

MATERIAL SAFETY DATA SHEET**[1.PRODUCT AND COMPANY IDENTIFICATION]**

PRODUCT NAME : MANNITOL KAO (JP GRADE)
SUPPLIER : Kao Corporation
ADDRESS : 1-3,Bunka 2-chome,Sumida-ku,Tokyo 131-8501 Japan
DIVISION : Chemical Division
TELEPHONE NUMBER : 81-3-5630-7700
FAX NUMBER : 81-3-5630-7889
EMERGENCY TELEPHONE NUMBER : 81-3-5630-7700

[2.COMPOSITION/INFORMATION ON INGREDIENTS]

SUBSTANCE OR PREPARATION : Substance
INGREDIENTS : D-Mannitol
CAS RN : 69-65-8
INGREDIENTS CONTRIBUTING TO THE HAZARD(JAPAN) : None

[3.HAZARDS IDENTIFICATION]

MOST IMPORTANT HAZARDS :
ADVERSE HUMAN HEALTH EFFECTS : To the best of our investigation, no special hazards have to be mentioned.
ENVIRONMENTAL EFFECTS : To the best of our investigation, no information available.
PHYSICAL AND CHEMICAL HAZARDS : This material is not dangerous in case of usual handling.
CLASS NAME FOR MSDS IN JAPAN : Not applicable

[4.FIRST-AID MEASURES]

IN CASE OF INHALATION : Remove person to fresh air. If necessary seek medical attention.
IN CASE OF SKIN CONTACT : Wash material off the skin with plenty of water and soap. If necessary seek medical attention.
IN CASE OF EYE CONTACT : Immediately hold eyelids open and flush with a stream of water for at least 15 minutes. If necessary seek medical attention.
IN CASE OF INGESTION : Seek medical attention. Never give anything by mouth to an unconscious person. If possible, rinse out mouth and give one or two glasses of water or milk to drink.

[5.FIRE-FIGHTING MEASURES]

EXTINGUISHING MEDIA : Water spray, powder
NOT SUITABLE EXTINGUISHING MEDIA : No information available
SPECIFIC HAZARDS : No information available
SPECIFIC METHODS : Keep away from sources of ignition and use appropriate extinguishing media.Fight fire from upwind position if possible.
PROTECTION OF FIREFIGHTERS : Use goggles in combination with dust mask, and another protections as appropriate to situation.

[6.ACCIDENTAL RELEASE MEASURES]

PERSONAL PRECAUTIONS : Use mask, goggles and protective gloves.
Large spills : Remove person to safety.
Ensure adequate ventilation.

- Treat from upwind position.
- ENVIRONMENTAL PRECAUTIONS : Do not discharge into the drains, surface waters or ground water directly.
- METHODS FOR CLEANING UP : Sweep or vacuum spills.
Prevent dispersion of dust.
- PREVENTION OF SECONDARY HAZARDS : No information available

[7.HANDLING AND STORAGE]

- HANDLING
 - TECHNICAL MEASURES : Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
 - PRECAUTIONS : This product may be solidified totally or partially according to the storage condition. In that case, please warm-up for melting, then use at homogeneous liquid.
 - SAFE HANDLING ADVICE : Handle in well-ventilated areas.
Use safety glasses and protective gloves as appropriate to situation.
Wash hands and face and gargle after handling.
- STORAGE
 - STORAGE CONDITIONS : Keep container tightly closed.
Protect from sun. Store in a dark and well-ventilated place.
Keep away from water and humidity.
 - PACKAGING MATERIALS : No information available

[8.EXPOSURE CONTROLS/PERSONAL PROTECTION]

- ENGINEERING MEASURES : Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Use local exhaust ventilation, in case of generation of dust.
- LIMIT VALUES
 - ACGIH(TLV) : Not established
 - OSHA(PEL) : Not established
- PERSONAL PROTECTIVE EQUIPMENT
 - RESPIRATORY PROTECTION : Use dust mask, as appropriate to situation.
 - HAND PROTECTION : Rubber gloves
 - EYE PROTECTION : Safety glasses with side shield(Safety goggles or Face shield)
 - SKIN AND BODY PROTECTION : Full-body suit
 - HYGIENE MEASURES : No information available

[9.PHYSICAL AND CHEMICAL PROPERTIES]

