INTREPID POTASH

MATERIAL SAFETY DATA SHEET
Trio®, all grades

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Trio®, All Grades
Chemical Name	Potassium Magnesium Sulfate
Chemical Family	Inorganic Salt
Synonyms/Brands:	Potassium Magnesium Sulfate, SPM, Langbeinite Sulfate of Potash Magnesia
Chemical Formula:	$K_2SO_4 \cdot 2MgSO_4$
Primary Use:	Potash Crop Nutrient / Animal Feed Ingredient
Responsible Party:	Intrepid Potash – New Mexico, LLC 210 Red Cloud Rd. P.O. Box 101 Carlsbad, NM 88220
Non-Emergency Technical Contact:	7:00am – 4:00pm Mountain Time USA, Mon – Fri: 575-234-3847

EMERGENCY OVERVIEW
24 Hour Emergency Telephone Number:
For Chemical Emergencies:
Spill, Leak, Fire or Accident
Call CHEMTREC
North American: 800-424-9300

Health Hazards:	Irritant. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.
Physical Hazards:	None Known
Physical Form:	Solid
Appearance:	White to gray, crystalline or granular
Odor:	None

NFPA HAZARD CLASS		**HMIS HAZARD CLASS**	
Health:	1 (Slight)	Health:	1 (Slight)
Flammability:	0 (Least)	Flammability:	0 (Least)
Instability:	0 (Least)	Reactivity:	0 (Least)
Special Hazard:	None	PPE:	Section 8

Status: Final

Revision Date: September 15, 2009

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2. COMPOSITION/INFORMATION ON INGREDIENTS.

Component	*% Weight*	*Exposure Guideline*		
		Limits	*Agency*	*Type*
Potassium Magnesium Sulfate (Langbeinite) CAS No. 14977-37-8	96 – 99.5	NE	OSHA ACGIH	ALL
Sodium Chloride CAS No. 7647-14-5	0.5 – 4	NE	OSHA ACGIH	ALL

NE = Not established, but the following particulate limits apply to all inert inorganic dusts.

Particulates Not Otherwise Classified (PNOC)	10 mg/m^3 3mg/m^3	AGGIH ACGIH	TWA – Inhalable TWA- Respirable
Particulates Not Otherwise Regulated (PNOR)	15 mg/m^3 5 mg/m^3	OSHA OSHA	TWA – Total Dust TWA - Respirable

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

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3. HAZARDS INDENTIFICATION

POTENTIAL HEALTH EFFECTS	
Eye:	Contact may cause mild eye irritation including stinging, watering and redness.
Skin:	Contact may cause mild irritation including redness and a burning sensation. No harmful effects from skin absorption have been reported.
Inhalation (Breathing):	No information available. Studies by other exposure routes suggest a low degree of hazard by inhalation.
Ingestion (Swallowing):	Low to moderate degree of toxicity by ingestion.
Signs and Symptoms:	Effects of overexposure may include irritation of the nose, throat and digestive tract, nausea, vomiting, diarrhea, abdominal cramping, irregular heartbeats (arrhythmia), dehydration and hypertension.
Cancer	Inadequate data available to evaluate the cancer hazard of this material.
Target Organs:	No data available.
Developmental:	Inadequate data available for this material
Other Comments:	To the best of our knowledge, the chemical and toxicological properties of potassium magnesium sulfate have not been thoroughly investigated.
Pre-Existing Medical Conditions:	Respiratory diseases (asthma-like disorders) and high blood pressure (hypertension).

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4. FIRST AID MEASURES

Eye:	If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water for at least 15 minutes. If symptoms persist, seek medical attention.
Skin:	Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops and persists, seek medical attention.
Inhalation (Breathing):	If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
Ingestion (Swallowing):	If swallowed, seek emergency medical attention. If victim is drowsy or unconscious and vomiting, place on left side with head down and do not give anything by mouth. If victim is conscious and alert and ingestion occurred within the last hour, vomiting should be induced for ingestion of large amounts (more than 5 ounces or a little more in an adult) preferably under direction from a physician or poison center. If possible, do not leave victim unattended and observe closely for adequacy of breathing.
Note to Physicians:	None known

5. FIRE FIGHTING MEASURES

Flammable Properties:	**Sulfate of Potash Magnesia is non-flammable** Flash Point – Not applicable OSHA Flammability Class – Not applicable LEL/UEL – Not applicable Autoignition Temperature – Not applicable
Unusual Fire & Explosion Hazards:	None known
Extinguishing Media	Use extinguishing agent suitable for type of surrounding fire.
Fire Fighting Instructions:	Positive pressure, self-contained breathing apparatus is required for all fire fighting activities involving hazardous materials. Full structural fire fighting (bunker) gear is the minimum acceptable attire. The need for proximity, entry, flashover and/or special chemical protective clothing (see Section 8) needs to be determined for each incident by a competent fire fighting safety professional. Water used for fire suppression and cooling may become contaminated. Discharge to sewer system(s) or environment may be restricted, requiring containment and proper disposal of water.

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6. ACCIDENTAL RELEASE MEASURES

Sulfate of Potash Magnesia is naturally-occurring crop nutrient and plant food; however large spills can harm or kill vegetation.

