SAFETY DATA SHEET

1. Identification

Product identifier: Manganese carbonate

Other means of identification
Product No.: 2537, 2536

Recommended use and restriction on use
Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information
Company Name: LAGUNA CLAY COMPANY
Address: 14400 Lomitas Ave
           Industry Ca, 91746
Telephone: 1-800-452-4862
Fax: 1-626-333-7694
Contact Person: Rose Copado

Emergency telephone number:
Chem Tel Contract Number: MIS0000561
+1 800-255-3924
+1 813-248-0585

2. Hazard(s) identification

Hazard classification
Health hazards
Specific target organ toxicity - repeated exposure (Inhalation) Category 1

Label elements

Hazard symbol:

Signal word: Danger

Hazard statement: Causes damage to organs through prolonged or repeated exposure.

Precautionary statement
Prevention: Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response: Get medical advice/attention if you feel unwell.

Disposal: Dispose of contents/container to an appropriate treatment and disposal
facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANGANESE CARBONATE</td>
<td></td>
<td>598-62-9</td>
<td>90 - 100%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth thoroughly. Drink a few glasses of water or milk. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: May cause irritation to skin, eyes, and respiratory tract.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: The product is non-combustible.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.
Special protective equipment for fire-fighters:
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:
Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

Methods and material for containment and cleaning up:
Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

Notification Procedures:
Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved. Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental precautions:
Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:
Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities:
Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

8. Exposure controls/personal protection

Control parameters

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Type</th>
<th>Exposure Limit values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>MANGANESE CARBONATE</td>
<td>TWA</td>
<td>0.2 mg/m³</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td>- as Mn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANGANESE CARBONATE</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>US. ACGIH Notice of Intended Changes (NIC)</td>
</tr>
<tr>
<td>- Inhalable fraction. - as Mn</td>
<td></td>
<td></td>
<td>to Threshold Limit Values (02 2012)</td>
</tr>
<tr>
<td>MANGANESE CARBONATE</td>
<td>TWA</td>
<td>0.02 mg/m³</td>
<td>US. ACGIH Notice of Intended Changes (NIC)</td>
</tr>
<tr>
<td>- Respirable fraction. - as Mn</td>
<td></td>
<td></td>
<td>to Threshold Limit Values (2011)</td>
</tr>
<tr>
<td>MANGANESE CARBONATE</td>
<td>STEL</td>
<td>3 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td>- Fume. - as Mn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REL</td>
<td></td>
<td>1 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td>MANGANESE CARBONATE</td>
<td>Ceiling</td>
<td>5 mg/m³</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>- as Mn</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceiling</td>
<td></td>
<td>5 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: No data available.
Individual protection measures, such as personal protective equipment

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Eye/face protection:** Use tight fitting goggles if dust is generated.

**Skin protection**

**Hand protection:** Wear protective gloves.

**Other:** Wear suitable protective clothing.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

### 9. Physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state:</td>
<td>Solid</td>
</tr>
<tr>
<td>Form:</td>
<td>Crystals</td>
</tr>
<tr>
<td>Color:</td>
<td>Pink</td>
</tr>
<tr>
<td>Odor:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>&gt; 200 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**Upper/lower limit on flammability or explosive limits**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability limit - upper (%):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability limit - lower (%):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive limit - upper (%):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive limit - lower (%):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor pressure:</td>
<td>&lt; 0.01 kPa (25 °C)</td>
</tr>
<tr>
<td>Vapor density:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative density:</td>
<td>3.13</td>
</tr>
</tbody>
</table>

**Solubility(ies)**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility in water:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Solubility (other):</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**Partition coefficient (n-octanol/water):** No data available.

**Auto-ignition temperature:** No data available.

**Decomposition temperature:** No data available.

**Viscosity:** No data available.

**Other information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight:</td>
<td>114.94 g/mol (CH2O3.Mn)</td>
</tr>
</tbody>
</table>
10. Stability and reactivity

Reactivity: No data available.

