

**I02-INCINERATOR-NATURAL-GAS-FIRED-AGRICULTURAL-PRODUCTS-MODULAR-EXCESS-AIR-COMBUSTORS**

**CALCULATION METHODS**

**Annual Emissions:**  $E_a = U_a \times EF$  (lbs/ton charged or lbs/mmcf natural gas)

**Hourly Emissions:**  $E_h = U_h \times EF$  (lbs/ton charged or lbs/mmcf natural gas)

**Notes:**

- \* Control efficiencies must be included in emission factors since the calculation procedure will not refer to this data.
- \* Trace toxic emission factors for Agricultural Products Incinerators are based on EPA PM Speciation Profile-42320.
- \* Emission factors for NOx, CO, SOx, TOG, and VOC are based on fuel usage and assumed to be equivalent to a small uncontrolled boiler, natural gas fired, 0.3-100 MMBtu/hr (AP-42 Section 1.4).
- \* AP-42 (7/98) factors have been converted into lbs/mmcf by assuming a natural gas BTU content of 1020 BTU/scf
- \* Use site specific VOC and particulate emissions testing for actual waste stream if available.
- \* VOC speciation is based on wood combustion (EPA VOC Speciation Profile 1167). No methane value was identified therefore Compound values are assumed to be based on lbs pollutant / lb VOC.
- \* Emission factor for TOG is the AP-42 factor for TOC
- \* Use site specific particulate emissions testing if available. The default value (6.5 lbs PM10/ton charged) is based on the emission limit of 0.3 grains/dscf exhaust.

POLLUTANT	DISTRICT EMISSION FACTORS (lbs/million ft3 fuel burned)	EPA REFERENCE DOCUMENT	EPA FACTOR	(UNITS)	COMMENTS
NOX	100	AP-42, Sect.1.4, 07/98, Table 1.4-1	100	lbs/million ft3	
CO	84	AP-42, Sect.1.4, 07/98, Table 1.4-1	21	lbs/million ft3	
SOX	0.6	AP-42, Sect.1.4, 07/98, Table 1.4-2	0.6	lbs/million ft3	
TOG	11	AP-42, Sect.1.4, 07/98, Table 1.4-2	11.0	lbs/million ft3	TOC emission factor in AP-42
VOC	5.50	AP-42, Sect.1.4, 07/98, Table 1.4-2	5.5	lbs/million ft3	
POLLUTANT	DISTRICT EMISSION FACTORS (lbs/ton charged)	EPA REFERENCE DOCUMENT	EPA FACTOR	(UNITS)	COMMENTS
TSP	6.5				Based on District emission standard of 0.3 grains / dscf exhaust (Rule 53)
PM10	6.5				Assumes all TSP is <PM10.
ACETALDEHYDE	6.89E-03	EPA VOC Speciation Profile 1167	0.24%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
ARSENIC					
BENZENE					No benzene identified in VOC profile
BERYLLIUM					

POLLUTANT	DISTRICT EMISSION FACTORS (lbs/ton charged)	EPA REFERENCE DOCUMENT	EPA FACTOR	(UNITS)	COMMENTS
CADMIUM					
CHROMIUM, NONHEXAVALENT	2.47E-04	EPA PM Speciation Profile 42320	0.00%	lbs/lb PM10	Profile is composite field burning - use waste specific data if available
CHROMIUM, HEXAVALENT	1.30E-05		0.00%		Assume 5% of Cr converted to hexavalent Cr per ARB Guidance
COPPER	2.41E-03	EPA PM Speciation Profile 42320	0.04%	lbs/lb PM10	Profile is composite field burning - use waste specific data if available
FORMALDEHYDE	1.89E-02	EPA VOC Speciation Profile 1167	0.66%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
HEXANE					
HYDROGEN CHLORIDE					
HYDROGEN FLUORIDE					
LEAD	7.80E-04	EPA PM Speciation Profile 42320	0.01%	lbs/lb PM10	Profile is composite field burning - use waste specific data if available
MANGANESE	1.02E-2	EPA PM Speciation Profile 42320	0.16%	lbs/lb PM10	Profile is composite field burning - use waste specific data if available
NAPHTHALENE	1.25E+00	EPA VOC Speciation Profile 1167	43.67%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
NICKEL					
PAH'S, UNSPECIFIED	2.17E-01	EPA VOC Speciation Profile 1167	7.55%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
* BENZO(A)ANTHRACENE					
*BENZO(B)FLUORANTHENE	3.27E-02	EPA VOC Speciation Profile 1167	1.14%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
* BENZO(K)FLUORANTHENE					
* BENZO(A)PYRENE	2.58E-02	EPA VOC Speciation Profile 1167	0.90%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
* INDENO(1,2,3-CD)PYRENE	1.89E-02	EPA VOC Speciation Profile 1167	0.66%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
* DIBENZ(A,H,)ANTHRACENE	1.15E-03	EPA VOC Speciation Profile 1167	0.04%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
PHENOL	1.96E-01	EPA VOC Speciation Profile 1167	6.84%	lbs/lb VOC	Profile is for wood combustion - use waste specific data if available
SELENIUM					
TOLUENE					
XYLENES					
ZINC	7.80E-4	EPA PM Speciation Profile 42320	0.01%	lbs/lb PM10	Profile is composite field burning - use waste specific data if available