- Stay upwind and away from spill (dust hazard).
- Wear appropriated protective equipment, including respiratory protection, as conditions warrant (see Section 8).
- Prevent spilled material from entering sewers, storm drains, other unauthorized treatment drainage systems, and natural waterways.
- Notify appropriate federal, state and local agencies as may be required.
- Minimized dust generation.
- Sweep up and package appropriately for disposal.

7. HANDLING AND STORAGE

Handling:	The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 2 and 8). Wash thoroughly after handling. Wash contaminated clothing or shoes. Use good personal hygiene practices.
Storage:	Stable under normal storage conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:	If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required.

Personal Protective Equipment (PPE)	
Respiratory:	A NIOSH approved air purifying respirator with a type 95 (R or P) particulate filter may be used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2). Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed if workplace conditions warrant a respirator.

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Personal Protective Equipment (PPE)	
Skin:	The use of cloth or leather work gloves is advised to prevent skin contact, possible irritation and absorption (see glove manufacture literature for information on permeability)
Eye/Face:	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended.
Other PPE:	A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C(68°F) and 760 mm Hg (latm).

Flash Point	Not applicable
Flammable/ Explosive Limits (%):	LEL/UEL: Not applicable
Autoignition Temperature:	Not applicable
Appearance:	White to gray, crystalline to granular
Physical State:	Crystalline to granular solid
Odor:	None
Molecular Weight of Pure Material:	415 (for potassium magnesium sulfate)
pH:	7 to 9 in 5% solution
Vapor Pressure (mm Hg):	Not applicable
Vapor Density (air=1):	Not applicable
Boiling Point:	Not available
Freezing/Melting Point:	972°C (1700°F)
Solubility in Water:	Approximately 24.4% @ 77°F (25°C)
Specific Gravity:	2.81 – 2.85
Volatility:	No data available
Bulk Density:	Loose – 88 to 99 lbs/ft^3 (1330 – 1505 kg/m^3)

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10. STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal conditions of storage and handling.
Conditions to Avoid:	Mildly corrosive to metals in the presence of moisture.
Incompatible Materials:	Avoid contact with hot nitric acid, may cause evolution of toxicnitrosyl chloride. Contact with other strong acids may produce irritating hydrogen chloride gas. NaCl reacts with most noble metals, such as iron or steel, building material (such as cement), bromide, or trifluoride. A potentially explosive reaction may occur if NaCl is mixed with dichloramaleic anhydride and urea. Electrolysis of mixtures containing NaCl and nitrogen compounds may form explosive nitrogentrichloride.
Hazardous Decomposition Products:	Combustion can yield oxides of sulfur when heated above 1000°F (537°C).
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Potassium Magnesium Sulfate	No LD50 or LC50 data located for potassium magnesium sulfate. No eye or skin irritation data located for potassium magnesium sulfate.
Sodium Chloride:	Rat, oral, LD50 =3 g/kg; Mouse, oral, LD50 = 4g/kg Rat, LC50 > 42 g/m^3 / 1hour Rabbit, Eye: 100 mg/24 hour, moderate irritant Rabbit, Eye: 500 mg/ 24 hour, mild irritant No skin irritation data located for sodium chloride
No definitive information available for this product on skin irritation, carcinogenicity, mutagenicity, target organs or development toxicity.	

12. ECOLOGICAL INFORMATION

Ecotoxicity:	When dissolved in water, sodium chloride creates an elevated level of salinity that may be harmful to fresh water aquatic species and to plants that are not salt-tolerant.
BOD and COD:	No data found.

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13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not an RCRA "listed" or "characteristic" hazardous waste. Contamination may subject it to hazardous waste regulations. Properly characterize all waste materials. Consult State and local regulations regarding the proper disposal of this material.

14. TRANSPORT INFORMATION

Hazard Class or Division:	Not listed in the hazardous materials shipping regulations (49 CFR, Table 172.101) by the U.S. Department of Transportation, or in the Transport of Dangerous Goods (TDG) Regulations Canada.

15. REGULATORY INFORMATION

CERCLA:	Not Listed
RCRA 261.33:	Not Listed
SARA TITLE III: (Exemptions at 40 CFR, Part 370 may apply for agricultural use, or quantities of less than 10,000 pounds on-site)	**SARA 313:** No **SARA 311/312:** Acute: Yes; Chronic: No; Fire: No; Pressure: No; Reactivity: No **SARA 302/304:** No
TSCA:	Sodium Chloride is listed in the TSCA Inventory. Potassium Magnesium Sulfate (langbeinite) is a naturally-occurring chemical substance processed only by mechanical means that is exempted from TSCA listing per 40 CFR, PART 710.26(d).
Proposition 65: (CA Health & Safety Code Section 25249.5)	Warning: This product contains substances that are known to the State of California to cause cancer and/or reproductive harm.
NTP, IARC, OSHA:	None of the ingredients in this product has been identified as carcinogens by NTP, IARC, or OSHA.
Canada DSL:	Sodium chloride is listed on the Domestic Substances List (DSL). As potassium magnesium sulfate (langbeinite) is a naturally occurring substance processed only by mechanical means, it is considered to be on the DSL per the Canadian Environmental Protection Act (CEPA), New Substances Notification Regulations, Section 3.
Canada NDSL:	No
WHMIS:	This MSDS has been prepared according to the hazard criteria of the Controlled Product Regulations (CPR) and the MSDS contains all of the information required by the CPR.

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16. OTHER INFORMATION

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