

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/

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Section 2.10, Ref. #38

GENERALIZED PARTICLE SIZE DISTRIBUTIONS FOR USE
IN PREPARING SIZE SPECIFIC PARTICULATE EMISSION INVENTORIES

EPA-450/4-86-013, July 1986

Category: 8
Process: Melting, Smelting, Refining
Material: Metals, except aluminum

Source description	Cumulative percent less than or equal to stated size			Ref.
	2.5 μm	6.0 μm	10.0 μm	
Borax-fusing furnace	88	98	99	1/90
Copper-smelter	96	99	99	1/2
FE. prod.-ferrosilicon	97	99	99	1/51
Ferroalloy-EAF	83	84	94	1/280
Glass-manufacturing	91	93	95	1/219, 223, 224
Gray iron-cupola	93	98	99	1/54
Gray iron-scrap cupola	95	99	99	1/55
Iron & steel prod.-iron cupola	92	96	98	1/42
Mineral wool-cupola	67	82	91	1/123
Steel foundry-EAF	69	79	82	1/308
Steel foundry-EAF	69	84	90	1/76
Steel foundry-EAF oxygen decarb.	69	79	81	2
Steel foundry-EAF oxygen decarb.	67	76	80	2
Steel foundry-open hearth	68	86	92	1/83
Steel foundry-open hearth	80	83	85	1/233
Steel foundry-open hearth	82	88	92	1/45
Zinc-fuming furnace	63	75	82	2
Zinc-retort furnace	82	97	99	1/44
Zinc-roaster	99	99	99	1/1
Zinc-smelter-sintering	92	99	99	1/3
Zinc-vert. retort	75	77	86	1/43

TABLE 4-1. AVERAGE COLLECTION EFFICIENCIES OF VARIOUS PARTICULATE CONTROL DEVICES.^a
(percent)

Type of collector	Particle size, μm			
	Overall	0 - 2.5	2.5 - 6	6 - 10
Baffled settling chamber	--	NR	0-6	6-20
Simple (high-throughput) cyclone	80	50-70	70-83	83-90
High-efficiency and multiple cyclones	90-99	80-95	95-98	99
Electrostatic precipitator (ESP)	99.5	96.1-99.5	99.7	99.3-99.8
Packed-bed scrubber	90-95	90-99.6	98-99.6	98-99.6
Venturi scrubber	96-97	93-97	94.0-98.3	98.3-99.0
Wet-impingement scrubber	90	8-74	74-98	90-98
Fabric filter	99.3-99.9	99.3-99.9	99.7-99.9	99.8-99.9

^a The data shown represent an average of actual efficiencies. The efficiencies are representative of well-designed and well-operated control equipment. Site-specific factors (e.g., type of particulate being collected, varying pressure drops across scrubbers, maintenance of equipment) will affect the collection efficiencies. The efficiencies shown are intended to provide guidance for estimating control equipment performance when site-specific data are not available.

NR Not reported.