



Material Safety Data Sheet  
alpha-D-(+)-Lactose monohydrate

MSDS# 45372

Section 1 - Chemical Product and Company Identification

MSDS Name: alpha-D-(+)-Lactose monohydrate  
Catalog Numbers: L5-500, L6-200LB, L6-212, L6-500, L8-12, L8-212  
Synonyms: Milk Sugar; Lactin; Lactobiose; 4-(beta-d-Galactosido)-d-Glucose; Soccharum Lactin

Company Identification: Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410

For information in the US, call: 201-796-7100  
Emergency Number US: 201-796-7100  
CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#: 5989-81-1  
Chemical Name: alpha-D-Lactose monohydrate  
%: 100  
BINECS#: unlisted

Hazard Symbols: None listed  
Risk Phrases: None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Caution! The toxicological properties of this material have not been fully investigated. May cause eye and skin irritation.  
Target Organs: None known.

Potential Health Effects

Eye: May cause eye irritation. The toxicological properties of this material have not been fully investigated.  
Skin: May cause skin irritation. The toxicological properties of this material have not been fully investigated.  
Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. The toxicological properties of this substance have not been fully investigated.  
Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.  
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.  
Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.  
Ingestion: Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Get medical aid if irritation or symptoms occur.  
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 if cough or other symptoms appear.  
Notes to Physician:

Section 5 - Fire Fighting Measures

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved

General Information: or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Dust can be an explosion hazard when exposed to heat or flame.

Extinguishing Media: Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

NFPA Rating: health: 1; flammability: 1; instability: 0;

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. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
alpha-D-Lactose monohydrate	none listed	none listed	none listed

OSHA Vacated PELs: alpha-D-Lactose monohydrate: None listed

Engineering Controls:

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.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a 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: Solid

Color: white

Odor: odorless

pH: Not available

Vapor Pressure: Negligible.

Vapor Density: Not available

Evaporation Rate: Negligible.

Viscosity: Not available

Boiling Point: Decomposes

Freezing/Melting Point: 219 deg C ( 426.20°F)

Decomposition Temperature:

Solubility in water: Soluble in water.

Specific Gravity/Density: 1.525

Molecular Formula: C12H22O11.H2O

Molecular Weight: 360.32

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.  
Conditions to Avoid: Incompatible materials, dust generation, excess heat.  
Incompatibilities with Other Materials: Not available  
Hazardous Decomposition Products: Carbon monoxide, carbon monoxide, carbon dioxide.  
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 5989-81-1: None listed

LD50/LC50: RTECS: Not available.

Carcinogenicity: alpha-D-Lactose monohydrate - 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

Not available

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

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: Not available

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 5989-81-1: Not available

Canada

Canadian WHMIS Classifications: Not controlled.

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# 5989-81-1 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 5989-81-1 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form in on the Inventory (40CFR720.3(u)(2)).

Section 16 - Other Information

MSDS Creation Date: 2/16/1999

Revision #7 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 merchantability 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.