

MANGANESE CARBONATE

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

MANGANESE CARBONATE
Rhodochrosite (mineral form); Manganese(II) Carbonate
CAS: 598-62-9

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Raw material for manganese chemicals (manganese oxide, manganese sulphate); trace-element micronutrient component for fertiliser and animal-feed formulations; pigment and ceramic-frit raw material; catalyst precursor. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
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1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), based on well-established, publicly documented data for this CAS number.

Acute Tox. 4	Acute oral toxicity, Category 4, H302
STOT RE 2	Specific target organ toxicity, repeated exposure, Category 2 (nervous system), H373

2.2 GHS label elements, including precautionary statements:

GHS: Warning

Hazard statements:

Acute Tox. 4: H302 – Harmful if swallowed.
STOT RE 2: H373 – May cause damage to organs (nervous system) through prolonged or repeated exposure.

Precautionary statements:

P260: Do not breathe dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/eye protection.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P314: Get medical advice/attention if you feel unwell.
P330: Rinse mouth.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local regulations.

2.3 Other hazards which do not result in classification:

No other hazards which do not result in classification are known at this time.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Manganese(II) Carbonate
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 598-62-9	MANGANESE CARBONATE — Manganese Carbonate – Acute Tox. 4: H302; STOT RE 2: H373 – Warning	Technical grade, min. 98% w/w MnCO3

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

Request medical assistance immediately, showing the SDS of this product, if symptoms persist or if there is any doubt.

By inhalation:

Remove the person affected from the area of exposure to fresh air and keep at rest. If breathing is difficult, administer oxygen. If irritation, coughing or breathing difficulty persists, seek medical attention.

By skin contact:

Remove contaminated clothing and footwear. Wash the affected skin thoroughly with plenty of soap and water. If irritation develops or persists, seek medical attention.

By eye contact:

Rinse eyes immediately with plenty of clean, lukewarm water for at least 15 minutes, holding the eyelids open. Remove contact lenses if present and easy to do. If irritation persists, consult an ophthalmologist.

By ingestion/aspiration:

Rinse mouth with water. Do not induce vomiting. If the person is conscious, give plenty of water to drink. Seek medical attention if large quantities have been swallowed or if discomfort persists.

4.2 Most important symptoms/effects, acute and delayed:

Acute and delayed effects are indicated in sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Treat symptomatically. No specific antidote is available.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Suitable: Non-combustible; use extinguishing media appropriate to the surrounding fire (water spray, foam, dry chemical powder, carbon dioxide).
Unsuitable: None known

5.2 Specific hazards arising from the chemical:

Non-combustible solid. On strong heating decomposes, releasing carbon dioxide and manganese oxides (MnO/Mn2O3); avoid inhaling decomposition fume.

5.3 Special protective actions for fire-fighters:

Evacuate all non-essential personnel. Intervention only by trained personnel aware of the hazards of the product. Wear self-contained breathing apparatus and full protective clothing in the event of fire.

Additional provisions:

Cool fire-exposed containers. Avoid inhalation of smoke/fume in the event of a fire involving this material; use self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Avoid generating and inhaling dust. Ventilate the area. Use the personal protective equipment described in section 8. Keep unprotected persons away from the spill area.

For emergency responders:

Wear appropriate protective equipment as described in section 8. Avoid raising dust during clean-up operations.

6.2 Environmental precautions:

Avoid, as far as possible, release of the product into the environment in large quantities. Contain spillage and prevent entry into drains, watercourses or soil. Notify the relevant authority in case of significant exposure to the environment.

6.3 Methods and materials for containment and cleaning up:

Sweep up or vacuum (avoiding dust dispersion) and collect in a suitable, labelled container for reuse or disposal. Wash the contaminated area with water after the bulk of the material has been removed.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A. General precautions for safe use:

Avoid generating and inhaling dust. Do not eat, drink or smoke while handling. Wash hands thoroughly after handling.

