

Regulatory Limits for Mn & Mn Compounds

No.	Country	Coverage	Substance	Description of Regulation	Regulatory Limit (mg/m ³)
1	Argentina	Exposure	Manganese and its inorganic compounds as Mn	Time Weighted Average (TWA)	0,2
2	Argentina	Exposure	Manganese cyclopentadienyl tricarbonyl	Time Weighted Average (TWA)	0,1
3	Australia	Exposure	Manganese cyclopentadienyl tricarbonyl	Time Weighted Average (TWA)	0,1
4	Australia	Exposure	Manganese dust, fume, and compounds as Mn	Time Weighted Average (TWA)	1,0
5	Australia	Exposure	Manganese fume as Mn	Short Term Exposure Limits (STEL)	3,0
6	Australia	Exposure	Methylcyclopentadienyl manganese tricarbonyl (as Mn)	Short Term Exposure Limits (STEL)	0,2
7	Austria	Exposure	Manganese and its inorganic compounds	Time Weighted Average (TWA)	0,5
8	Austria	Exposure	Manganese and its inorganic compounds	Short Term Exposure Limits (STEL) - 15 minutes	2,0
9	Austria	Exposure	Medium Carbon Ferro-Manganese	Time Weighted Average for 8 hours - inhalable fraction	0,5
10	Austria	Exposure	Medium Carbon Ferro-Manganese	Short Term Exposure Limits (15 min, 4 times per shift) - inhalable fraction	2,0
11	Belgium	Exposure	Cyclopentadienyl manganese tricarbonyl (as Mn)	Limit Value	0,1
12	Belgium	Exposure	Manganese and its compounds as Mn	Limit Value	0,2
13	Belgium	Exposure	Medium Carbon Ferro-Manganese	Time Weighted Average for 8 hours	0,2
14	Belgium	Exposure	Methylcyclopentadienyl manganese tricarbonyl (as Mn)	Limit Value	0,2
15	Brazil	Water	Dissolved Manganese	Launching of Efluent	1,0
16	Brazil	Exposure	Manganese and its compounds as Mn	The limit of tolerance for the operations with manganese and its compound for a variety of manufacturing processes	1,0
17	Brazil	Exposure	Manganese and its compounds as Mn	The limit of tolerance for the operations with specific refer to ores	5,0
18	Brazil	Air	Manganese and its compounds as Mn	Maximum limits for air emissions from thermal treatment of wastes	7,0
19	Brazil	Exposure	Manganese Compounds as Mn	Ceiling Limit - Occup. Safety and Health Standards for Shipyard Employment	5,0
20	Brazil	Exposure	Manganese Compounds as Mn	Ceiling Limit - Threshold Limit Values of Airborne Contaminants for Construction	5,0
21	Brazil	Exposure	Manganese Compounds as Mn	Ceiling Limit - Occupational Safety and Health Standards	5,0
22	Brazil	Exposure	Manganese fume as Mn	Ceiling Limit - Occup. Safety and Health Standards for Shipyard Employment	5,0
23	Brazil	Exposure	Manganese fume as Mn	Ceiling Limit - Threshold Limit Values of Airborne Contaminants for Construction	5,0
24	Brazil	Exposure	Manganese fume as Mn	Ceiling Limit - Occupational Safety and Health Standards	5,0
25	Brazil	Water	Total Manganese	For Class I - Fresh Water (Águas Doces)	0,1
26	Brazil	Water	Total Manganese	For Class I - Salty Water (Águas Salinas)	0,1
27	Brazil	Water	Total Manganese	For Class I - Águas Salobras	0,1
28	Brazil	Water	Total Manganese	For Class III - Fresh Water (Águas Doces)	0,5
29	Canada	Exposure	Inhaled Manganese	Human Health Risk Assessment for Inhaled Manganese	0,1
30	Canada	Drinking Wate	Manganese	Guidelines for Canadian Drinking Water Quality - Aesthetic Guidelines	0,1
31	Canada	Air	Manganese	Reference Concentration to which the population could be exposed for a lifetime without appreciable risk of adverse health effects	0,1
32	Canada	Exposure	Manganese - Elemental & inorganic compounds, as Mn	TWA	0,2
33	Canada	Exposure	Manganèse Fumées (exprimée en Mn)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	1,0

