

Document owner: **MMC Laboratory**

Effective Date:
02 May 2017

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Revision No:
1

Trade Name: Manganese Metal

This substance is not classified as hazardous under the CLP Regulation (1272/2008/EC) or as dangerous under the Dangerous Substances Directive (67/548/EEC), is not persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) as defined in Annex XIII of the REACH Regulation, and is not included in the ECHA candidate list of substances of very high concern. Therefore provision of a Safety Data Sheet (SDS) is not mandatory. This Substance Information Sheet (SIS) is a voluntary presentation of certain information that may assist the user in the handling of the substance.

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

1.1. Substance Identification:

Name: Manganese

Other names:

Manganese metal, Mn Electrolytic Flake, Mn unstabilised powder, Mn stabilised powder, Mn99.9, Mn Briquettes
EINECS: 231-105-1

CAS: 7439-96-5

REACH Reference Number: Registration number UF957590-25

1.2. Use of the Substance/Preparation:

- PC 7: Base metals and alloys
- PC 19: Intermediate
- PC 20: Products such as pH-regulators, flocculants, precipitants, neutralisation agents
- PC 38: Welding and soldering products (with flux coatings or flux cores.), flux products
- PC 39: Cosmetics, personal care products
- PC 24: Lubricants, greases, release products
- PC 29: Pharmaceuticals

- SU 8: Manufacture of bulk, large scale chemicals (including petroleum products)
- SU 9: Manufacture of fine chemicals
- SU 10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- SU 13: Manufacture of other non-metallic mineral products, e.g. plasters, cement
- SU 14: Manufacture of basic metals, including alloys
- SU 15: Manufacture of fabricated metal products, except machinery and equipment
- SU 16: Manufacture of computer, electronic and optical products, electrical equipment
- SU 17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment.

1.3. Company/Undertaking identification:

(on behalf of Manganese Metal Company — MMC (Pty) Ltd, South Africa)

Company: ECP_AG

Address: Gerberweg 1, Vaduz, Liechtenstein, FL-9490

Tel Number: 0041527428389

E-mail Address: tw@trueb-chenie.com

1.4. Emergency telephone number(s)

Tel number (EU): 0041527428389

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2. HAZARDS IDENTIFICATION

2.1. Classification of the substance/Preparation:

Not Classified/unclassified according to DSD

Not Classified/unclassified according to CLP

2.2. Labelling/Pictograms:

Not applicable as the substance is not classified

2.3. Other Hazards:

Dustiness/fine powder may cause a fire/explosion under certain conditions e.g. naked flames, a spark or prolonged friction.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1. Substance(s)

Manganese metal

Chemical name	EC No.	CAS No.	Molecular formula	Atomic weight	REACH No.	CLP Classification	DSD Classification
Manganese	231-105-1	7439-96-5	Mn	54.9	UF957590-25	Not classified	Not classified

4. FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact: irrigate and rinse with diphoterine, or a 1% sterile solution of sodium chloride or clean water for at least 15 minutes. Seek medical attention if irritation persists.

Skin Contact: Rinse thoroughly with water and mild detergent. Seek medical attention if irritation persists.

Inhalation: Remove to fresh air. Gargle and rinse the throat with water and clean the nasal cavity. If difficulty with breathing is experienced give oxygen and seek medical attention.

Ingestion: Dilute by drinking large quantities of water or milk. Seek medical attention.

5. FIREFIGHTING MEASURES

5.1. Suitable extinguishing media:

Class D dry powder (suitable for metal fires) e.g. melting flux, sand or talc (Magnesium trisilicate). Do not use water, foam, halogenated gas or carbon dioxide. Material may also be isolated and allowed to burn itself out.

5.2. Special exposure hazards arising from substance or preparation:

Manganese metal or oxide fumes.

5.3. Special protective equipment for fire-fighters:

Use suitable respiratory protection against metal and metal-oxide fumes. A full-face respirator with air supply may be required. Heat-resistant clothing suitable for protection from burning metal may also be needed.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions:

Suitable personal protective clothing should be worn. Refer to section 8.3 below.

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6.2. Environmental precautions:

Spilled Manganese particulate should be promptly collected using natural fibre brushes and non-sparking or nonstatic-generating equipment. Dry clean material can be re-used. Wet or otherwise contaminated material should be placed in a well-ventilated steel container and stored in a safe outside area physically separated from other activities. Wet Manganese particulate will slowly oxidise, generate heat and liberate hydrogen gas, which may auto-ignite if ventilation is inadequate. Gross spillage into a waterway may temporarily deplete the dissolved oxygen content of the water and cause silting.

7. HANDLING AND STORAGE

7.1. Handling:

Use in a well-ventilated area to keep dust below exposure limits. Do not allow dust to accumulate on equipment or building surfaces.

7.2. Storage:

Keep in a closed, dry container. Store away from extreme heat, moisture and incompatible materials.

7.3. Specific uses(s):

See section 1.2 above.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1. Exposure limit values:

Country of Origin (in the EU)	Occupational Exposure Limit Value (in mg Mn/m ³)	Recommended Monitoring Procedure
(Liechtenstein, on behalf of MMC (Pty) Ltd)	EU: proposed OEL for Manganese of 0.2 mg Mn/m ³ inhalable dust and 0.05 mg Mn/m ³ respirable dust.	none recommended

8.2. Exposure controls:

Manganese metal is not classified according to directive 67/584/EEC or regulation (EC) No 1272/2008. No legally binding risk management measures have been identified as required.

