Manganese tricarbonyl[(1,2,3,4,5-h)-1-methyl-2,4-cyclopentadien-1-yl] (CAS 12108-13-3) MSDS

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name: (Methylcyclopentadienyl)manganese(I) tricarbonyl

Product Number: 317632

Brand: 12108-13-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Acute toxicity, Oral (Category 2)
Acute toxicity, Inhalation (Category 1)
Acute toxicity, Dermal (Category 3)
Carcinogenicity (Category 2)

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Toxic by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]

Pictogram

Signal word: Danger

Hazard statement(s)
H300 Fatal if swallowed.
H311 Toxic in contact with skin.
H330 Fatal if inhaled.
H351 Suspected of causing cancer.

Precautionary statement(s)

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash hands thoroughly after handling.
P280 Wear protective gloves/ protective clothing.
P284 Wear respiratory protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P310 Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard Statements: none


Hazard symbol(s)

R-phrase(s)
R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R40 Limited evidence of a carcinogenic effect.

S-phrase(s)
S23 Do not breathe vapour.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substances
Formula: C9H7MnO3
Molecular Weight: 218.09 g/mol

Component

(Methylcyclopentadienyl)manganese(I) tricarbonyl
CAS-No.: 12108-13-3
EC-No.: 235-166-5

4. FIRST AID MEASURES
4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

4.3 Indication of any immediate medical attention and special treatment needed
All data available

5. FIREFIGHTING MEASURES
5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Manganese/manganese oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES
6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE
7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end uses
no data available
8. **EXPOSURE CONTROLS/PERSOANL PROTECTION**

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

**Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**Personal protective equipment**

**Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. **PHYSICAL AND CHEMICAL PROPERTIES**

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>a)</th>
<th>Appearance</th>
<th>Form: liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Colour: yellow-orange</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td>Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>c)</td>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>d)</td>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>e)</td>
<td>Melting point/freezing point</td>
<td>Melting point/range: -1 °C - lit.</td>
</tr>
<tr>
<td>f)</td>
<td>Initial boiling point and boiling range</td>
<td>232 - 233 °C - lit.</td>
</tr>
<tr>
<td>g)</td>
<td>Flash point</td>
<td>96 °C - closed cup</td>
</tr>
<tr>
<td>h)</td>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>i)</td>
<td>Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>j)</td>
<td>Upper/lower flammability or explosive limits</td>
<td>no data available</td>
</tr>
<tr>
<td>k)</td>
<td>Vapour pressure</td>
<td>0,07 hPa at 20 °C</td>
</tr>
<tr>
<td>l)</td>
<td>Vapour density</td>
<td>7,53 - (Air = 1.0)</td>
</tr>
<tr>
<td>m)</td>
<td>Relative density</td>
<td>1,38 g/cm3 at 25 °C</td>
</tr>
<tr>
<td>n)</td>
<td>Water solubility</td>
<td>no data available</td>
</tr>
<tr>
<td>o)</td>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>p)</td>
<td>Autoignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>q)</td>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>r)</td>
<td>Viscosity</td>
<td>no data available</td>
</tr>
<tr>
<td>s)</td>
<td>Explosive properties</td>
<td>no data available</td>
</tr>
<tr>
<td>t)</td>
<td>Oxidizing properties</td>
<td>no data available</td>
</tr>
</tbody>
</table>

9.2 **Other safety information**

no data available
10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - 8 mg/kg
LC50 Inhalation - rat - 4 h - 76 mg/m3

Skin corrosion/irritation
Skin - rabbit -

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
Limited evidence of carcinogenicity in animal studies

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Potential health effects

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>May be fatal if inhaled. May cause respiratory tract irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>May be fatal if swallowed.</td>
</tr>
<tr>
<td>Skin</td>
<td>Toxic if absorbed through skin. May cause skin irritation.</td>
</tr>
<tr>
<td>Eyes</td>
<td>May cause eye irritation.</td>
</tr>
</tbody>
</table>

Signs and Symptoms of Exposure

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

Additional Information

RTECS: OP1450000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available
12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 3281
IMDG: 3281
IATA: 3281

14.2 UN proper shipping name
ADR/RID: METAL CARBONYLS, LIQUID, N.O.S. ((Methylcyclopentadienyl)manganese(I) tricarbonyl)
IMDG: METAL CARBONYLS, LIQUID, N.O.S. ((Methylcyclopentadienyl)manganese(I) tricarbonyl)
IATA: Metal carbonyls, liquid, n.o.s. ((Methylcyclopentadienyl)manganese(I) tricarbonyl)

14.3 Transport hazard class(es)
ADR/RID: 6.1
IMDG: 6.1
IATA: 6.1

14.4 Packaging group
ADR/RID: II
IMDG: II
IATA: II

14.5 Environmental hazards
ADR/RID: no
IMDG Marine pollutant: no
IATA: no

14.6 Special precautions for user
no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.