MATERIAL SAFETY DATA SHEET

Material Name: Magnesium Sulphate Heptahydrate (Epsom Salt)

Section 1 – Chemical Product and Company Identification
Chemical Name: Magnesium Sulfate Heptahydrate, Technical Standard
Commercial Use Synonyms: Magnesium sulfate, 7-hydrate; Epsom Salt
SUPPLIER Intersac International Suppliers andcontractorsInc.

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General Comments: FOR COMMERCIAL USE ONLY; NOT TO BE USED AS A PESTICIDE.
Section 2 – Composition / Information on Ingredients

CAS	Component	Percent
10034-99-8	Magesium Sulphate Heptahydrate	100

Component Related Regulatory Information
This product may be regulated, have exposure limits orother information identified as the following: Magnesium sulfate(7487-88-9).
Component Information/Information on Non-Hazardous Components
This product is considered hazardous under 29 CFR 1910,1200 (Hazard Communication).

Section 3 – Hazards Indentification
Emergency Overview
Magnesium Sulfate Heptahydrate is an odorless, color less to white solid in crystalline form. Contact may cause irritation to eye, skin, and respiratory system. Magnesium Sulfate Heptahydrate is not flâm mable or reactive. Thermaldecomposition of Magnesium Sulfate Heptahydrate produces irritating vapors and toxic gases(e.g.sulfur oxides).Emergency responders should wear proper personal protective equipment for the releases to which they areresponding.
Hazard Statements
Caution! May cause irritation to eyes, skin, and respiratory system. Avoid contact with eyes and prolonged contact with skin.
Avoid breathing dusts. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation.
Potential Health Effects: Eyes
Exposure to particulates or solution of Magnesium Sulfate Heptahydrate may cause mild irritation of the eyes with symptoms such as stinging, tearing andredness.

Potential Health Effects: Skin
Magnesium Sulfate Heptahydrate can cause slight irritation of the skin, especially after prolonged exposures. Repeated skin contact may lead to dermatitis(red, crackedskin).Symptoms are generally alleviated when exposure ends.

Potential Health Effects: Ingestion
Ingestion of Magnesium Sulfate Heptahydrate(especially in large volumes) can cause symptoms which include vomiting, diarrhea, andnausea. If elimination is blocked by bowel block age or other reasons, depression of the central nervous system, lack of reflexes and hypocalcemia can occur. Potential Health Effects: Inhalation

Breathing dusts or particulates generated by Magnesium Sulfate Heptahydrate can lead to irritation of the nose, throat or respiratory system. Symptoms of suchexposure could include coughing and sneezing. Symptoms are generally alleviated when exposure ends.

HMIS Ratings: Health Hazard: 1 Fire Hazard: 0 Physical Hazard: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Section 4 – First Aid Measures
First Aid: Eyes
Immedia telyflushe yes with large amounts of room temper ture water, occasionally lifting the lower and upper lids,for at least 15 minutes.If symptoms persist after 15 minutes of irrigation,seek medical attention.
First Aid: Skin
Remove all contaminated clothing. For skin contact, wash thoroughly with soap and water for at least 20 minutes. Seek immediate medical attention if irritation develops or persists.
First Aid: Ingestion
DO NOT INDUCE VOMITING, unless directed by medical personnel. Have victim rinse mouth thoroughly with water, if conscious. Never give anything by mouth to a victim who is unconscious or having convulsions. Contact a physician or poison control center immediately.
First Aid: Inhalation
Remove source of contamination or move victim to fres hair. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket maske quipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Get immediate medical attention.
First Aid: Notes to Physician
There is no specific antidote. Care is symptomatic and supportive.

Section 5 – Fire Fighting Measures
FlashPoint: Not applicable.
MethodUsed: Not applicable.
UpperFlammableLimit(UEL): Not applicable.
LowerFlammableLimit(LEL): Not applicable.
AutoIgnition: Not available.
Flammability Classification: Not applicable.
General FireHazards
Magnesium Sulfate Heptahydrate is not combustible, and does not contribute to the intensity of a fire. When involved in afire, this material may decompose and produce irritating vapors, acrid smoke and toxic gases.

