

Reports 9



WTC Occupational Exposure Limit List

Agent	Adjustment Category	Adjustment Factor	TLV	PEL	OEL	Shift Adj. OEL	Comment
Metals							
Welding Fume	II	0.67	5	5	5	3.35	(mg/m3) PEL is for respirable dust
Aluminum	I-C	1	5	5	5	5	(mg/m3) TLV for metal fume PEL for respirable fraction
Antimony	III	0.48	0.5	0.5	0.5	0.24	(mg/m3)
Arsenic	III	0.48	0.01	0.01	0.01	0.0048	(mg/m3) PEL STEL = 1.0
Beryllium	III	0.48	0.002	0.002	0.002	0.0010	(mg/m3) PEL C= 0.005; TLV STEL = 0.01; NIC = 0.0002 Inhalable
Cadmium	III	0.48	0.002	0.005	0.002	0.0010	(mg/m3) TLV for respirable; See Table Z-2 for exclusions in 29 CFR 1910.1027
Calcium	1-B	1	2	5	2	2	(mg/m3)
Chromium	III	0.48	0.5	1	0.5	0.24	(mg/m3) VI TLV = 0.05; VI PEL = C 0.1
Cobalt	III	0.48	0.02	0.1	0.02	0.010	(mg/m3)
Copper	II	0.67	0.2	0.1	0.2	0.134	(mg/m3)
Iron	III	0.48	5	10	5	2.4	(mg/m3) Iron Oxide; PEL as fume
Lead	III	0.48	0.05	0.05	0.05	0.024	(mg/m3)
Magnesium	II	0.67	10	15	10	6.7	(mg/m3) As fume
Manganese	IV	0.67	0.2	5	0.2	0.134	(mg/m3) PEL is Ceiling
Nickel	III	0.48	1.5	1	1.5	0.72	(mg/m3) TLV as inhalable
Selenium	IV	0.67	0.2	0.2	0.2	0.134	(mg/m3)
Thallium	III	0.48	0.1	0.1	0.1	0.048	(mg/m3) Skin (both)
Tin	III	0.48	2	2	2	0.96	(mg/m3)
Titanium	1-C	1-C	10	15	10	10	(mg/m3)
Vanadium	1-B	1-B	0.05	0.1	0.05	0.05	(mg/m3) TLV for fume; PEL is C for fume
Zinc	II	0.67	5	5	5	3.4	(mg/m3) Both as fume
Aldehydes							
Acetaldehyde	1-B	1	25	200	25	25	(ppm) TLV is C
Acrolein	1-B	1	0.1	0.1	0.1	0.1	(ppm) TLV is C
Benzaldehyde	-	-	2	-	2	2	(ppm) TLV = WEEL: WEEL STEL = 4
Formaldehyde	1-A	1	0.3	0.75	0.3	0.3	(ppm) TLV = C: PEL STEL = 2
n-Butyraldehyde	-	-	25	-	25	25	(ppm) TLV = WEEL
Propionaldehyde	-	-	20	-	20	20	(ppm) TLV = NIC for 2001
Valeraldehyde	-	-	50	-	50	50	(ppm)
Aromatics							

Key:

1. OEL = the lower of the TLV and PEL
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3. WEEL = Workplace Environmental Exposure Limit (AIHA)

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Benzene	III	0.48	0.5	1	0.5	0.24 (ppm)	
Ethyl Benzene	III	0.48	100	100	100	48 (ppm)	
Toluene	IV	0.67	50	200	50	34 (ppm)	
Xylene	II	0.67	100	100	100	67 (ppm)	
Acids							
Hydrobromic Acid	1-A	1	3	3	3	3 (ppm) TLV = C	
Hydrochloric Acid	1-A	1	5	7	5	5 (ppm) TLV = C; PEL = STEL	
Hydrofluoric Acid as Fluoride	1-A	1	3	3	3	3 (ppm) TLV = C	
Nitric Acid	II	0.67	2	2	2	1.3 (ppm); TLV STEL = 4	
Phosphoric Acid	1-B	1	1	1	1	1 (mg/m3) TLV STEL = 3	
Sulfuric Acid	1-B	1	1	1	1	1 (mg/m3) TLV STEL = 3	
Dust							
Cristobalite	III	0.48	0.05	0.5	0.05	0.024 (mg/m3)	
Quartz	III	0.48	0.05	0.1	0.05	0.024 (mg/m3) OSHA PEL determined by formula (0.1 assumed high % quartz)	
Respirable Dust	I-C	1	3	5	3	(mg/m3)	
Asbestos							
Asbestos	III	0.48	0.1	0.1	0.1	0.05 (f/cc) PEL STEL = 1	
PAHs							
Total PAH	III	0.48	0.2	0.2	0.2	0.10 (mg/m3) TLV for coal tar ptich volatiles compared to sum of all individual analytes, A1	
Diesel Exhaust							
Diesel Exhaust Particulates	-	-	0.02	-	0.02	0.02 (mg/m3) TLV in NIC as elemental carbon	
Mercury							
Mercury	IV	0.67	0.025	0.1	0.025	0.017 (mg/m3) PEL = C	
Sulfides							
Sulfur Dioxide	1-B	1	2	5	2	2 (ppm) TLV STEL = 5	
Hydrogen Sulfide	I-C	1	10	20	10	10 (ppm) PEL = C; TLV NIC = 5 ppm	

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Ozone							
Ozone	1-A	1	0.08	0.1	0.08	0.08	(ppm) TLV assuming Moderate Work
Total Dust							
Total Dust	1-C	1	10	15	10	10	(mg/m3)

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