MANGANESE CHLORIDE

TOXICITY DATA:

ACUTE TOXICITY:
- Oral: LD50 (rat) 1715 mg/kg, LD50 (mouse) 202 mg/kg.
- Intravenous: LD50 (rat) 64800 mg/kg, LD50 (mouse) 70 mg/kg.
- Subcutaneous: LD50 (rat) 210 mg/kg, LD50 (mouse) 180 mg/kg.
- Intramuscular: LD50 (rat) 115 mg/kg, LD50 (mouse) 125 mg/kg.
- Intraperitoneal: LD50 (rat) 56 mg/kg, LD50 (mouse) 50 mg/kg.
- Pneumotoxic: LD50 (rat) 16 mg/kg, LD50 (mouse) 4 mg/kg.
- Parenteral: LD50 (rat) 4 mg/kg, LD50 (mouse) 8 mg/kg.
- Reproductive: LD50 (rat) 80 mg/kg, LD50 (mouse) 80 mg/kg.

NO EFFECTIVE DATA AVAILABLE.

TUMORIGENIC DATA:
- Rats: 125 mg/kg oral - 128 mg/kg intraperitoneal - LD50 (rat) 138 mg/kg, LD50 (mouse) 225 mg/kg.
- Proliferative effects (rtecs): LD50, R-1, Tumorigenic data (rtecs).

Carcinogen status: None.

Inhalation:
- MANGANESE CHLORIDE: SEE INFORMATION ON MANGANESE COMPOUNDS.

CONSUMER CONTACT:
- **NEUROTOXIN** - Moderately toxic by ingestion (anhydrous, tetrahydrate).
- Target effects: Neurotoxin, poisoning may also affect the respiratory system.
- At increased risk from exposure: Persons with a history of alcoholism, psychiatric, neurologic, or pulmonary diseases, liver dysfunction, or anemia.

* May be based on general information on manganese compounds.

HEALTH EFFECTS AND FIRST AID:

INHALATION:
- MANGANESE CHLORIDE: SEE INFORMATION ON MANGANESE COMPOUNDS.

MANGANESE COMPOUNDS:
- Neurotoxin.
- Acute exposure - no data available.

CHRONIC EXPOSURE:
- Repeated or prolonged exposure to manganese compounds may cause behavioral changes, including mood disturbances, which may be seen in manganese poisoning.
- A Parkinson-like syndrome is characterized by abnormal gait, tremors, rigidity, and occasional postural instability. The symptoms may be exacerbated by alcohol intake.
- A particular form of dementia, called Parkinson-plus syndrome, has been associated with the use of manganese-containing products. Symptoms include gait and balance impairment, head tremor, and rigidity.

FIRST AID:
- Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT:
- MANGANESE CHLORIDE: SEE INFORMATION ON MANGANESE COMPOUNDS.

MANGANESE COMPOUNDS:
- Acute exposure: Some manganese compounds may be irritating to the skin.
- Chronic exposure: Sensitization has been reported in guinea pigs.

FIRST AID:
- Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and water until no adverse symptoms or evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

EYE CONTACT:
- MANGANESE CHLORIDE: SEE INFORMATION ON MANGANESE COMPOUNDS.

MANGANESE COMPOUNDS:
- Acute exposure: Direct contact with manganese compounds may cause irritation.
- Chronic exposure: No data available.

FIRST AID:
- Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.
INGESTION:
MANGANESE CHLORIDE:
THE LEthal DOSE REPORTED IN MICE WAS 1715 MG/KG. THE SYMPTOMS WERE NOT
REPORTED. REPETITIVE EFFECTS HAVE BEEN REPORTED IN ANIMALS. SEE
INFORMATION ON MANGANESE COMPOUNDS.

MANGANESE COMPOUNDS:
ACUTE EXPOSURE: EXTREMELY LARGE DOSES OF MANGANESE COMPOUNDS MAY CAUSE
CHRONIC EXPOSURE: MANGANESE POISONING HAS BEEN REPORTED IN PERSONS DRINKING
MANGANESE CONTAMINATED WELL WATER.
FIRST AID: IF VICTIM IS CONSCIOUS, IMMEDIATELY GIVE 2 TO 4 GLASSES OF WATER
AND INDUCE VOMITING BY TOUCHING FINGER TO BACK OF THROAT. GET MEDICAL
ATTENTION IMMEDIATELY.