Hazardous Combustion Products
When heated to decomposition, this product may emit toxic fumes of sulfur oxides.
Extinguishing Media
Use methods for surrounding fire.
Fire Fighting Equipment/Instructions
Firefighters should wear full protective clothing including self-contained breathing apparatus.
NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0 Other:
Hazard Scale: 0= Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Section 6 – Accidental Release Measures
Containment Procedures
Stop the flow of material,if this can be done without risk.Contain the discharged material..If sweeping of a contaminated area is necessary use a dust suppressant agent,which does not react with product(seeSection10 for incompatibility information).Keep spilled material dry and away from moisture.

Clean-Up Procedures
Wear appropriate protective equipment and clothing during clean-up. Shovel the material into waste container. Thoroughly wash the area after a spill or leak clean-up. Avoid contamination ofsoil, and preventspill residue from running to groundwater or storm drains.

Evacuation Procedures
Evacuate the are a promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials that burn away from spilled material. In case of large spills, follow all facility emergency response procedures.

Special Procedures
Remove soiled clothing and launder before reuse. Avoid all skin contact with the spilled material. Have emergency equipment readily available.

Section 7 – Handling and Storage
Handling Procedures
All employees who handle Magnesium Sulfate Heptahydrate should be trained to handle it safely. Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

Storage Procedures
Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Keep containers closed—material is hygroscopic. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatiblechemicals(see Section 10,Stabilityand(Reactivity).Stor age areas should be made of fire-resistant materials. Post warningand"NOSMOKING"signsin stor age anduse areas, asappropriate. Use corrosion- resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Have appropriate extinguishing equipment in the stor age area(i.e.sprinkler system, portable fire extinguishers).

Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product. Keep this material away from food, drink and animal feed. Do not store this material in open or unlabeled containers. Limit quantity of material stored. Wipe down area of use periodically to avoid the accumulation of dusts.

Section 8 – Exposure Controls / Personel Protection
Exposure Guidelines
A: General Product Information
Noexposureguidelineshavebeenestablished.
B:ComponentExposureLimits
The exposure limits given are for Particulates Not Otherwise Classified.
ACGIH:10mg/m3TWA(Inhalablefraction)
3mg/m3TWA(Respirablefraction)
OSHA: 15 mg / m3 TWA (Total dust)
5mg/m3TWA(Respirablefraction)
DFGMAKS:4mg/m3TWA(Inhalablefraction)
1.5 mg / m3 TWA (Respirable fraction)

Engineering Controls
Use mechanical ventilation such as dilution and loca lexhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

PERSONAL PROTECTIVE EQUIPMENT
The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR SubpartI(beginning at 1910.132).Please reference applicable regulations and standards for relevant details.
Personal Protective Equipment: E**yes/Face**
Wear safety glasses with side shields(or goggles) and a face shield. If necessary, refer to U.S. OSHA 29 CFR 1910.133.
Personal Protective Equipment: Skin
Wear appropriate work gloves for type of operation. If necessary, refer to U.S. OSHA 29 CFR 1910.138.
Personal Protective Equipment: Respiratory None required where adequate ventilation conditions exist. If airborne concentrations are above the applicable exposure limits, use NIOSH-approved respiratory protection. If respiratory protection is needed, use only protection authorized in the U.S.Federal OSHA Standard(29CFR1910.134),applicable U.S. Stateregulations. Oxygen levels below 19,5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary selfcontained air supply is required under OSHA's Respiratory Protection Standard(1910.134-1998).
Personal Protective Equipment: General
Use good hygiene practices when handling this material including changing and laundering work clothing after use. Have a safety shower or eye-wash fountain available. Wash hands thoroughly afterhandling material. Donot eat, drink, or smoke in work areas.

Section 9 – Physical & Chemical Properties

Physical Properties: Additional Information

The data provided in thissection are to be used for productsafety handling purposes.Please referto Product Data Sheets, Certificates of Conformityor Certificates of Analysis for chemical and physical data for determinations of quality and for formulation purposes.