- PHYSICAL STATES
 - FORM : Powder
 - COLOUR : White
 - ODOUR : Odourless
 - pH : No data available
- SPECIFIC TEMPERATURES/TEMPERATURE RANGES AT WHICH CHANGES IN PHYSICAL STATE OCCUR
 - BOILING POINT : No data available
 - MELTING POINT : 168 °C (334.4 °F)
 - DECOMPOSITION TEMPERATURE : No data available
 - FLASH POINT : No data available
 - AUTOIGNITION TEMPERATURE : No data available

EXPLOSION PROPERTIES

EXPLOSION	: UPPER LIMIT No data available	LOWER LIMIT No data available
VAPOUR PRESSURE	: No data available	
VAPOUR DENSITY	: No data available	
DENSITY	: No data available	
SOLUBILITY		
WATER SOLUBILITY	: Soluble	
SOLVENT SOLUBILITY	: Insoluble in alcohol and ether.	
OCTANOL/WATER PARTITION COEFFICIENT	: No data available	
OTHER DATA	: No data available	

[10.STABILITY AND REACTIVITY]

STABILITY	: No information available
HAZARDOUS REACTIONS	: No self-reactivity.
CONDITIONS TO AVOID	: No information available
MATERIALS TO AVOID	: No information available
HAZARDOUS DECOMPOSITION PRODUCTS	: No information available
OTHERS	: No information available

[11.TOXICOLOGICAL INFORMATION]

ACUTE TOXICITY	: Oral, rat, LD50 : 17.3g/kg Oral, mouse, LD50 : 22g/kg
LOCAL EFFECTS	:
CORROSIVITY	: No information available
SKIN IRRITATION	: No information available
EYE IRRITATION	: No information available
SENSITIZATION	: No information available
CHRONIC TOXICITY/LONG TERM TOXICITY	: No information available
CARCINOGENICITY	: No information available
IARC	: Not established
NTP	: Not established
OSHA	: Not established
MUTAGENICITY	: No information available
TERATOGENICITY	: No information available
REPRODUCTION TOXICITY	: No information available
OTHER DATA	: No information available

[12.ECOLOGICAL INFORMATION]

MOBILITY	: No information available
PERSISTENCE/ DEGRADABILITY	: No information available
BIOACCUMULATION	: No information available
ECOTOXICITY	:
AQUATIC TOXICITY	: No information available
OTHER DATA	: No information available

[13.DISPOSAL CONSIDERATIONS]

Review "HANDLING AND STORAGE (Section 7)".
Passed to a licensed waste contractor.

Dispose of waste in accordance with local, state and federal regulations.

[14.TRANSPORT INFORMATION]

Follow all regulations in your country or region

UN CLASS/UN NUMBER : Not applicable

PRECAUTIONS : Review "ACCIDENTAL RELEASE MEASURES (Section 6)".
Review "HANDLING AND STORAGE (Section 7)".
Ensure containers without breakage or leakage.
Ensure containers tightly fixed.
Follow all regulations in your country or region.

[15.REGULATORY INFORMATION]

Follow all regulations in your country or region

INVENTORIES	:	ENCS(Japan)	8-49
		TSCA(USA)	Yes
		EINECS(EU)	200-711-8
		AICS(Australia)	Yes
		DSL(Canada)	Yes
		ECL(Korea)	KE-23061
		PICCS(Philippines)	Yes

KAO Corporation is not able to check up the regulatory information in regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

[16.OTHER INFORMATION]

REFERENCE : -Safety data sheet for chemical products - Part 1: Content and order of sections(ISO 11014-1)
-International Chemical Safety Cards(ICSC) (Compiler's Guide)(1994)

To the best of the manufacturer's knowledge, the information contained herein is accurate. However, neither the manufacturer, nor any of its affiliates, make any representations or warranties (expressed or implied), nor assumes any liability (including liability for any direct, incidental, consequential, or other damages) with respect to the accuracy or completeness of the information contained herein. Such information may be (without limitation) invalid if the specified material is used in combination with another, in a particular process, or under unusual conditions. Determination of suitability of any material for any given purpose is the sole responsibility of the user who assumes all risk and responsibility therefore. All materials may present unknown hazards and should be used with appropriate caution. The manufacturer cannot and does not guarantee that the hazards described herein are the only ones that exist.