No.	Country	Coverage	Substance	Description of Regulation	Regulatory Limit (mg/m3)
34	Canada	Exposure	Manganèse Fumées (exprimée en Mn)	STEL	3,0
35	Canada	Exposure	Manganèse cyclopentadienyl tricarbonyl, as Mn	TWA	0,1
36	Canada	Exposure	Manganese cyclo-pentadienyltricarbonyl (as manganese)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	0,1
37	Canada	Exposure	Manganèse Poussières et composés (exprimée en Mn)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	5,0
38	Canada	Exposure	Manganese tetroxide (as manganese)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	1,0
39	Canada	Exposure	Manganese, and inorganic compounds (as manganese)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	0,2
40	Canada	Exposure	Manganèse, cyclopentadiényle tricarbonyle de (exprimée en Mn)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	0,1
41	Canada	Exposure	Manganèse, tétroxyde de	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	1,0
42	Canada	Exposure	Manganèse, méthylcyclopentadiényle tricarbonyle de (exprimée en Mn)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	0,2
43	China	Exposure	Manganese and inorganic compounds, as MnO2	Permissible concentration- time weighted average (40 hours/week)	0,2
44	Denmark	Exposure	Manganese fume, as Mn	TWA	0,2
45	Denmark	Exposure	Manganese, powder, dust and inorganic compounds, as Mn	TWA	0,2
46	Denmark	Exposure	Manganese cyclopentadienyl tricarbonyl, as Mn	TWA	0,1
47	Denmark	Exposure	Medium Carbon Ferro-Manganese	GV 8 hour exposure limit - respirable fraction	0,1
48	Denmark	Exposure	Medium Carbon Ferro-Manganese	GV 8 hour exposure limit - all forms	0,2
49	Finland	Exposure	Medium Carbon Ferro-Manganese	Time Weighted Average for 8 hours - all forms	0,5
50	France	Exposure	Medium Carbon Ferro-Manganese	8 hour exposure limit - all forms	1,0
51	Germany	Exposure	Manganese and its inorganic compounds (inhalable)	Maximum Workplace Concentration (MAK)	0,5
52	Germany	Exposure	Medium Carbon Ferro-Manganese	TWA 8 hour exposure limit - inhalable fraction	0,5
53	Germany	Exposure	Medium Carbon Ferro-Manganese	Short Term Exposure Limits (15 min) - inhalable fraction	2,0
54	Global	Air	Manganese	Recommended air quality guideline values - TWA- for individual substances based on effects other than cancer or odour/annoyance using an averaging time of 1 year. (annual)	0,2
55	Global	Water	Manganese	Guideline values for naturally occurring chemicals that are of health significance in drinking water	0,4
56	Global	Exposure	Manganese and its compounds	Recommended Exposure Limit in workplace air respirable Mn particles	0,3
58	Greece	Exposure	Manganese and its compounds	Total dust	0,2
59	Hungary	Exposure	Manganese and its compounds	Total dust	5,0
60	India	Drinking Water	Manganese	Requirement Desirable Limit	0,1
61	India	Exposure	Manganese	Time Weighted Average	1,0
62	India	Water	Manganese	Water discharge standards for: inland surface water, public sewers, and marine coastal areas.	2,0
63	India	Exposure	Manganese	Short Term Exposure Limits	3,0
64	Japan	Exposure	Manganese and compounds (as Mn except organic compounds)	Occupational Exposure Limit - Recommended Value	0,2
65	Japan				
66	Netherlands	Exposure	Medium Carbon Ferro-Manganese	TGG 8 hour exposure limit - all forms	1,0
67	Netherlands	Exposure	Medium Carbon Ferro-Manganese	TGG Short Term Exposure Limits (15 min)	3,0
68	Norway	Exposure	Manganese and inorganic compounds (as manganese)	TIME-WEIGHTED AVERAGE EXPOSURE VALUES (TWAEV)	0,1

