

# Manganese(0) carbonyl: sc-235573



The Power to Question

## MATERIAL SAFETY DATA SHEET

### 1 Identification of substance:

**Product Name:** Manganese(0) carbonyl  
**Catalog Number:** sc-235573  
**Supplier:** Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800  
**Emergency:** ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### 2 Hazards identification

Classification of the substance or mixture



GHS06 Skull and crossbones

H301 Toxic if swallowed.  
H331 Toxic if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC



T; Toxic

R23/25: Toxic by inhalation and if swallowed.

Label elements

Labelling according to EU guidelines:

Code letter and hazard designation of product:  
T Toxic

Risk phrases:

23/25 Toxic by inhalation and if swallowed.

Safety phrases:

36 Wear suitable protective clothing.  
45 In case of accident or if you feel unwell, seek medical advice immediately.

Hazard description:

WHMIS classification



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	3
FIRE	3
REACTIVITY	2

Health (acute effects) = 3  
Flammability = 3  
Reactivity = 2

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

### 3 Composition/information on ingredients

Chemical characterization: Substances

(CAS#) Description:

Decacarbonyldimanganese (CAS# 10170-69-1)

Identification number(s):

EINECS Number: 233-445-6

## 4 First aid measures

### Description of first aid measures

#### General information

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

#### After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

#### After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

#### After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

#### After swallowing

Do not induce vomiting; immediately call for medical help.

Seek immediate medical advice.

## 5 Firefighting measures

### Extinguishing media

#### Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

#### Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Metal oxide fume

#### Advice for firefighters

##### Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

#### Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

#### Methods and material for containment and cleaning up:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

#### Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

### Handling

#### Precautions for safe handling

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

**Information about protection against explosions and fires:** Keep ignition sources away.

#### Conditions for safe storage, including any incompatibilities

##### Storage

**Requirements to be met by storerooms and receptacles:** No special requirements.

#### Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from air.

#### Further information about storage conditions:

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

This product is air sensitive. Store at 4° C.

## 8 Exposure controls/personal protection

### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters**

Components with limit values that require monitoring at the workplace:

Manganese, elemental & inorganic compounds (as Mn)	mg/m <sup>3</sup>
ACGIH TLV	0.2
Austria MAK	5
Belgium TWA	1; 3-STEL (fume)
Denmark TWA	2.5
Finland TWA	0.5
France VME	1 (fume)
Germany MAK	0.55
Japan OEL	0.3 (respirable dust)
Korea TLV	0.2
Netherlands MAC-TGG	1; 3-MAC-K
Norway TWA	1
Russia	0.2-STEL (fume)
Sweden NGV	1; 2.5-TGV (resp. dust)
	2.5; 5-TGV (total dust)
Switzerland MAK-W	5
	1 (fume)
United Kingdom TWA	5
	1; 3-STEL (fume)
USA PEL	5-Ceiling (fume)
<b>Additional information:</b> No data	

**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Protection of hands:** Impervious gloves

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

<b>Information on basic physical and chemical properties</b>	
<b>General Information</b>	
<b>Appearance:</b>	
Form:	Crystalline
Formula:	C10Mn2O10
Weight:	389.98
<b>pH-value:</b>	Not applicable.
<b>Change in condition</b>	
Melting point/Melting range:	152-154°C (306-309 °F)
Boiling point/Boiling range:	80°C (176 °F) (1mm Hg, subl)
Sublimation temperature / start:	80°C (176 °F) (0.1mm Hg)
<b>Flash point:</b>	Not applicable
<b>Flammability (solid, gaseous)</b>	Not determined.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined.
<b>Danger of explosion:</b>	Product does not present an explosion hazard.
<b>Explosion limits:</b>	
Lower:	Not determined
Upper:	Not determined
<b>Vapor pressure:</b>	Not applicable.
<b>Density at 20°C (68 °F):</b>	1.75 g/cm <sup>3</sup> (14.604 lbs/gal)
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Solubility in / Miscibility with</b>	
Water:	Insoluble
<b>Segregation coefficient (n-octanol/water):</b> Not determined.	
<b>Viscosity:</b>	
dynamic:	Not applicable.
kinematic:	Not applicable.
<b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

### Reactivity

#### Chemical stability

##### Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

##### Possibility of hazardous reactions

Toxic fumes may be released if heated above the decomposition point

##### Incompatible materials:

Oxidizing agents

Air

##### Hazardous decomposition products:

Metal oxide fume

Carbon monoxide and carbon dioxide

## 11 Toxicological information

### Information on toxicological effects

#### Acute toxicity:

##### Primary irritant effect:

on the skin: May cause irritation

on the eye: May cause irritation

Sensitization: No sensitizing effects known.

##### Subacute to chronic toxicity:

Chronic exposure to manganese may cause impairment to the central nervous system. Symptoms include sluggishness, sleepiness, muscle weakness, loss of facial muscle control, edema, emotional disturbances, spastic gait and falling. Chronic manganese poisoning may develop after as little as three months of heavy exposure but usually cases develop after one to three years of exposure,

Carbonyl compounds are toxic due to decomposition yielding carbon monoxide. Symptoms include asphyxia, headache, mental confusion, dizziness, impairment of vision and hearing, and fainting. High exposures can result in unconsciousness and death due to the inability of hemoglobin to carry oxygen to the tissues.

##### Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

## 12 Ecological information

### Toxicity

Acquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

#### Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

#### Additional ecological information:

##### General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

#### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

## 13 Disposal considerations

### Waste treatment methods

Recommendation Consult state, local or national regulations to ensure proper disposal.

#### Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

## 14 Transport information

### DOT regulations:



Hazard class:

6.1

Identification number:

UN3466

Packing group:

III

Proper shipping name (technical name): METAL CARBONYLS, SOLID, N.O.S.  
(Decacarbonyldimanganese)

Label

6.1

Land transport ADR/RID (cross-border)



ADR/RID class: 6.1 (T3) Toxic substances  
Danger code (Kemler): 60  
UN-Number: 3466  
Packaging group: III  
UN proper shipping name: 3466 METAL CARBONYLS, SOLID, N.O.S.  
(Decacarbonyldimanganese)

Maritime transport IMDG:



IMDG Class: 6.1  
UN Number: 3466  
Label: 6.1  
Packaging group: III  
Marine pollutant: No  
Proper shipping name: METAL CARBONYLS, SOLID, N.O.S.  
(Decacarbonyldimanganese)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 6.1  
UN/ID Number: 3466  
Label: 6.1  
Packaging group: III  
Proper shipping name: METAL CARBONYLS, SOLID, N.O.S.  
(Decacarbonyldimanganese)

UN "Model Regulation": UN3466, METAL CARBONYLS, SOLID, N.O.S., 6.1, III  
Special precautions for user Warning: Toxic substances  
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

## 15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Product related hazard informations:

Hazard symbols:

T Toxic

Risk phrases:

23/25 Toxic by inhalation and if swallowed.

Safety phrases:

36 Wear suitable protective clothing.

45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use:

For use only by technically qualified individuals.

This product contains manganese and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

## 16 Other information:

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.