

## Oregon OSHA and Federal OSHA

In Oregon, located in the Air Contaminant Rules (Same limits apply in [Divisions 2/General Industry, 3/Construction, and 4/ Agriculture](#))

Manganese Compounds and Manganese fume (as Mn)  
Chemical Abstract Service (CAS)# 7439-96-5  
**Permissible Exposure Limit (PEL) = 5 mg/m<sup>3</sup> (Ceiling)**

NOTE: **Permissible exposure limits (PEL)** - The amount of an airborne chemical, toxic substance, or other harmful agent that must not be exceeded during any part of the workday.

An airborne chemical or toxic substance can have 3 PEL values:

- **TWA8**. This is an 8-hour, time-weighted average limit
- Short-term exposure limit (STEL). This is typically a 15-minute, time-weighted average limit.
- Ceiling limit (C). This is an instantaneous limit.

The current PEL for Manganese compounds and Manganese fume in workplaces is a “ceiling limit” of 5 milligrams of the substance (evaluated as the element Mn) per cubic meter of air, assessed either through real-time monitoring or “as a 15-minute, time-weighted average exposure.” This means that an employee’s exposure to this substance must never exceed this concentration in the workplace atmosphere at any time during the work day. OSHA PELs are legally enforceable.

## Washington OSHA (DOSH)

### [WAC 296-841-20025](#)

Manganese and compounds (as Mn)  
CAS# 7439-96-5  
**PEL = 5 mg/m<sup>3</sup> (Ceiling)**

Manganese tetroxide and fume (as Mn)  
CAS# 7439-96-5  
**PEL = 1 mg/m<sup>3</sup> (TWA8)                      3 mg/m (STEL)**

## California OSHA

### [TABLE AC-1 PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS](#)

Manganese and compounds, as Mn	<b>PEL=0.2mg/m<sup>3</sup></b>	
Manganese fume, as Mn	<b>PEL=0.2mg/m<sup>3</sup></b>	<b>CEILING = 3mg/m<sup>3</sup></b>

(Both are CAS# **7439-96-5**)

**National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limit (REL)**  
(From the on line [Pocket Guide to Air Contaminants/ 2017](#))

**Manganese (metal) as Mn**

**CAS # 7439-96-5**

**REL =**Time-Weighted Average (TWA) 1 mg/m<sup>3</sup> -- **STEL=** 3 mg/m<sup>3</sup>

For NIOSH RELs, "**TWA**" indicates a time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek. A short-term exposure limit (**STEL**) is, unless noted otherwise, a 15-minute TWA exposure that should not be exceeded at any time during a workday.

**American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV)**  
(2017 edition)

**Manganese, elemental and inorganic compounds, as Mn (2012)**

**CAS # 7439-96-5**

**TLV = TWA:** 0.02 mg/m<sup>3</sup> (Respirable fraction)  
0.1 mg/m<sup>3</sup> (Inhalable fraction)

TLV basis is based upon Central Nervous System (CNS) impairment

Cancer Notation = A4: Not classifiable as a human carcinogen.