-04-003-50	- Sand Grinding/Handling	0.54	Tons Sand Handled	254
49	3-04-003-51	- Core Ovens	2.22	Tons Sand Handled	255
49	3-04-003-52	- Sand Grinding/Handling	6.0	Tons Metal Charged	256
49	3-04-003-53	- Core Ovens	0.90	Tons Metal Charged	257
49	3-04-003-60	- Castings Finishing	0.0045	Tons Metal Charged	258
<u>Secondary Lead Smelting - 3341, 3369</u>					
50	3-04-004-01	- Pot Furnace	0.2	Tons Metal Charged	259
50	3-04-004-02	- Reverberatory Furnace	194	Tons Metal Charged	260
50	3-04-004-03	- Blast Furnace (Cupola)	129	Tons Metal Charged	261
50	3-04-004-04	- Rotary Sweating Furnace	64	Tons Metal Charged	262

Page Number	SCC	Process	PM <sub>10</sub> Factor lbs/unit	Units	Reference Number
48	3-04-002-12	- Charge w/ Scrap Copper and Brass	64.4	Tons of Charge	230
		<u>Reverberatory Furnace</u>			
48	3-04-002-14	- Charge w/Copper	5.1	Tons of Charge	231
48	3-04-002-15	- Charge w/ Brass and Bronze	21.2	Tons of Charge	232
		<u>Rotary Furnace</u>			
48	3-04-002-17	- Charge w/ Brass and Bronze	177	Tons of Charge	233
		<u>Crucible and Pot Furnaces</u>			
48	3-04-002-19	- Charge w/ Brass and Bronze	12.4	Tons of Charge	234
		<u>Electric Arc Furnace</u>			
49	3-04-002-20	- Charge w/Copper	5.0	Tons of Charge	235
49	3-04-002-21	- Charge w/Brass and Bronze	6.5	Tons of Charge	236
		<u>Electric Induction Furnace</u>			
49	3-04-002-23	- Charge w/Copper	7.0	Tons of Charge	237
49	3-04-002-24	- Charge w/Brass and Bronze	20.0	Tons of Charge	238
		<u>Fugitive Emissions</u>			
49	3-04-002-31	- Scrap Dryer	8.2	Tons of Charge	239
49	3-04-002-32	- Wire Incinerator	8.2	Tons of Charge	240
49	3-04-002-33	- Sweating Furnace	0.45	Tons of Charge	241
49	3-04-002-34	- Cupola Furnace	2.2	Tons of Charge	242
49	3-04-002-35	- Reverberatory Furnace	3.1	Tons of Charge	243
49	3-04-002-36	- Rotary Furnace	2.6	Tons of Charge	244
49	3-04-002-37	- Crucible Furnace	0.29	Tons of Charge	245

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Page Number	SCC	Process	PM <sub>10</sub> Factor lbs/unit	Units	Reference Number
47	3-03-024-05	Primary Crushing (high moisture ore)	0.009	Tons Ore Processed	215
47	3-03-024-06	Secondary Crushing (high moisture ore)	0.02	Tons Ore Processed	216
47	3-03-024-07	Tertiary Crushing (high moisture ore)	0.02	Tons Ore Processed	217
47	3-03-024-08	Material Handling (high moisture ore)	0.005	Tons Ore Processed	218
47	3-03-024-09	Dry Grinding w/air conveying	20.2	Tons Ore Processed	219
47	3-03-024-10	Dry Grinding w/o air conveying, etc.	2.35	Tons Ore Processed	220
47	3-03-024-11	Ore Drying	12.0	Tons Ore Processed	221
47	<u>Zinc Smelting - 3339</u> 3-03-030-09 - Raw Material Handling and Transfer		3.4	Tons Processed	222
47	3-03-030-10	Sinter Breaking and Cooling	1.3	Tons Processed	223
47	3-03-030-11	Zinc Casting	2.1	Tons Processed	224
47	3-03-030-12	Raw Material Unloading	0.23	Tons Processed	225
48	<u>Secondary Copper Smelting and Alloying (Brass/Bronze Melt)</u> <u>3341, 3362</u>				
48	3-04-002-07	Scrap Dryer (Rotary)	253.0	Tons of Charge	226
48	3-04-002-08	Wire Burning (Incinerator)	253.0	Tons of Charge	227
48	3-04-002-10	Charge w/ Scrap Copper	0.00027	Tons of Charge	228
48	3-04-002-11	Charge w/ Insulated Copper Wire	211.6	Tons of Charge	229

Page Number	SCC	Process	PM <sub>10</sub> Factor lbs/unit	Units	Reference Number
45	3-03-010-25	Sinter Machine Leakage	0.67	Tons of Sinter	201
45	3-03-010-26	Sinter Dump Area	0.0008	Tons of Sinter	202
<u>Titanium Processing - 3339, 3369, 3356</u>					
46	3-03-012-02	Drying Titanium Sand Ore (Cyclone Exit)	0.43	Tons Processed	203
<u>Taconite Iron Ore Processing - 1011</u>					
46	3-03-023-04	Ore Transfer	0.085	Tons Pellets Produced	204
46	3-03-023-07	Bentonite Storage	0.03	Tons Pellets Produced	205
46	3-03-023-12	Indurating Furnace: Gas Fired	24.8	Tons Pellets Produced	206
46	3-03-023-13	Indurating Furnace: Oil Fired	24.8	Tons Pellets Produced	207
46	3-03-023-14	Indurating Furnace: Coal Fired	24.8	Tons Pellets Produced	208
46	3-03-023-21	Haul Road: Rock	6.2	Vehicle-Miles Traveled	209
46	3-03-023-22	Haul Road: Taconite	5.2	Vehicle-Miles Traveled	210
<u>Metal Mining - General Processes - 1011-1099</u>					
46	3-03-024-01	Primary Crushing (low moisture ore)	0.05	Tons Ore Processed	211
46	3-03-024-02	Secondary Crushing (low moisture ore)	0.10	Tons Ore Processed	212
46	3-03-024-03	Tertiary Crushing (low moisture ore)	0.16	Tons Ore Processed	213
46	3-03-024-04	Material Handling (low moisture ore)	0.06	Tons Ore Processed	214