8.3. Occupational exposure controls:

The EU SCOEL issued a proposed OEL for Manganese of 0.2 mg Mn/m³ inhalable dust and 0.05 mg Mn/m³ respirable dust. For good industrial hygiene purposes, ensure containment of gaseous/dusty material. Use local exhaust ventilation (LEV) and respiratory protective equipment (RPE) for all processes especially those resulting in dust generation. Workers are encouraged to use personal protection equipment such as eye/face protection (safety glasses, goggles etc); Skin protection (gloves, overalls) and respiratory protection in extremely dusty areas/tasks.

8.4. Environmental exposure controls:

Encourage the re-use of uncontaminated material. Use LEVs to prevent or reduce air emissions. Emissions trapped from LEV should be re-used where possible. Dilute liquid or slurried waste can be treated in on-site or offsite waste water treatment plants. Any resulting solid waste which cannot be re-used should be disposed of according to the local laws and regulations.

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9. PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance:	Silver-grey metallic solid. Stabilised powder may have a brown, golden or blue coloration due to a thin oxide surface film.
Odour:	Odourless

Health, safety & environmental information

pH	Not applicable.
Boiling point	2061 C
Melting point (Mpt) /Freezing point	1246 C
Flash Point	Not required for inorganic substances.
Flammability of solids	Not spontaneously flammable. Not classified as a flammable solid in CPL or GHS documentation.
Explosive properties	Not spontaneously explosive.
Oxidizing properties	Not oxidizing.
Vapour pressure	1 Pa @ 955 C
Relative density	7.2
Water Solubility	nil
Partition Coefficient	Not applicable for inorganic substances.
Viscosity	Testing not technically possible.

Other Information

Dissociation constant	Cannot dissociate due to lack of relevant functional groups: pure element.
Surface tension	Substance is not surface active.
Stability in organic solvents and identity of relevant degradation groups	Not applicable for this substance/not soluble in common organic solvents.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid:

Manganese metal is stable at normal ambient temperature and pressure. During storage and handling avoid generating very fine particles as this could react in the presence of air/oxygen and a source of ignition — causing a fire. Keep dry.

10.2. Materials to avoid:

Strong oxidising agents. Acids and alkalis. Moisture.

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10.3. Hazardous decomposition products:

Hydrogen gas is slowly generated from contact with water. Extreme heat may generate hazardous metallic fumes.

11. TOXICOLOGICAL INFORMATION

11.1. Toxicokinetics, metabolism and distribution:

No concerns from absorption, metabolism, distribution and excretion.

11.2. Acute effects:

Acute OECD studies conducted to GLP principles indicates no concerns.

11.3. Sensitisation:

OECD study conducted to GLP principles indicates no concerns.

11.4. Chronic health effects:

No concerns based on available literature.

11.5. Carcinogenicity, mutagenicity and toxic to reproduction (CMR) effects:

No concerns based on available literature.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity:

Available literature and OECD studies conducted to GLP principles indicates no concerns.

12.2. Mobility:

No concerns.

12.3. Persistence and degradability:

Not applicable to inorganic substances.

12.4. Bioaccumulation potential:

No concerns based on hazard assessment.

12.5. PBT assessment:

No concerns based on hazard assessment.

13. DISPOSAL CONSIDERATIONS

No specific considerations but recycling of waste containing manganese metal is encouraged if possible; if not possible dispose of waste according to the local laws and regulations. Also refer to section 8.4 above.

14. TRANSPORT INFORMATION

14.1. UN Number:

Not regulated as a dangerous good for transport

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14.2. Transport hazard class:

Not applicable: not regulated under ADR, IATA or IMDG as dangerous.

14.3. Shipping class:

Not applicable: not regulated under ADR, IATA or IMDG as dangerous.

14.4. Proper shipping name:

Not applicable: not regulated under ADR, IATA or IMDG as dangerous.

14.5. Packaging group:

Not applicable

15. REGULATORY INFORMATION

15.1. Chemical safety assessment:

Not applicable as the substance is not classified

15.2. Labeling according to Directive 67/548/EEC and 1999/45/EC:

Not applicable as manganese metal is not classified

15.3. National laws/National measures:

No substance-specific measures as manganese metal is not classified.

16. OTHER INFORMATION

16.1. Abbreviations:

ADR: Accord European Relatif au Transport International des Marchandises Dangereuses par Route (European Agreement Concerning the International Carriage of Dangerous Goods by Road; EU).

CAS: Chemical Abstracts Service.

CLP: Classification, Labelling and Packaging (of chemicals).

DSD: Duales System Deutschland (for packaging and recycling).

ECHA: European Chemical Agency.

EU: European Union.

EU SCOEL: European Union Scientific Committee on Occupational Exposure Limits.

GHS: (The) Globally Harmonized System (of Classification and Labelling of Chemicals).

GLP: Good Laboratory Practice.

IATA: International Air Transport Association.

IMDG: International Maritime Dangerous Goods (United Nations).

OECD: Organisation for Economic Co-operation and Development.

OEL: Occupational Exposure Limits.

PBT: Persistent, bioaccumulative, toxic (chemical).

REACH: Registration, Evaluation and Authorization of Chemicals.

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17. AMENDMENT HISTORY

The following information documents the last changes

Date	Revised by	Changes
27 August 2017	S Kampers Parsley Studios	Changed MMC logo and the document format, no changes to the actual content of the document was made.