Material Safety Data Sheet

CARUS

CARULITE® 300 Low Temperature Oxidation Catalyst G

Section 1 Chemical Product and Company Identification

MANUFACTURER'S NAME: CARUS CORPORATION	**TELEPHONE NUMBER:** (815) 223-1500 **Fax:** (815) 224-6816 **Web:** www.caruschem.com **E-mail:** catalyst@caruschem.com
MANUFACTURING FACILITY: Carus Chemical Company 1500 Eighth Street P. O. Box 1500 LaSalle, IL 61301	**EMERGENCY TELEPHONE NO.** (800) 435 - 6856 (USA) **CHEMTREC TELEPHONE NO.** (800) 424-9300 (USA)

Section 2 Composition and Information on Ingredients

SYNONYMS: None

CLASS: Inorganic Oxides

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM ((HMIS):

Health Hazard	1
Flammability Hazard	0
Reactivity Hazard	0
Personal Protection Index	E

Hazardous Ingredients

Material	CAS No.*	Hazard Data
Manganese Dioxide	1313-13-9	PEL** C**** 5 mg Mn per cubic meter of air TLV-TWA*** 0.2 mg Mn per cubic meter of air
Copper Oxide	1317-38-0	PEL** 1 mg Cu per cubic meter of air TLV-TWA*** 1mg Cu per cubic meter of air

* Chemical Abstract Service Number

** OSHA Permissible Exposure Limit, manganese compounds (as Mn), copper dusts and mists (as Cu), 29 CFR 1910.1000 Table Z-1.

*** American Conference of Governmental Hygienists, 1999. TLV-TWA = the time weighted average concentration for a normal 8-hour workday and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

**** Ceiling Exposure Limit or maximum exposure concentration not to be exceeded under any circumstances.

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Section 3 Hazards Identification

EFFECTS OF ACUTE EXPOSURE

1. Eye Contact: May cause eye irritation.
2. Skin Contact: May cause irritation or dehydrating of skin.
3. Inhalation: May cause nose, throat and lung irritation.
4. Ingestion: Irritating to mouth, throat and stomach.

EFFECTS OF CHRONIC EXPOSURE

Prolonged inhalation of manganese compounds above the ceiling exposure limit may cause lung irritation and central nervous system disorders. The symptoms simulate Parkinson's disease.

CARCINOGENICITY

NTP: not listed. IARC Monographs: not listed. OSHA Regulated: not listed.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

Dust or fine powder may further irritate mucous membranes or open wounds.

Section 4 First Aid Measures

EMERGENCY AND FIRST AID PROCEDURES

1. Eyes
   Immediately flush eyes with large amounts of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek medical attention if irritation persists.
2. Skin
   Flush contaminated areas with large amounts of water. Remove contaminated clothing. Wash clothing before reuse.
3. Inhalation
   Remove person to fresh air. If breathing is difficult, administer oxygen. Seek medical attention.
4. Ingestion
   Never give anything by mouth to an unconscious or convulsing person. If conscious, give large quantities of water. Do not induce vomiting. Seek medical attention.

Section 5 Fire Fighting Measures

The material itself is noncombustible but may accelerate the burning of combustible material.

FLASHPOINT None

FLAMMABLE OR EXPLOSIVE LIMITS Lower: Nonflammable. Upper: Nonflammable.

EXTINGUISHING MEDIA Use extinguishing medium appropriate for surrounding materials.

SPECIAL FIREFIGHTING PROCEDURES None

UNUSUAL FIRE AND EXPLOSION HAZARDS Should not be heated or rubbed in contact with organic matter or other oxidizable substances. Keep away from heat and flammable materials. Potentially an oxidizer under certain conditions.

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Section 6 Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED Clean up spills immediately by scooping CARULITE® Catalyst into a metal drum. Deactivate by soaking with water. Cover loosely. Flush contaminated floors with abundant quantities of water into sewer, if permitted by federal, state, or local regulations.

Section 7 Handling and Storage

Store in a cool, dry area in closed container. Segregate from easily oxidizable materials, peroxides, chlorates, and acids. Protect containers against physical damage.

Section 8 Protective Equipment To Be Used

VENTILATION REQUIREMENTS Provide sufficient mechanical and/or local exhaust to maintain exposure levels below TLVL-TWA limit for manganese.
RESPIRATORY PROTECTION In cases where high dust exposure may exist, the use of NIOSH-MSHA dust respirator or an air-supplied respirator is advised. Engineering or administrative controls should be implemented to control dust.
EYE PROTECTION Primary eye protection (safety glasses or goggles).
GLOVES Rubber or plastic gloves should be worn.
OTHER PROTECTIVE EQUIPMENT Normal work clothing sufficient.

Section 9 Physical and Chemical Properties

BOILING POINT, 760 mm Hg Not applicable	**VAPOR PRESSURE (mm Hg)** Not applicable
SOLUBILITY IN WATER % BY SOLUTION	Insoluble
SPECIFIC GRAVITY 4.7 **BULK DENSITY** 1.0 g/cm^3	**PERCENT VOLATILE BY VOLUME** Not volatile
MELTING POINT Starts to decompose with evolution of oxygen at 454°C (850°F)	
APPEARANCE AND ODOR Black extruded, granulated, or powdered solid; odorless.	

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Section 10 Stability and Reactivity

STABILITY Stable under normal conditions. Moisture may reduce catalytic activity.
CONDITIONS TO AVOID Contact with incompatible materials or heat (454°C/850°F).
INCOMPATIBLE MATERIALS Avoid contact with acids. Contact with peroxides and chlorates may cause violent reaction under certain conditions, such as elevated temperature or friction. May ignite organic material, especially organic solvents. May initiate polymerization of monomers. May form unstable acetylides in contact with acetylene.
HAZARDOUS DECOMPOSITION PRODUCTS None
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION Not known to polymerize.

Section 11 Toxicological Information

Most diagnosed cases of manganese toxicity in humans have been reported following exposures to airborne concentrations of manganese above the TLV-TWA. The usual form of chronic manganese toxicity involves the central nervous system.
Reports of adverse effects in humans from ingestion of manganese are rare.

Section 12 Ecological Information

Inorganic manganese compounds have negligible vapor pressures but exist in air as suspended particulate matter, which settle under the influence of gravity.
The transport of manganese in water is influenced by the solubility of the form present. Insoluble forms, such as manganese dioxide, are transported as sediments.
The biomagnification of manganese in the food chain does not appear to be significant.

Section 13 Disposal Considerations

CARULITE® 300 is not considered a hazardous waste under 40 CFR 261. Dispose of deactivated CARULITE® in a landfill approved to accept chemical waste, after verifying that it is not contaminated with hazardous substances through usage.

Section 14 Transport Information

Proper Shipping Name:	Manganese dioxide compound
ID Number:	Not regulated by DOT
Product R.Q. (lb.)	None

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Section 15 Regulatory Information

CARULITE® 300 Low Temperature Oxidation Catalyst contains manganese compounds (CAS Reg. No. N/A) and copper compounds (CAS Reg. No. N/A) as part of the mixture and is subject to the reporting requirements of Section 313 of Title III Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
Components of this product are listed on the TSCA Inventory.
Components of the product are listed on the Canadian Domestic Substances List.

Section 16 Other Information

MSDS Status:	Revised March 2003
Revised By:	Chithambarathanu Pillai (S.O.F.)

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