

S99 - SHIELDED METAL ARC WELDING (SMAW), Unspecified electrode, General District-ARB-Nassco SMAW emission estimation procedure

CALCULATION METHODS (for Trace Metals with listed AP-42 emission factors)

$$E_a = U_a \times EF \text{ (lbs/lb rod)}$$

$$E_h = U_h \times EF \text{ (lbs/lb rod)}$$

CALCULATION METHODS (for Trace Metals without listed AP-42 emission factors)

$$E_a = U_a \times EF \text{ (Fume generation rate lbs fume/lb rod} \times \text{NASSCO Fume Correction Factor)} \times C_i$$

$$E_h = U_h \times EF \text{ (Fume generation rate lbs fume/lb rod} \times \text{NASSCO Fume Correction Factor)} \times C_i$$

NOTES:

- All emissions are assumed uncontrolled. Control efficiencies must be included in the release point information if applicable.
- Trace metals with specified emission factors listed by the EPA in AP-42 are quantified accordingly.
- Trace metals which are components of the welding rod but not identified by EPA will be quantified by the District's default procedures.
- Default fume generation rates (lbs fume/lb rod) are; 0.01 (GMAW, TIG, & MIG), 0.02 (SMAW & FCAW), and 0.05 (unspecified).
- Default Fume Correction Factors from NASSCO (Dr. Bell) are 0.5464 (GMAW, TIG, & MIG), 0.2865 (SMAW & FCAW), and 1.0 (unspecified)
- Default hexavalent chromium conversion rates from ARB analysis of AWS data are; 0.05 (GMAW, TIG, & MIG), 0.63 (SMAW & FCAW), and 0.10 (unspecified).
- Trace metal EPA emission factors for specific rods are from Tables 12.19-1 & 12.19-2 (1/95) of AP-42.

POLLUTANT	District Emission Factor	EPA REFERENCE	EPA	(UNITS)	COMMENTS
	(lbs/lb rod)	DOCUMENT	FACTOR		
NOX					
CO					
SOX					
TOG					
ROG					
TSP	2.00E-02				ASSUME PM10 = TSP
PM10	2.00E-02				ASSUME PM10 EMISSION RATE = FUME GENERATION RATE (FGR)
Chromium, Nonhexavalent	= 0.02 x 0.2865 x 0.37 x Ci	District / ARB / NASSCO Procedure	ND		EMISSIONS = $U_a \times FGR \times 0.2865 \times C_i \times (1 - 0.63)$
Chromium, Hexavalent	= 0.02 x 0.2865 x 0.63 x Ci	District / ARB / NASSCO Procedure	ND		EMISSIONS = $U_a \times FGR \times 0.2865 \times C_i \times 0.63$

Cobalt	= 0.02 x 0.2865 x Ci	District / ARB / NASSCO Procedure	ND		EMISSIONS = Ua x FGR x 0.2865 x Ci
Manganese	= 0.02 x 0.2865 x Ci	District / ARB / NASSCO Procedure	ND		EMISSIONS = Ua x FGR x 0.2865 x Ci
Nickel	= 0.02 x 0.2865 x Ci	District / ARB / NASSCO Procedure	ND		EMISSIONS = Ua x FGR x 0.2865 x Ci
Lead	= 0.02 x 0.2865 x Ci	District / ARB / NASSCO Procedure	ND		EMISSIONS = Ua x FGR x 0.2865 x Ci
Metals w/o Emission Factors	= 0.02 x 0.2865 x Ci	District / ARB / NASSCO procedure	ND		EMISSIONS = Ua x FGR x 0.2865 x Ci

Default Electrode Composition	Weight %	Reference
Aluminum		
Chromium, Total		NO DATA FOR UNSPECIFIED MATERIALS
Cobalt		
Copper		
Lead		
Manganese		
Nickel		
Zinc		

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