

# MATERIAL SAFETY DATA SHEET

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Cu-Mn Composite Catalyst** Revision: 2nd Jan, 2024

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## SECTION 2 - HAZARDS IDENTIFICATION

Physical hazards: Not classified for physical hazards.

Health hazards: Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Occupational exposure to the substance or mixture may cause adverse health effects.

Environmental hazards: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Specific hazards: Dusts may irritate the respiratory tract, skin and eyes. Inhalation of manganese oxide dust/fumes may cause metal fume fever. The symptoms are shivering, fever, malaise and muscular pain. Chronic exposure to breathing low levels of manganese dust or fume over a long period of time can result in "manganism," a disease of the central nervous system similar to Parkinson's Disease, gait impairment, muscle spasms and behavioral changes. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. Not itself combustible but assists fire in burning materials.

Main symptoms: Skin irritation. May cause redness and pain. Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dust may irritate throat and respiratory system and cause coughing.

SECTION 3 - INFORMATION ON INGREDIENTS

<u>GENERATOR</u>	<u>CAS #</u>	<u>WGT. %</u>	<u>EXPOSURE LIMITS</u>
Manganese Dioxide	1313-13-9	greater than 65	'03 OSHA PEL TWA (manganese compounds)=5 mg/m <sup>3</sup> ceiling limit '01 ACGIH TLV/TWA = 0.2 mg/m <sup>3</sup>
Copper Oxide	1344-70-3	greater than 15	'03 OSHA PEL TWA copper fume (as copper)=0.1 mg/m <sup>3</sup> '01 ACGIH TLV/TWA copper fume = 0.2 mg/m <sup>3</sup>

Listed as IARC Carcinogen: none  
Listed as NTP Carcinogen: none  
OSHA Carcinogen: none

SECTION 4 - FIRST AID MEASURES

- Eye Contact: Flush eyes with a directed stream of water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of all eyes and lid tissue. Obtain medical attention and bring this MSDS.
- Skin Contact: Wash affected area with soap and water. Get medical attention if irritation occurs.
- Inhalation: Avoid breathing excessive dust. Remove to fresh air at once.
- Ingestion: Obtain medical attention and bring this MSDS.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point:	not applicable	Flash Point Method:	not applicable
Flammable Limits:	not applicable	Autoignition Temperature:	not applicable

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled: Clean up spill immediately. Product may be wetted down with water to minimize dusting from a large spill. Sweep up and return to a clean container. Seal and label container.

SECTION 7 - HANDLING AND STORAGE

Avoid contact with eyes, skin, or clothing. Do not breathe (dust). Wash thoroughly after handling.

Storage Temperature & Pressure: Store in a cool, dry area. Do not break seal of original packaging unnecessarily.

General: Do not store in wet or moist environments. Moisture will deactivate catalyst.

SECTION 8 - EXPOSURE CONTROL / PERSONAL PROTECTION

Personal Protection: Use appropriate engineering controls and personal protective equipment (PPE). Eye protection, gloves and protective clothing are recommended. Approved air purifying respirator should be used.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	black, free-flowing powder (dry).	pH (10% water solution):	approximately 7.0
Vapor Pressure:	not applicable	Vapor Density:	not applicable
Specific Gravity:	varies, approx. 0.6 to 0.8 for granule	Partial Decomposition:	not applicable
Odor:	none	Solubility in Water:	insoluble in water

SECTION 10 - STABILITY AND REACTIVITY

Conditions To Avoid: Manganese dioxide is an oxidizing agent; may cause combustible material to ignite more easily.

Incompatibility: Keep away from combustibles (materials that burn).

Hazardous Decomposition Products: None known

Hazardous Polymerization: None known

Stability: Stable

SECTION 11 - TOXICOLOGICAL PROPERTIES

No data available.

SECTION 12 - ECOLOGICAL INFORMATION

No data available.

SECTION 13 - DISPOSAL CONSIDERATIONS

These materials contain chemicals which are listed in 40 CFR 261, RQ – Section 102, EPCRA 313, and 40 CFR 401.

SECTION 14 - TRANSPORTATION INFORMATION

14.1. UN Number			
ADR/RID: Not dangerous goods.	IMDG: Not dangerous goods.	IATA: Not dangerous goods.	
14.2. UN Proper Shipping Name			
ADR/RID: Not dangerous goods.	IMDG: Not dangerous goods.	IATA: Not dangerous goods.	
14.3. Transport hazard class(es)			
ADR/RID: Not dangerous goods.	IMDG: Not dangerous goods.	IATA: Not dangerous goods.	
14.4. Packing group, if applicable			
ADR/RID: Not dangerous goods.	IMDG: Not dangerous goods.	IATA: Not dangerous goods.	
14.5. Environmental hazard			
ADR/RID: No	IMDG: No	IATA: No	
14.6. Special precautions for user	no data available		
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			no data available

SECTION 15 - REGULATORY INFORMATION

See Section 13.

SECTION 16 - OTHER INFORMATION

The information contained herein is, to the best of our knowledge and belief, accurate. However, It assumes no liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. It is the responsibility of the user to comply with all applicable Local laws and regulations.