

**K01 - METAL MELTING & CASTING, KIRKSITE, CRUCIBLE OR POT FURNACE, UNCONTROLLED**

**CALCULATION METHODS**

Ea = Melting (i.e. ducted) + Casting (i.e. fugitive)

$$Ea = [Ua \times EFm \times (1 - em)] + [Ua \times EFc \times (1 - ec)] \times Ci$$

$$Eh = [Uh \times EFm \times (1 - em)] + [Uh \times EFc \times (1 - ec)] \times Ci$$

**NOTES:**

- Annual (Ua) and maximum hourly (Uh) throughputs must be individually reported for each material charged.
- Emission factors are in units of (lbs PM10 / ton material charged).
- Site specific emission factors should be used where available.
- Default emission factors have been developed from AP-42. These values will be updated as additional information is generated.
- Combustion related emissions of NOx, CO, SOx, PIC's, etc. are assumed negligible but may be quantified separately using fuel combustion procedures.
- No data regarding the conversion rate of chromium to hexavalent chromium exists. At this time, the Cr+6 fraction of the PM10 total Chromium emissions is assumed to be 10% for all processes.
- Maximum hourly emissions assume a single charge and pour over a 1 hour period.

POLLUTANT	District Emission Factor	REFERENCE	TEST	(UNITS)	COMMENTS
	(lbs/ton charged)	DOCUMENT	LOCATION		
NOX					
CO					
SOX					
TOG					
ROG					Assumes;
TSP	= PM10				0.1 lbs PM10 /ton charged for ducted melting emissions.
PM10	=0.1 (melt) + 0.3 (cast)	Table12.14-2 AP-42 (1/95)	None		0.3 lbs PM10 /ton charged for fugitive casting emissions.
ALUMINUM					
ARSENIC					
BARIUM	0.004000		1.00%	Weight %	PM10 Speciation based on Rohr Test Results
BERYLLIUM	0.000000				
CADMIUM	0.004000		1.00%	Weight %	
CHROMIUM HEXAVALENT	0.002800		0.70%	Weight %	Assume 10% conversion of Cr to Cr+6 in emissions
CHROMIUM NONHEXAVALENT	0.025200		6.30%	Weight %	
COPPER	0.024000		6.00%	Weight %	
LEAD	0.012000		3.00%	Weight %	
MANGANESE	0.064000		16.00%	Weight %	
NICKEL	0.000000				
THALLIUM	0.228000		57.00%	Weight %	
ZINC	0.036000		9.00%	Weight %	