Appearance : Colorless to white crystals
Physical State: Solid
Vapor Pressure:8 mm Hg @68 deg F
Boiling Point: No tApplicable
Solubility(H2O):34g/m Lat 20 degc
Softening Point: Not applicable

Sublimation Point: Not Applicable
Molecular Weight:246,48
Octanol/H2O Coefficient: Not Applicable
Saturated Vapor Concentration: Not Applicable

Odor: Odorless
pH:7(34%solnat20degC)
VaporDensity: Not applicable
Freezing/MeltingPoint:118.4 deg F(48.1degC)
SpecificGravity:1,7(H2O=1)
ParticleSize: Standard:0,1-2mm,Finecrystals 0.8mm
BulkDensity: Standard:0.95g/cm3,Finecrystals:0.92g/cm3
Volatility: Not Applicable
HeatofCombustion: Not Applicable
Evaporation Rate: Not applicable
ChemicalFormula: MgSO4.7H2O

Section 10 – Chemical Stability & Reactivity Information
Chemical Stability
Under normal conditions of temperature and pressure, Magnesium Sulfate Heptahydrate is stable. Loses some moisture on exposure to dry air at room temperature.
Chemical Stability: Conditions to Avoid
Avoid high temperatures, excessive heat, incompatible materials and air (material is hygroscopic.
Incompatibility
Ethoxy ethyl alcohols, arsenates,phosphates,tartrates,lead,barium,strontium and calcium,strongoxidizers.
Hazardous Decomposition
When heated to decomposition, this product may emit toxic sulfur oxides.
Hazardous Polymerization
Will not occur.

Section 11 – Toxicological Information

Acute Toxicity

A: General Product Information

Acute exposure may cause mild skin and eye irritation.Gastrointestin alabsorption may cause acute magnesium poisoning. Symptoms include flushing, sweating, low blood pressure, depression of reflexes, flaccid paralysis, hypothermia,circulatory collapse,and depression of CNS and heart function.Excessive long-term ingestion of this product may cause also cause magnesium poisoning with symptoms described above.

B:ComponentAnalysis-LD50/LC50

No information available.

B**: Component Analysis - TDLo/LDLo**

TDLo (Oral-Man)183mg/kg/4hours-intermittent: Gastrointestinal: hypermotility, diarrhea; LDLo(Intraduodenal-Woman) 5344mg/kg

Mutagenicity

No information available.

Teratogenicity

No information available.

Other Toxicological Information

None.

Section 12 – Ecological Information

Ecotoxicity

No information available.

Environmental Fate

No potential for food chain concentration.

Section 13 – Disposal ConsiderationsUS EPA

Waste Number & Descriptions

A: General Product Information

As shipped, product is not considered a hazardous waste by the EPA. You must test your waste using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for wastes of Magnesium Sulfate Heptahydrate.

Disposal Instructions

Dispose of in accordance with all applicable Federal, State or provincial, and local regulations.

Section 14 – Transportation Information

NOTE: The shipping classification information in this section (Section14) is meant as a guide to the overall classification of the product.However,transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information

Shipping Name: Not Regulated
Hazard Class: Not Classified
UN/NA #: Not Classified
Packing Group: None
Required Label (s): None

50th Edition International Air Transport Association (IATA):

For Shipments by Air transport:This information applies to air shipments both within the U.S.and for shipments originating in the U.S.,but being shipped to a different country.

UN/NA #: UN 3077

Proper Shipping Name: Environmentally Hazardous Substance, solid, n.o.s. (Magnesium Sulfate Heptahydrate)

Hazard Class: 9 (Miscellaneous Dangerous Goods)
Packing Group: III
Passenger & Cargo Aircraft Packing Instruction: 911