ANTIDOTE:
THE FOLLOWING ANTIDOTE HAS BEEN RECOMMENDED. HOWEVER, THE DECISION AS TO
WHETHER THE SEVERITY OF POISONING REQUIRES ADMINISTRATION OF AN ANTIDOTE AND
ACTUAL DOSE REQUIRED SHOULD BE MADE BY QUALIFIED MEDICAL PERSONNEL.
MANGANESE POISONING:
CALCULATED EDATION IS EFFECTIVE IN REMOVING MANGANESE, BUT HAS NO PERMANENT
EFFECT ON SYMPTOMATIC PATIENTS IN THE LATE STAGES OF MANGANESE. THE
ADMINISTRATION OF CALCIUM DISODIUM EDTATE IS RECOMMENDED. EDTATE IS
AVAILABLE AS 5 ML AMPULES OF 20% SOLUTION. GIVE 15-25 MG/KG (0.08-0.125 ML
OF 20% SOLUTION PER KILOGRAM BODY WEIGHT) IN 250-500 ML OF 5% DEXTROSE
INTRAVENOUSLY OVER A 1 TO 2 HOUR PERIOD TWICE DAILY. THE MAXIMUM DOSE SHOULD
NOT EXCEED 50 MG/KG/Day. THE DRUG SHOULD BE GIVEN IN 5-DAY COURSES WITH A REST
PERIOD OF AT LEAST 2 DAYS BETWEEN COURSES. AFTER THE FIRST COURSE. SUBSEQUENT
COURSES SHOULD NOT EXCEED 50 MG/KG/Day. DAILY URINALYSIS SHOULD BE DONE DURING
THE TREATMENT PERIOD. THE DOSAGE SHOULD BE REDUCED IF ANY UNUSUAL URINARY
FINDINGS APPEAR. INTRAVENOUS ADMINISTRATION IS CONTRAINDICATED IN THE PRESENCE
OF ELEVATED CEREBROSPINAL FLUID PRESSURE. FOR INTRAMUSCULAR ADMINISTRATION,
GIVE 20% SOLUTION (200 MG/ML) 1.25 MG/KG BODY WEIGHT EVERY 4-6 HOURS.
DILUTE EACH DOSE WITH AN EQUAL VOLUME OF 1% PROCAINE. DOSE LIMITATION IS THE
SAME AS THAT GIVEN ABOVE (BRESFABACH, HANDBOOK OF POISONING, 11TH ED.).
ANTIDOTE SHOULD BE ADMINISTERED BY QUALIFIED MEDICAL PERSONNEL.

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:
MANGANESE CHLORIDE:
POTASSIUM: EXPLOSIVE ON IMPACT.
SODIUM: EXPLOSIVE ON IMPACT.
ZINC: EXPLOSIVE REACTION WHEN HEATED.

DECOMPOSITION:
THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE TOXIC AND CORROSIVE FUMES OF
CHLORINE.

POLYMORPHIZATION:
HAZARDOUS POLYMORPHIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL
TEMPERATURES AND PRESSURES.

STORAGE AND DISPOSAL.

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING
OF THIS SUBSTANCE.

**STORAGE**

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

STORE IN TIGHTLY CLOSED CONTAINERS; PREVENT EXPOSURE TO MOISTURE.

CONDITIONS TO AVOID:

NO REPORTS FOUND.

SPILL AND LEAK PROCEDURES:

OCCUPATIONAL: SPILL: SWEEP UP AND PLACE IN SUITABLE CLEAN, DRY CONTAINERS FOR RECLAMATION OR LATER
DISPOSAL. DO NOT FLUSH SPILLED MATERIAL INTO SEWER. KEEP UNNECESSARY PEOPLE
AWAY.

PROTECTIVE EQUIPMENT:

VENTILATION:

PROVIDE LOCAL EXHAUST VEKTATION SYSTEM TO MEET PUBLISHED EXPOSURE LIMITS.