B. Technical recommendations for the prevention of fires and explosions:

Non-combustible; no special fire/explosion precautions are required beyond standard dust-control practice.

C. Technical recommendations on general occupational hygiene:

Do not eat, drink or smoke during handling; wash hands and exposed skin thoroughly after handling and before breaks.

D. Technical recommendations to prevent environmental risks:

Avoid release to drains, watercourses or soil. Store containers on an impervious surface. Follow the protective measures given in section 8.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Minimum Temp.	5°C
Maximum Temp.	40°C
Maximum time	24 Months (in original, unopened packaging)

B. General conditions for storage:

Store in a cool, dry, well-ventilated place, in tightly closed, clearly labelled containers, locked up and away from food, feed and incompatible materials. For additional information see subsection 10.5.

7.3 Specific end use(s):

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987):

Identification	Occupational Exposure Limit Type	Value
Manganese Carbonate (as Mn) CAS: 598-62-9	ACGIH TLV – TWA (respirable fraction)	0.02 mg/m³
	ACGIH TLV – TWA (inhalable fraction)	0.1 mg/m³
	OSHA PEL – Ceiling (as Mn)	5 mg/m³

8.2 Appropriate engineering controls:

Use local exhaust ventilation or general dilution ventilation to control dust levels below the applicable occupational exposure limit. Provide eyewash stations and washing facilities near the work area.

B. Respiratory protection:

Use a dust mask/respirator fitted with a P2 (or higher) particulate filter where engineering controls cannot keep airborne concentrations below the occupational exposure limit for manganese.

C. Specific protection for the hands:

Protective gloves (e.g. nitrile) are recommended. Replace at any sign of damage.

D. Eye and face protection:

Safety glasses with side shields or chemical goggles are recommended to prevent dust contact with the eyes.

E. Bodily protection:

Use suitable protective clothing to minimise skin contact and dust accumulation on clothing. Launder work clothing separately from other laundry.

F. Additional emergency measures:

Emergency shower (ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011) and eyewash stations (DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011) should be available near the work area.

Environmental exposure controls:

Avoid release of the product to drains, watercourses or soil. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid
Appearance	Fine crystalline powder
Color	Off-white, pale pink or buff
Odor	Odorless
Odour threshold	Not relevant *
Volatility	
Boiling point at atmospheric pressure	Not applicable – solid, decomposes before boiling
Vapour pressure at 20°C / 50°C	Not relevant *
Evaporation rate at 20°C	Not relevant *
Product Description	
Density / Relative density at 20°C	≈3.1 g/cm³ – typical value, refer to current specification sheet
Dynamic / Kinematic viscosity	Non-applicable (solid)
Concentration	Technical grade, min. 98% w/w MnCO3
pH	≈8–9 (aqueous suspension) – mildly alkaline
Vapour density at 20°C	Not relevant *
Partition coefficient n-octanol/water 20°C	Not applicable – inorganic salt
Solubility in water at 20°C	Practically insoluble in water (Ksp ≈ 2.2 × 10 ⁻¹¹); soluble in dilute acids with effervescence
Decomposition temperature	≈200°C (begins releasing CO2, forming manganese oxides)
Melting point/freezing point	Not applicable – decomposes before melting
Flammability	
Flash Point	Non-applicable (inorganic solid)
Flammability (solid, gas)	Non-flammable
Autoignition temperature	Not relevant *
Lower / Upper flammability limit	Not relevant *
Particle Characteristics	
Median equivalent diameter	Typical value — refer to current specification sheet

* Not relevant due to the nature of the product, not providing information on the properties of its hazards.

