



MSDS - Potassium Magnesium Sulfate

April 9, 2009

Section 1. Product Information

Product Name: Sulfate of Potash

Chemical Name: Potassium Magnesium Sulfate

Chemical Family: Inorganic Salt

Synonyms/Brand: SOP Dipotassium Salt

Chemical Formula: K_2SO_4

Primary Use: Crop nutrient, industrial application

Distributed by Pestell Minerals & Ingredients, New Hamburg, ON Canada

24 Hour Emergency Telephone (Canutec): 613-996-6666

Section 2. Physical/Chemical Properties

Appearance: Solid, fine white and pink crystals

Flash Point: Not applicable

Flammable/Explosive Limits: Not applicable

Auto Ignition Temperature: Not applicable

Molecular Weight: 415 for Potassium Magnesium Sulfate

pH: 7.0 in a 5% solution

Vapor Pressure: Not applicable

Vapor Density: Not applicable

Boiling Point: Not available

Melting Point: 1066.7°C (1952°F)

Freezing Point: 972°C (1700°F)

Specific Gravity: 2.8

Bulk Density: Loose - 90 to 94 lbs/ft³ (1442-1506 kg/m³)

Section 3. Information on Ingredients

Potassium Magnesium Sulfate: 97-98% by Weight CAS No. 14977-37-8

Sodium Chloride: 2-3.5% by Weight CAS No. 7647-14-5

Exposure Guidelines not established

Hazards Identification

Potential Health Effects

Eye: Contact may cause mild eye irritation including stinging, watering and redness.

Skin: Contact may cause mild irritation including redness and burning sensation. No harmful effects from skin absorption have been reported.

Inhalation: No information available

Ingestion: Low to moderate degree of toxicity by ingestion

Signs and Symptoms: Effects of overexposure may include nausea, vomiting, diarrhea, abdominal cramping, dehydration and hypertension. Repeated over exposure to dusts may result in irritation of the respiratory tract, coughing and shortness of breath.

Cancer: Inadequate data available to evaluate the cancer hazard of this material.

Target Organs: No data available

Developmental: Inadequate data available for this material

Pre-existing Medical Conditions: High blood pressure (hypertension) may be aggravated by exposure.

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 3). Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is 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.

Skin: The use of cloth or leather work gloves is advised to prevent skin contact, possible irritation and absorption (see glove manufacturer 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.

Section 4. Fire Fighting Measures

Flash Point: Not applicable

OSHA Flammability Class: Not applicable

LEL-LUL: Not applicable

Auto Ignition Temperature: Not applicable

Unusual Fire & Explosion Hazards: No unusual fire or explosion hazards are expected

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 or the environment may be restricted, requiring containment and proper disposal of water.

Section 5. 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. Avoid contact with hot nitric acid - may cause evolution of toxic nitrosyl chloride. Contact with other strong acids may produce irritating hydrogen chloride gas. NaCl can react with most noble metals, such as iron or steel, building materials (such as cement), bromine, or trifluoride. A potentially explosive reaction may occur if NaCl is mixed with dichloromaleic anhydride and urea. Electrolysis of mixtures containing CaCl and nitrogen compounds may form explosive nitrogen trichloride.

Corrosivity: Similar to salt. Mildly corrosive to metals in the presence of moisture.

Hazardous Decomposition Products: Combustion can yield oxides of sulfur when heated above 1000°F (538°).

Hazardous Polymerization: Will not occur

Section 6. Toxicological Information

Potassium Magnesium Sulfate: (Rat/Oral) LD50: 2000 mg/kg

No eye or skin irritation data located for potassium sulfate

No carcinogenicity, mutagenicity, target organ or developmental toxicity data located for potassium magnesium sulfate.

Sodium Chloride (Rat/Oral): LD50 3 g/kg Mouse: Ld50 4 g/kg

Rat (LC50): >42 g/m³/1 hour Rabbit, eye: 100 mg/24 hour, moderate irritant

Rabbit, eye: 500 mg/24, mild irritant

No carcinogenicity, mutagenicity, target organ or developmental toxicity data located for sodium chloride.

No definitive information available for this product on carcinogenicity, mutagenicity, target organs or developmental toxicity.

Section 7. Accidental Release Measures

Sulfate of Potash is a crop nutrient, feed ingredient and plant food. However, large spills can harm or kill vegetation.

- Stay upwind and away from spills (dust hazard)
- Wear appropriate protective equipment, including respiratory protection, as conditions warrant (See Section 7)
- 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
- Minimize dust generation
- Sweep up and package appropriately for disposal

Handling and Storage

Handling: The use of respiratory protection is advised when concentrations exceed any established exposure limits. Wash thoroughly after handling. Wash contaminated clothing or shoes. Use good personal hygiene practices.

Storage: Keep container tightly closed. Use and store this material in cool, dry well ventilated areas. Store only in approved containers. Keep away from any incompatible products. Protect container against physical damage.

Exposure Controls/Personal Protection

Engineering Controls: If current ventilation practices are not adequate to maintain airborne

concentration levels below the established exposure limits additional ventilation or exhaust systems may be required.

Section 8. First Aid Measures

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing and cleanse affected area thoroughly by washing with mild soap and water. If irritation or redness develops and persists seek medical attention.

Inhalation: 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 airways and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion: If swallowed, seek emergency medical attention. 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 than 1/2 cup in an adult) preferably under direction from a physician or poison center. If victim is drowsy or unconscious and vomiting, place on left side with the head down and do not give anything by mouth. If possible, do not leave victim unattended and observe closely for adequacy of breathing.

Section 9. 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.

Potassium Sulfate: Ceriodaphnia dubia LC50 - >63.6 mg/l

Daphnia magna LC50 - 3,114,000 - 10,000,000 ug/l

Daphnia pules EC50 - 556.40 mM

Pimephales promelas LD50 - 6,020,000 - 10,000,000 ug/l

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.

Transportation Information: Not listed in the hazardous materials shipping regulations (49 CFR, Table 172.101) by US Department of Transportation, in the Transport of Dangerous Goods (TDG) Regulations Canada.

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