Chemical stability: Material is stable under normal conditions.

Possibility of hazardous reactions: Hazardous polymerization does not occur.

Conditions to avoid: Avoid dust formation. Exposure to air.

Incompatible materials: Acids. Sulfur oxides.

Hazardous decomposition products: Oxides of Carbon.

11. Toxicological information

Information on likely routes of exposure

Ingestion: May be harmful if swallowed.

Inhalation: May be harmful if inhaled.

Skin contact: May cause irritation.

Eye contact: May cause temporary eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product: No data available.

Dermal Product: No data available.

Inhalation Product: No data available.

Repeated dose toxicity Product: No data available.

Skin corrosion/irritation Product: May cause skin irritation.

Serious eye damage/eye irritation Product: May cause temporary eye irritation.

Respiratory or skin sensitization Product: Not a skin sensitizer.

Carcinogenicity Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified
No carcinogenic components identified

Germ cell mutagenicity

In vitro  
Product:  No mutagenic components identified

In vivo  
Product:  No mutagenic components identified

Reproductive toxicity

Product:  No components toxic to reproduction

Specific target organ toxicity - single exposure

Product:  None known.

Specific target organ toxicity - repeated exposure

Product:  Oral Inhalation - dust and mist: Central nervous system. - Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard

Product:  Not classified

Other effects:  None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish  
Product:  No data available.

Aquatic invertebrates  
Product:  No data available.

Chronic hazards to the aquatic environment:

Fish  
Product:  No data available.

Aquatic invertebrates  
Product:  No data available.

Toxicity to Aquatic Plants  
Product:  No data available.

Persistence and degradability

Biodegradation  
Product:  There are no data on the degradability of this product.

BOD/COD ratio  
Product:  No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)  
Product:  No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)  
Product:  No data available.
Mobility in soil: No data available.

Other adverse effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT Not regulated.

IMDG Not regulated.

IATA Not regulated.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

X Acute (Immediate) X Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance
None present or none present in regulated quantities.

SARA 304 Emergency release notification
Chemical identity RQ
MANGANESE CARBONATE
SARA 311/312 Hazardous chemical

Chemical identity | Threshold Planning Quantity
--- | ---
MANGANESE CARBONATE | 500 lbs

SARA 313 (TRI reporting)

| Chemical identity | Reporting threshold for other users | Reporting threshold for manufacturing and processing |
--- | --- | ---
MANGANESE CARBONATE | 10000 lbs | 25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US state regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
MANGANESE CARBONATE Listed

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK
MANGANESE CARBONATE Listed

Inventory Status:

- Australia AICS: On or in compliance with the inventory
- Canada DSL Inventory List: On or in compliance with the inventory
- EU EINECS List: On or in compliance with the inventory
- EU ELINCS List: Not in compliance with the inventory.
- Japan (ENCS) List: Not in compliance with the inventory.
- EU No Longer Polymers List: Not in compliance with the inventory.
- China Inv. Existing Chemical Substances: On or in compliance with the inventory
- Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory
- Canada NDSL Inventory: Not in compliance with the inventory.
- Philippines PICCS: On or in compliance with the inventory
- US TSCA Inventory: On or in compliance with the inventory
- New Zealand Inventory of Chemicals: On or in compliance with the inventory
- Japan ISHL Listing: On or in compliance with the inventory
- Japan Pharmacopoeia Listing: Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID

[Diagram showing Flammability]

SDS_US - SDS000001215
www.Lagunaclay.com 800-452-4862 info@lagunaclay.com
Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date: 03-14-2014
Revision date: No data available.
Version #: 1.0
Further information: No data available.

Disclaimer: THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED "AS IS," AND LAGUNA CLAY COMPANY MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, LAGUNA CLAY COMPANY ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. LAGUNA CLAY COMPANY REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.