

## SAFETY DATA SHEET

Revision Date 14-Feb-2020

Revision Number 2

### 1. Identification

**Product Name**                      **Methylcyclopentadienylmanganese tricarbonyl**

**Cat No. :**                              **47125**

**CAS-No**                                12108-13-3  
**Synonyms**                              Tricarbonyl (methylcyclopentadienyl)-manganese; tricarbonyl[(1,2,3,4,5-eta)-1-meth; MMT

**Recommended Use**                      Laboratory chemicals.  
**Uses advised against**                      Food, drug, pesticide or biocidal product use.  
**Details of the supplier of the safety data sheet**

**Company**

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
**Email:** tech@alfa.com  
www.alfa.com

**Emergency Telephone Number**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660.  
After normal business hours, call Carechem 24 at (866) 928-0789.

### 2. Hazard(s) identification

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                    |            |
|------------------------------------|------------|
| Acute oral toxicity                | Category 2 |
| Acute dermal toxicity              | Category 3 |
| Acute Inhalation Toxicity - Vapors | Category 2 |

**Label Elements****Signal Word**

Danger

**Hazard Statements**

Fatal if swallowed  
Toxic in contact with skin  
Fatal if inhaled

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing/eye protection/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Immediately call a POISON CENTER or doctor/physician

**Skin**

IF ON SKIN: Wash with plenty of soap and water  
Call a POISON CENTER or doctor/physician if you feel unwell  
Remove/Take off immediately all contaminated clothing  
Wash contaminated clothing before reuse

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
Rinse mouth

**Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

| Component                                     | CAS-No     | Weight % |
|-----------------------------------------------|------------|----------|
| Methyl cyclopentadienyl manganese tricarbonyl | 12108-13-3 | 97       |

### 4. First-aid measures

|                                            |                                                                                                                                                |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>                         | Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.              |
| <b>Skin Contact</b>                        | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. |
| <b>Inhalation</b>                          | Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required.   |
| <b>Ingestion</b>                           | Call a physician immediately. Clean mouth with water.                                                                                          |
| <b>Most important symptoms and effects</b> | Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting                                   |
| <b>Notes to Physician</b>                  | Treat symptomatically                                                                                                                          |

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point** 96 °C / 204.8 °F

**Method -** No information available

**Autoignition Temperature** No information available

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**

Flammable.

**Hazardous Combustion Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Heavy metal oxides.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

**Health**  
4

**Flammability**  
0

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment as required.

**Environmental Precautions** See Section 12 for additional Ecological Information. Should not be released into the environment. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

**Methods for Containment and Clean Up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Do not let this chemical enter the environment.

## 7. Handling and storage

**Handling** Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Handle product only in closed system or provide appropriate exhaust ventilation.

**Storage** Keep in a dry, cool and well-ventilated place. Refer product specification and/or product label for specific storage temperature requirement. Keep container tightly closed. Keep away from heat, sparks and flame.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

| Component                                     | ACGIH TLV                          | OSHA PEL                                                                                                               | NIOSH IDLH                                                                                                      | Mexico OEL (TWA)           |
|-----------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------|
| Methyl cyclopentadienyl manganese tricarbonyl | TWA: 0.2 mg/m <sup>3</sup><br>Skin | (Vacated) TWA: 0.2 mg/m <sup>3</sup><br>Skin<br>(Vacated) Ceiling: 5 mg/m <sup>3</sup><br>Ceiling: 5 mg/m <sup>3</sup> | IDLH: 500 mg/m <sup>3</sup><br>TWA: 0.2 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup><br>STEL: 3 mg/m <sup>3</sup> | TWA: 0.2 mg/m <sup>3</sup> |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures** Ensure adequate ventilation, especially in confined areas.

**Personal Protective Equipment**

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

|                                               |                                                 |
|-----------------------------------------------|-------------------------------------------------|
| <b>Physical State</b>                         | Liquid                                          |
| <b>Appearance</b>                             | Light yellow                                    |
| <b>Odor</b>                                   | No information available                        |
| <b>Odor Threshold</b>                         | No information available                        |
| <b>pH</b>                                     | No information available                        |
| <b>Melting Point/Range</b>                    | -1 °C / 30.2 °F                                 |
| <b>Boiling Point/Range</b>                    | 232 - 233 °C / 449.6 - 451.4 °F @ 760 mmHg      |
| <b>Flash Point</b>                            | 96 °C / 204.8 °F                                |
| <b>Evaporation Rate</b>                       | No information available                        |
| <b>Flammability (solid,gas)</b>               | Not applicable                                  |
| <b>Flammability or explosive limits</b>       |                                                 |
| <b>Upper</b>                                  | No data available                               |
| <b>Lower</b>                                  | No data available                               |
| <b>Vapor Pressure</b>                         | 0.05 mmHg @ 20 °C                               |
| <b>Vapor Density</b>                          | > 1.0                                           |
| <b>Specific Gravity</b>                       | 1.380                                           |
| <b>Solubility</b>                             | No information available                        |
| <b>Partition coefficient; n-octanol/water</b> | No data available                               |
| <b>Autoignition Temperature</b>               | No information available                        |
| <b>Decomposition Temperature</b>              | No information available                        |
| <b>Viscosity</b>                              | No information available                        |
| <b>Molecular Formula</b>                      | C <sub>9</sub> H <sub>7</sub> Mn O <sub>3</sub> |
| <b>Molecular Weight</b>                       | 218.1                                           |

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions.