9.2 Other information:

Explosive properties	Not explosive
Oxidising properties	Not an oxidiser
Corrosive to metals	Not corrosive to metals
Heat of combustion	Not relevant *
Surface tension at 20°C	Not relevant *
Refraction index	Not relevant *

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Reacts with acids, releasing carbon dioxide. Incompatible with strong oxidising agents. Stable under normal conditions of storage and handling.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions leading to excessive temperature or pressure are not expected. Contact with strong acids generates CO2 gas.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Avoid friction of fine dust	Not applicable	Avoid excessive heating	Not applicable	Avoid prolonged exposure to moisture

10.5 Incompatible materials:

Strong Acids	Strong Oxidisers	Moisture
Avoid contact – releases CO2	Avoid contact	Avoid prolonged exposure

10.6 Hazardous decomposition products:

Carbon dioxide (CO2) and manganese oxides (MnO, Mn2O3, MnO2) on strong heating.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect):

Harmful if swallowed (H302). May cause gastrointestinal discomfort, nausea and vomiting. Chronic excessive ingestion of manganese compounds has been associated with neurological effects (see section 11.1.G).

B. Inhalation (acute effect):

Dust inhalation may cause respiratory tract irritation. Prolonged or repeated inhalation of manganese-containing dust/fume is well documented to be associated with manganism, a neurological disorder affecting the central nervous system.

C. Contact with skin and eyes (acute effect):

May cause mild irritation to skin and eyes on contact with dust.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):

Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met based on available data. IARC: Not listed.

E. Sensitizing effects:

Not expected to be a sensitiser based on available data.

F. Specific target organ toxicity (STOT) – single exposure:

Not classified for single-exposure STOT based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure:

H373 – May cause damage to the nervous system through prolonged or repeated exposure (inhalation or ingestion), consistent with the well-documented effects of chronic manganese overexposure (manganism).

H. Aspiration hazard:

Classification criteria are not met based on available data; not applicable to solids of this nature.

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Manganese Carbonate CAS: 598-62-9	LD50 oral (rat): ATE 300–2000 mg/kg (Acute Tox. 4, based on component classification)	Rat
	LC50 inhalation (dust/mist): Typical value — refer to current specification sheet	–

SECTION 12: ECOLOGICAL INFORMATION

Not formally classified as hazardous to the aquatic environment under GHS based on available data; manganese compounds should nonetheless be managed to avoid environmental accumulation.

12.1 Toxicity:

Identification	Acute Toxicity	Species	Genus
Manganese Carbonate CAS: 598-62-9	LC50 (fish): Typical value — refer to current specification sheet	Not available	Fish

12.2 Persistence and degradability:

Dissociates in the aquatic environment to manganese and carbonate ions; not persistent as a discrete chemical species, though manganese ion may partition to sediment.

12.3 Bioaccumulative potential:

Manganese is an essential trace element; bioaccumulation potential is considered low under normal environmental conditions.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Not relevant	Not relevant	No	Low

12.5 Results of PBT and vPvB assessment:

Non-applicable – this substance is an inorganic/mineral salt and is not subject to PBT/vPvB assessment criteria.

12.6 Other adverse effects:

No significant adverse ecological effects expected at normal use concentrations; avoid large releases to water bodies.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Collect and dispose of as hazardous/special inorganic waste in accordance with local regulations, or via a licensed waste disposal contractor. Do not discharge to drains or waterways.

Refer to national and local regulations on waste management. Do not discharge directly into drains, watercourses or onto the ground.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	Not assigned – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Not classified as a dangerous good under ADR/RID, IMDG or IATA/ICAO regulations. Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	Not assigned – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Not classified as a dangerous good under ADR/RID, IMDG or IATA/ICAO regulations. Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	Not assigned – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	Non-applicable
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Not classified as a dangerous good under ADR/RID, IMDG or IATA/ICAO regulations. Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product. This substance is classified as Acute Tox. 4 (H302) and STOT RE 2 (H373) under the GHS; handle with the PPE described in section 8 and avoid dust generation.

Other legislation:

Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

H302: Harmful if swallowed.

H373: May cause damage to organs through prolonged or repeated exposure.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

The United Nations Economic Commission for Europe (UNECE); publicly available GHS classification and labelling data for this CAS number.

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer | ATE: Acute Toxicity Estimate | PNOC: Particulates Not Otherwise Classified

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET