

**E11 - ENGINE, DIESEL FIRED, >600 BHP, WITH IGNITION TIMING RETARD**

**CALCULATION METHODS**

$E_a = U_a \times EF$  (lbs/1000 gallons)

$E_h = U_h$  (gal/hr)  $\times$  (1/1000)  $\times$  EF (lbs/1000 gallons)

**NOTES:**

- Control efficiencies must be included in emission factors since the calculation procedure will not refer to this data.
- ROG factor in Section 3.4 of AP-42 (10/96) was omitted. Using EPA VOC Speciation profile 0008 to estimate weight fraction of ROG in TOC.
- Several default factors are based on an assumed diesel BTU content of 19,300 BTU/lb and density of 7.1 lbs/gal per AP-42.

POLLUTANT	District Emission Factor (lbs/1000 gal fuel burned)	EPA REFERENCE DOCUMENT	EPA FACTOR	(UNITS)	COMMENTS
NOX	260.36	AP-42 (10/96), Section 3.4, Table 3.4-1	1.9	lbs/MMBtu	lbs/kgal = lbs/MMBtu $\times$ 0.019300MMBtu/lb $\times$ 7100 lbs/kgal
CO	116.48	AP-42 (10/96), Section 3.4, Table 3.4-1	0.85	lbs/MMBtu	lbs/kgal = lbs/MMBtu $\times$ 0.019300MMBtu/lb $\times$ 7100 lbs/kgal
SOX	0.21	Title 13, CCR, Section 2281			CARB 15 ppmw diesel sulfur content standard with assume fuel density 7.1 lbs/gal
TOG	12.33	AP-42 (10/96), Section 3.4, Table 3.4-1	0.09	lbs/MMBtu	lbs/kgal = lbs/MMBtu $\times$ 0.019300MMBtu/lb $\times$ 7100 lbs/kgal
ROG	10.90	EPA VOC Speciation Profile 0008 (1/90)	88.40%	lbs ROG/lb TOC	Reference in Section 3.4 of AP-42 is missing, using EPA VOC profile
TSP	9.55	AP-42 (10/96), Section 3.4, Table 3.4-2	0.0697	lbs/MMBtu	lbs/kgal = lbs/MMBtu $\times$ 0.019300MMBtu/lb $\times$ 7100 lbs/kgal
PM10	7.85	AP-42 (10/96), Section 3.4, Table 3.4-2	0.0573	lbs/MMBtu	lbs/kgal = lbs/MMBtu $\times$ 0.019300MMBtu/lb $\times$ 7100 lbs/kgal
PM2.5	7.62	AP-42 (10/96), Section 3.4, Table 3.4-2	0.0556	lbs/MMBtu	lbs/kgal = lbs/MMBtu $\times$ 0.019300MMBtu/lb $\times$ 7100 lbs/kgal
1,3-BUTADIENE	2.17E-01				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
ACETALDEHYDE	7.83E-01				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
ACROLEIN	3.39E-02				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
ARSENIC	1.60E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
BENZENE	1.86E-01				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
BERYLLIUM					
CADMIUM	1.50E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
CARBON DIOXIDE	22,383.85	AP-42 (10/96), Section 3.4, Table 3.4-1	163.35	lbs/MMBtu	Assumes 99% conversion of carbon in fuel to to CO2
CHLOROBENZENE	2.00E-04				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
CHROMIUM HEXA VALENT	1.00E-04				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
CHROMIUM NONHEXA VALENT	5.00E-04				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
COPPER	4.10E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
DIESEL PARTICULATE	7.85	AP-42 (10/96), Section 3.4, Table 3.4-2	0.0573	lbs/MMBtu	lbs/kgal = lbs/MMBtu $\times$ 0.019300MMBtu/lb $\times$ 7100 lbs/kgal
ETHYL BENZENE	1.09E-02				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
FORMALDEHYDE	1.73E+00				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
HEXANE	2.69E-02				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)

HYDROGEN CHLORIDE	1.86E-01				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
HYDROGEN SULFIDE					
LEAD	8.30E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
MANGANESE	3.10E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
MERCURY	2.00E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
NAPHTHALENE	1.97E-02				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
NICKEL	3.90E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
PAH'S UNSPECIFIED	3.62E-02				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
- BENZO(A)ANTHRACENE					
- BENZO(B)FLUORANTHENE					
- BENZO(K)FLUORANTHENE					
- BENZO(A)PYRENE					
- INDENO(1,2,3-CD)PYRENE					
- DIBENZ(A,H,)ANTHRACEN					
PROPYLENE	4.67E-01				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
SELENIUM	2.20E-03				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
TOLUENE	1.05E-01				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
XYLENES	4.24E-02				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)
ZINC	2.24E-02				Ventura County APCD AB 2588 Combustion Emission Factors (5/2001)

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