Material Safety Data Sheet
City University of Hong Kong

MSDS MANNITOL 0373

PRODUCT INFORMATION

Synonyms: Manna Sugar; Mannite; Mannitol,d- ; 1,2,3,4,5,6-Hexanhexol
Chinese Name: 甘露糖醇
CAS No: 69-65-8
Molecular Weight: 182.17
Chemical Formula: C₆H₁₄O₆

RISK SYMBOL

PHYSICAL DATA

Appearance: White powder.
Boiling Point: 290 - 295°C (554 - 563°F)
Odor: Odorless.
Melting Point: ca. 167°C (ca. 333°F)
Solubility: 1 gram/5.5 ml of water.
Vapor Density (Air=1): No information found.
Relative Density: 1.52
Vapor Pressure (mm Hg): No information found.
pH: No information found.
Evaporation Rate (BuAc=1): No information found.
% Volatiles by volume @ 21°C (70°F): 0

FIRE AND EXPLOSION DATA

Fire:
As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Mannitol: Flash Point: > 149°C (300°F)

Minimum dust cloud ignition temperature: 460°C (860°F)

Explosion:
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Mannitol:
Minimum explosible concentration = 0.065 g/l Maximum explosion pressure: 97 lb/sq. In.

Fire Extinguishing Media: Water spray, carbon dioxide, or dry powder.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Pressure from the extinguishing media may cause severe dusting.

REACTIVITY DATA

Stability: Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization: Will not occur.
Incompatibilities: Strong oxidizers.
Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

The above information is believed to be accurate to the best of our knowledge.
No responsibilities or liabilities are assumed or implied by CITY U for their inaccuracies.
HEALTH HAZARD DATA

Inhalation:
Large quantities of inhaled material could cause irritation of the upper respiratory tract. A tickling cough is a common symptom.

Ingestion:
May cause gastric irritation, nausea and diarrhea. Large doses produce vomiting, chills, dizziness, chest pain, heart failure and pulmonary edema.

Skin Contact: May cause irritation and discoloration of sensitive skin areas.
Eye Contact: May cause irritation, redness and pain.
Chronic Exposure: No information found.
Aggravation of Pre-existing Conditions: No information found.

FIRST AID MEASURES

Inhalation: Remove to fresh air. Get medical attention for any breathing difficulty.
Ingestion:
If large amounts were swallowed, give water to drink and get medical advice.

Skin Contact:
Wash exposed area with soap and water. Get medical advice if irritation develops.

Eye Contact:
Wash thoroughly with running water. Get medical advice if irritation develops.

PREVENTATIVE MEASURES

Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL):
  15 mg/m³ total dust, 5 mg/m³ respirable fraction for nuisance dusts.

- ACGIH Threshold Limit Value (TLV):
  10 mg/m³ total dust containing no asbestos and < 1% crystalline silica for Particulates Not Otherwise Classified (PNOC).
Ventilation System:
In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection: Wear protective gloves and clean body-covering clothing.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Handling and Storage:
Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

ENVIRONMENTAL PROTECTION DATA

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.