**Conditions to Avoid** Incompatible products.

**Incompatible Materials** Halogens

**Hazardous Decomposition Products** Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Heavy metal oxides

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

### Acute Toxicity

#### Product Information Component Information

| Component                                     | LD50 Oral               | LD50 Dermal                 | LC50 Inhalation               |
|-----------------------------------------------|-------------------------|-----------------------------|-------------------------------|
| Methyl cyclopentadienyl manganese tricarbonyl | LD50 = 58 mg/kg ( Rat ) | LD50 = 140 mg/kg ( Rabbit ) | LC50 = 0.076 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component                                     | CAS-No     | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------------------------------------------|------------|------------|------------|------------|------------|------------|
| Methyl cyclopentadienyl manganese tricarbonyl | 12108-13-3 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

| Component                                     | Freshwater Algae | Freshwater Fish                                      | Microtox   | Water Flea |
|-----------------------------------------------|------------------|------------------------------------------------------|------------|------------|
| Methyl cyclopentadienyl manganese tricarbonyl | Not listed       | LC50: = 0.21 mg/L, 96h semi-static (Cyprinus carpio) | Not listed | Not listed |

**Persistence and Degradability** based on information available. May persist

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

UN-No UN3281  
 Proper Shipping Name METAL CARBONYLS, LIQUID, N.O.S.  
 Technical Name Methyl cyclopentadienyl manganese tricarbonyl  
 Hazard Class 6.1  
 Packing Group II

#### TDG

UN-No UN3281  
 Proper Shipping Name METAL CARBONYLS, LIQUID, N.O.S.  
 Hazard Class 6.1  
 Packing Group II

#### IATA

UN-No UN3281  
 Proper Shipping Name METAL CARBONYLS, LIQUID, N.O.S.  
 Hazard Class 6.1  
 Packing Group II

#### IMDG/IMO

UN-No UN3281  
 Proper Shipping Name METAL CARBONYLS, LIQUID, N.O.S.  
 Hazard Class 6.1  
 Packing Group II

### 15. Regulatory information

#### United States of America Inventory

| Component                                     | CAS-No     | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags |
|-----------------------------------------------|------------|------|-----------------------------------------------|-----------------------------|
| Methyl cyclopentadienyl manganese tricarbonyl | 12108-13-3 | X    | ACTIVE                                        | -                           |

#### **Legend:**

**TSCA** - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export Not applicable

#### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

| Component                                     | CAS-No     | DSL | NDL | EINECS    | PICCS | ENCS | AICS | IECSC | KECL     |
|-----------------------------------------------|------------|-----|-----|-----------|-------|------|------|-------|----------|
| Methyl cyclopentadienyl manganese tricarbonyl | 12108-13-3 | X   | -   | 235-166-5 | X     | X    | X    | X     | KE-34053 |

#### U.S. Federal Regulations

##### **SARA 313**

| Component                                     | CAS-No     | Weight % | SARA 313 - Threshold Values % |
|-----------------------------------------------|------------|----------|-------------------------------|
| Methyl cyclopentadienyl manganese tricarbonyl | 12108-13-3 | 97       | 1.0                           |

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

**Clean Air Act**

| Component                                     | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-----------------------------------------------|-----------|-------------------------|-------------------------|
| Methyl cyclopentadienyl manganese tricarbonyl | X         |                         | -                       |

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component                                     | Hazardous Substances RQs | CERCLA EHS RQs |
|-----------------------------------------------|--------------------------|----------------|
| Methyl cyclopentadienyl manganese tricarbonyl | -                        | 100 lb         |

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component                                     | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-----------------------------------------------|---------------|------------|--------------|----------|--------------|
| Methyl cyclopentadienyl manganese tricarbonyl | X             | X          | X            | X        | X            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

## 16. Other information

**Prepared By** Health, Safety and Environmental Department  
Email: tech@alfa.com  
www.alfa.com

**Revision Date** 14-Feb-2020

**Print Date** 14-Feb-2020

**Revision Summary** SDS authoring systems update, replaces ChemGes SDS No. 12108-13-3/2.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**