Passenger & Cargo Aircraft Maximum Net Quantity: 400 kg
Limited Quantity Packing Instruction (Passenger&CargoAircraft):Y911 **Limited Quantity Maximum Net Quantity (Passenger&CargoAircraft):**30kgG **Cargo Aircraft Only Packing Instruction:**911
Cargo Aircraft Only Maximum Net Quantity: 400 kg
Excepted Quantities: E1 **Special Provisions:** A97, A158 ERG **Code:**
9L
Limited Quantity Shipments:
Shipments for air must be marked with the Proper Shipping Name Environmentally Hazar dous Substance, solid, n.o.s.(Magnesium Sulfate Heptahydrate) and shall be marked with the UN Number (3077)preceded by the letters"UN",placed within a diamond. The width of the line forming the diamond shall be at least 2mm;the number shall be at least 6mm high. The total weight of each outer packaging cannot exceed 30kg.
Excepted Quantities: The maximum quantity of this material per iner receptacle is limited to 30g perreceptacle and the aggregate quantity of this material per completed package does not exceed 1kg.The iner receptacles must be securely packed in an intermediate packaging withcushioning material to prevent movement in the inner receptacles and packed in a strong outer box with a gross mass not to exceed 29kg.The completed package must meet a drop test. The requirements are foundin 2.7.6.1.The package must not be opened or otherwise altered until it is no longer in commerce. For air transportation no shipping paper is required. The package must be legibly marked with the following marking:

NOTE: The"*"must be replaced by theprimary hazard class, or when assigned, the division of each of the hazar dous materials contained in the package. The"**"must be replaced by the name of the shipper or consignee if notshown elsew here on the package. The symbol shall be not less than 100mmx100mm and must be durable and clearly visible.

International Maritime Organization (I.M.O.) Classification
Magnesium Sulfate Heptahydrate is not regulated under I.M.O.

Section 15 – Regulatory Information
US Federal Regulations
A: General Product Information
None.
B: Component Analysis
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR355
Appendix A), SARA Section 313 (40 CFR 372,65) and/or CERCLA (40 CFR 302,4).
Magnesium Sulfate Heptahydrate (10034-99-8)
CERCLA: Final RQ = Not Applicable
SARA 302 (EHS TPQ) : There are no specific Threshold Planning Quantities for Magnesium Sulfate Heptahydrate. The
default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs. (4,540 kg) therefore applies,
per 40 CFR 370.20.

C: Sara 311/312 Tier II Hazard Ratings:

Component	CAS	Fire Hazard	Reactivity Hazard	Pressure Hazard	Immediate Health Hazard	Chronic Health Hazard
Magnesium Sulphate Heptahydrate	10034-99-8	No	No	No	No	No

State Regulations

A: General Product Information

Other state regulations may apply.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substance lists:

Component	CAS	CA	FL	MA	MN	NJ	PA
Magnesium Sulphate Heptahydrate	10034-99-8	No	No	No	No	No	No

Other Regulations

A: General Product Information

Not determined.

B: Component Analysis – Inventory

Component	CAS	TSCA	DSL	EINECS
Magnesium Sulphate Heptahydrate	10034-99-8	YES	YES	YES

C: Component Analysis - WHMIS IDL

Magnesium Sulfate Heptahydrate is not identified under the Canadian Hazardous Products Act Ingredient Disclosure List.

Component	CAS	Minimum Concentration
Magnesium Sulphate Heptahydrate	10034-99-8	No disclosure limit

ANSI Labeling (Z129.1):

CAUTION! MAY CAUSE RESPIRATORY SYSTEM, SKIN AND EYE IRRITATION. HARMFUL IF INGESTED OR INHALED OR BY PROLONGED O REPEATED SKINCON TACT. Avoid contact with skin, eyes, or clothing. Do not tast or swallow. Avoid breathing dusts and particulates. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, faceshields, suitable body protection, and NIOSH/MSHA-approved respiratory protection, as appropriate**. FIRST-AID:** In case of contact, immediately flush skin or eye swith plenty of water for at least 15 minute swhile removing contaminated clothing and shoes. If inhaled, remove to freshair. If ingested,do not induce vomiting.Get medica attention.INCASEOFFIRE:Use water fog,dry chemical,CO2,or“alcohol”foam.IN **CASE OF SPILL:**Absorb spill with inert material.Place residue in suitable container.Consult Material Safety Data Sheet for additional information.

Section 16 – Other Information
Other Information

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EPA=Environmental Protection Agency; TSCA=Toxic Substance Control Act; ACGIH=American Conferenceof Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institutefor Occupational Safetyand Health; NTP=National Toxicology Program; OSHA=Occupational Safetyand Health Administration; WHMIS=Workplace Hazardous Materials Information System