No.	Country	Coverage	Substance	Description of Regulation	Regulatory Limit (mg/m3)
69	Norway	Exposure	Mangan og uorganiske manganforbinder (beregnet som Mn), inhalerbar fraksjon - Inhalable	TWA	1,0
70	Norway	Exposure	Mangansyklopentadienyltrikarbonyl (beregnet som Mn)	TWA	0,1
71	Norway	Exposure	Medium Carbon Ferro-Manganese	AN 8 hour exposure limit - all forms	2,5
72	Poland				
73	South Africa	Exposure	Manganese and its compounds	Recommended Limits - TWA	5,0
74	South Africa	Exposure	Manganese cyclopentadienyl tricarbonyl	Occupational Exposure Limit	0,1
75	South Africa	Exposure	Manganese cyclopentadienyl tricarbonyl	Recommended Limits - TWA	0,1
76	South Africa	Exposure	Manganese cyclopentadienyl tricarbonyl	Short Term Exposure Limit	0,3
77	South Africa	Exposure	Manganese cyclopentadienyl tricarbonyl	Recommended Limits - STEL	0,3
78	South Africa	Exposure	Manganese fume as Mn	Occupational Exposure Limit	1,0
79	South Africa	Exposure	Manganese fume as Mn	Recommended Limits - TWA	1,0
80	South Africa	Exposure	Manganese fume as Mn	Short Term Exposure Limit	3,0
81	South Africa	Exposure	Manganese fume as Mn	Recommended Limits - STEL	3,0
82	South Africa	Exposure	Manganese tetroxide	Occupational Exposure Limit	1,0
83	South Africa	Exposure	Manganese tetroxide	Time Weighted Average	1,0
84	South Africa	Exposure	Manganese, elemental, and inorganic compounds	Occupational Exposure Limit	1,0
85	South Africa	Exposure	Medium Carbon Ferro-Manganese	OEL-RL 8 hours; form: dust & compounds	5,0
86	Spain	Exposure	2-Metilciclopentadienyltrikarbonyl, como Mn	TWA	0,2
87	Spain	Exposure	Ciclopentadienyltrikarbonyl, como Mn	TWA	0,1
88	Spain	Exposure	Elemental y compuestos inorgánicos como Mn	TWA	0,2
89	Spain	Exposure	Medium Carbon Ferro-Manganese	VLA-ED 8 hour exposure limit	0,2
90	Sweden	Exposure	Manganese and inorganic compounds (as Mn) - respirable dust	TWA	0,1
91	Sweden	Exposure	Manganese and inorganic compounds (as Mn) - total dust	TWA	0,2
92	Sweden	Exposure	Medium Carbon Ferro-Manganese	NGV 8 hour exposure limit - respirable fraction	0,2
93	Sweden	Exposure	Medium Carbon Ferro-Manganese	NGV 8 hour exposure limit - total	0,4
94	Switzerland	Exposure	Manganese 2-methylcyclopentadienyl tricarbonyl	TWA	0,2
95	Switzerland	Exposure	Manganese and its inorganic compounds	TWA	0,5
96	Switzerland	Exposure	Manganese cyclopentadienyl tricarbonyl	TWA	0,1
97	Switzerland	Exposure	Medium Carbon Ferro-Manganese	MAK 8 hour exposure limit - inhalable fraction	0,5
98	UK	Exposure	Manganese and its inorganic compounds	TWA-8 hours	0,5
99	UK	Exposure	Medium Carbon Ferro-Manganese	Time Weighted Average for 8 hours	0,5
100	UK	Exposure	Medium Carbon Ferro-Manganese	Short Term Exposure Limits	1,5
101	USA	Exposure	Ceiling for Manganese compounds and fume as Mn	Permissible exposure limit PEL (8 hour time weighted average)	5,0
102	USA	Exposure	Manganese	Minimal Risk Level	0,0
103	USA	Air	Manganese	Reference Concentration	0,1
104	USA	Drinking Water	Manganese	National Secondary drinking water standard	0,1
105	USA	Drinking Water	Manganese	Bottled Drinking Water	0,1
106	USA	Exposure	Manganese compounds and fume (as Mn)	Recommended exposure limit (REL), 10 hour time weighted average	1,0
107	USA	Exposure	Manganese compounds and fume (as Mn)	Short Term Exposure L (STEL) - 15 min average	3,0

No.	Country	Coverage	Substance	Description of Regulation	Regulatory Limit (mg/m3)
108	USA	Exposure	Manganese compounds and fume (as Mn)	Immediately Dangerous to Life or Health Concentration (IDLH)	500,0
109	USA	Exposure	Manganese cyclopentadienyl tricarbonyl	Permissible exposure limit PEL (Time Weighted Average)	0,1
110	USA	Exposure	Manganese cyclopentadienyl tricarbonyl	Time Weighted Average	0,1
111	USA	Exposure	Manganese cyclopentadienyl tricarbonyl	Recommended exposure limit (REL), 10 hour time weighted average	0,2
112	USA	Exposure	Manganese tetroxide	Permissible exposure limit (time weighted average)	1,0
113	USA	Exposure	Manganese, Elemental and Inorganic Compounds (dust and fume) as Mn	Threshold Limit Value (TLV) - TWA	0,2