Material Safety Data Sheet
Manganese(II) nitrate hexahydrate

MSDS# 14918

Section 1 - Chemical Product and Company Identification

MSDS Name: Manganese(II) nitrate hexahydrate
Catalog Numbers: AC193460000, AC193460010, AC193462500
Synonyms: None known.

Company Identification:
Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 20694-39-7
Chemical Name: Manganese(II) nitrate hexahydrate
%: >98
EINECS#: unlisted

Hazard Symbols: XI O
Risk Phrases: 36/37/38 8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Danger! Strong oxidizer. Contact with other material may cause a fire. Causes eye, skin, and respiratory tract irritation. Target Organs: Respiratory system, eyes, skin.

Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation. May be harmful if absorbed through the skin.
Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed. May cause nausea, vomiting, and diarrhea, possibly with blood.
Inhalation: Causes respiratory tract irritation. May be harmful if inhaled.
Chronic: Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower
skin: get medical aid. immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

ingestion: get medical aid. do not induce vomiting. if conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

inhalation: remove from exposure and move to fresh air immediately. if not breathing, give artificial respiration. if breathing is difficult, give oxygen. get medical aid.

notes to physician: treat symptomatically and supportively.

section 5 - fire fighting measures

general information:
as in any fire, wear a self-contained breathing apparatus in pressure-demand, msha/niosh (approved or equivalent), and full protective gear. strong oxidizer. contact with other material may cause fire. during a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. use water with caution and in flooding amounts. some oxidizers may react explosively with hydrocarbons(fuel). may accelerate burning if involved in a fire. containers may explode when heated.

extinguishing media:
use water spray, dry chemical, carbon dioxide, or chemical foam. contact professional fire-fighters immediately. for large fires flood fire with water from a distance.

autoignition temperature: not available

flash point: not available

explosion limits: lower: not available

explosion limits: upper: not available

nfpa rating: ; instability: ox

section 6 - accidental release measures

general information:
use proper personal protective equipment as indicated in section 8.

spills/leaks:
vacuum or sweep up material and place into a suitable disposal container. clean up spills immediately, observing precautions in the protective equipment section. remove all sources of ignition. do not use combustible materials such as paper towels to clean up spill. do not let this chemical enter the environment.

section 7 - handling and storage

wash thoroughly after handling. use with adequate ventilation. minimize dust generation and accumulation. avoid breathing dust, mist, or vapor. avoid contact with clothing and other combustible materials. do not get on skin or in eyes. avoid ingestion and inhalation.

storage:
keep away from heat, sparks, and flame. do not store near combustible materials. store in a cool, dry place. store in a tightly closed container.

section 8 - exposure controls, personal protection

<table>
<thead>
<tr>
<th>chemical name</th>
<th>acgih</th>
<th>niosh</th>
<th>osha - final pels</th>
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<tbody>
<tr>
<td>manganese(II) nitrate hexahydrate</td>
<td>none listed</td>
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osha vacated pels: manganese(II) nitrate hexahydrate: none listed

engineering controls:
facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. use adequate ventilation to keep airborne concentrations low.

exposure limits

personal protective equipment

eyes: wear appropriate protective eyeglasses or chemical safety goggles as described by osha's eye and face protection regulations in 29 cfr 1910.133 or european standard en166.

skin: wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a Respirators: NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Crystals
Color: pink
Odor: characteristic odor
pH: Not available
Vapor Pressure: Not available
Vapor Density: Not available
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: Not available

Freezing/Melting Point: 37 deg C (98.60°F)

Decomposition Temperature:
Solubility in water: 3800 g/l (20°C)
Specific Gravity/Density:
Molecular Formula: MnN2O6.4H2O
Molecular Weight: 251.01

Section 10 - Stability and Reactivity

Chemical Stability: Hygroscopic: absorbs moisture or water from the air.

Conditions to Avoid: Incompatible materials, ignition sources, dust generation, combustible materials, reducing agents, exposure to moist air or water.

Incompatibilities with Other Materials
Reducing agents.

Hazardous Decomposition Products
Nitrogen oxides, oxides of manganese.

Hazardous Polymerization Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 20694-39-7: None listed
LD50/LC50: RTECS: Not available.

Carcinogenicity: Manganese(II) nitrate hexahydrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: The toxicological properties have not been fully investigated.

Section 12 - Ecological Information

Other: Do not empty into drains.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: MANGANESE NITRATE
Hazard Class: 5.1
UN Number: UN2724
Packing Group: III
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:
Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI O

Risk Phrases:
  R 36/37/38 Irritating to eyes, respiratory system and skin.
  R 8 Contact with combustible material may cause fire.

Safety Phrases:
  S 17 Keep away from combustible material.
  S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection)

CAS# 20694-39-7: Not available

Canada

Canadian WHMIS Classifications: C, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 20694-39-7 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 20694-39-7 is not listed on the TSCA Inventory. It is for research and development use only.

Section 16 - Other Information

MSDS Creation Date: 9/28/2006
Revision #2 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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