



MATERIAL SAFETY DATA SHEET
COMPLIES WITH 29 CFR 1910.1200.
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 05-15-96

CHEMICAL IDENTITY

LABEL IDENTITY	MANGANESE
CHEMICAL NAME/SYNONYMS	MANGANESE
FORMULA	Mn
CHEMICAL FAMILY	METAL
CAS REGISTRY NUMBER	7439-96-5, LISTED IN THE TSCA INVENTORY
HAZARDOUS INGREDIENTS	MANGANESE
%: 100	TLV: 5mg/m3 OSHA/PEL: 5mg/m3

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Gray metallic powder, granules or pressed parts, odorless
BOILING POINT	1962°C
DENSITY (gm/cc)	7.20 @ 20°C
VAPOR PRESSURE @ 20°	1mm Hg @ 1292°C
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	Decomposes Water
EVAPORATION RATE (H2O=1)	NA
SOLUBILITY IN WATER	Decomposes
MELTING POINT	1244°C
OTHER	Moderately dangerous, will react with water to form Hydrogen.

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	Nonr
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Moderately flammable as powder
EXTINGUISHING MEDIA	Class D extinguisher, G-1 powder, MEL-T-X, TEC.
SPECIAL FIRE FIGHTING PROCEDURES	Wear NIOSH/MSHA approved self-contained breathing apparatus & full protective clothing
UNUSUAL FIRE & EXPLOSION HAZARDS	Manganese will burn when heated in air. Manganese metal/powder can present a dust explosion hazard under favoring conditions of particle size and airborne dispersion.



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HEALTH HAZARD INFORMATION

TOXICITY DATA **No data**

HMIS RATING:

HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 1 PERSONAL PROTECTION: X

ROUTES OF ENTRY

INHALATION: **Yes**
SKIN: **Yes**
INGESTION: **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

Eyes, skin and resp

*****APHIS: **No** OSHA REGULATE: **No*******

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **induce vomiting, seek medical attention**
INHALATION: **remove to fresh air, administer oxygen, seek medical attention**
SKIN CONTACT: **brush material off skin and wash affected area with soap and water**
EYE CONTACT: **flush eyes for at least 15 minutes, seek medical attention**

REACTIVITY DATA

STABILITY

Stable

CONDITIONS CONTRIBUTING TO UNSTABILITY

Reacts slowly with water, rapidly with steam

INCOMPATIBILITY (MATERIALS TO AVOID)

Strong acids, water and steam

HAZARDOUS DECOMPOSITION PRODUCTS

Manganese oxides when heated at a high temperature, reaction with water and acids release hydrogen

HAZARDOUS POLYMERIZATION

Will Not Occur

CONDITIONS TO AVOID

Contact with acids dissolves Mn



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SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Wearing full protective clothing isolate the area and insure proper ventilation. Vacuum up spill and place in a container for proper disposal.

WASTE DISPOSAL METHOD:

Consult federal, state and local regulations for proper disposal.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION

NIOSH/MSHA respirator

LOCAL EXHAUST

Meet TLV and PEL requirements

MECHANICAL (general)

Meet TLV and PEL requirements

SPECIAL

NA

PROTECTIVE GLOVES

Recommended

EYE PROTECTION

Safety glasses with side shields

OTHER PROTECTIVE EQUIPMENT

Maintain sink, safety shower and eyewash fountain in work area, full protective clothing at all times.

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

Store in tightly closed container, store in cool, dry place wash hands and face thoroughly after handling and before meals.

TRANSPORTATION REQUIREMENTS

DOT CLASS:

Not Classified

UN NUMBER:

N. C.

IMCO CLASS:

N. C.

OTHER:

None

PRECAUTIONARY LABELING

NONE

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NA= NOT APPLICABLE

ND= NO DATA FOUND