

**IMC**

# MATERIAL SAFETY DATA SHEET

## Sulfate of Potash



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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name:</b>	Sulfate of Potash
<b>Chemical Name:</b>	Potassium Sulfate
<b>Chemical Family:</b>	Inorganic Salt
<b>Synonyms/Brands:</b>	SOP, Dipotassium Salt, 0-0-50
<b>Chemical Formula:</b>	$K_2SO_4$
<b>Primary Use:</b>	Crop Nutrient; Industrial Applications
<b>Responsible Party:</b>	IMC USA Inc. 100 South Saunders Road, Suite 300 Lake Forest, Illinois 60045
<b>Non-Emergency Technical Contact:</b>	8:00am – 4:00pm Central Time, Mon - Fri: 1-800-323-5523 or 847-739-1200

### EMERGENCY OVERVIEW

#### 24 Hour Emergency Telephone Number:

For Chemical Emergencies:

Spill, Leak, Fire or Accident

Call CHEMTREC

North America: (800)424-9300

Others: (703)527-3887 (collect)

<b>Health Hazards:</b>	Irritant. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Potassium sulfate is generally recognized as safe (GRAS) (21 CFR 582.1643) when used in accordance with good manufacturing practice.
<b>Physical Hazards:</b>	None expected
<b>Physical Form:</b>	Solid
<b>Appearance:</b>	Brown granular or white crystals
<b>Odor:</b>	None

#### NFPA HAZARD CLASS

Health:	1 (Slight)
Flammability:	0 (Least)
Instability:	0 (Least)
Special Hazard:	None

#### HMIS HAZARD CLASS

Health:	1 (Slight)
Flammability:	0 (Least)
Reactivity:	0 (Least)
PPE:	Section 8

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	% Weight	Exposure Guideline		
		Limits	Agency	Type
Potassium Sulfate CAS No. 7778-80-5	92.5 – 99	NE	OSHA ACGIH	All
Sodium Chloride CAS No. 7647-14-5	0.5 – 5	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 <sup>3</sup>	ACGIH	TWA-Inhalable
	3 mg/m <sup>3</sup>	ACGIH	TWA-Respirable
Particulates Not Otherwise Regulated (PNOR)	15 mg/m <sup>3</sup>	OSHA	TWA-Total Dust
	5 mg/m <sup>3</sup>	OSHA	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 IDENTIFICATION

#### POTENTIAL HEALTH EFFECTS

<b>Eye:</b>	Contact may cause mild eye irritation including stinging, watering and redness.
<b>Skin:</b>	Contact may cause mild irritation including redness and a burning sensation. No harmful effects from skin absorption have been reported.
<b>Inhalation (Breathing):</b>	No information available. Studies by other exposure routes suggest a low degree of hazard by inhalation.
<b>Ingestion (Swallowing):</b>	Low to moderate degree of toxicity by ingestion.
<b>Signs and Symptoms:</b>	Effects of overexposure may include irritation of the nose, throat and digestive tract, nausea, vomiting, diarrhea, abdominal cramping, irregular heartbeats (arrhythmia), dehydration, and hypertension. Repeated overexposure to dusts may result in irritation of the respiratory tract, coughing and shortness of breath.
<b>Cancer:</b>	Inadequate data available to evaluate the cancer hazard of this material.
<b>Target Organs:</b>	No data available.
<b>Developmental:</b>	Inadequate data available for this material.
<b>Other Comments:</b>	None
<b>Pre-Existing Medical Conditions:</b>	High blood pressure (hypertension) and respiratory (asthma-like) disorders.





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### 4. FIRST AID MEASURES

<b>Eye:</b>	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.
<b>Skin:</b>	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.
<b>Inhalation (Breathing):</b>	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.
<b>Ingestion (Swallowing):</b>	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 $\frac{1}{2}$ 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.
<b>Note to Physicians:</b>	None known

### 5. FIRE FIGHTING MEASURES

<b>Flammable Properties:</b>	<b>This product is non-flammable</b> Flash Point—Not applicable OSHA Flammability Class—Not applicable LEL/UEL—Not applicable Autoignition Temperature—Not applicable
<b>Unusual Fire &amp; Explosion Hazards:</b>	Product dust may become airborne during a fire presenting a potential inhalation hazard (see Section 1). Fire may create a danger of inundation during structural collapse (see Section 4). Toxic gases may be released during a fire situation (see Section 10).
<b>Extinguishing Media:</b>	Use extinguishing agent suitable for type of surrounding fire.
<b>Fire Fighting Instructions:</b>	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 & cooling can be contaminated. Discharge to sewer system(s) or the environment may be restricted, requiring containment & proper disposal of water.





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### 6. ACCIDENTAL RELEASE MEASURES

Sulfate of Potash is a crop nutrient and plant food; however, large spills can harm or kill vegetation.

- Stay upwind and away from spill (dust hazard).
- Wear appropriate 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.
- Minimize dust generation.
- Sweep up and place in container for use or disposal. Refer to Disposal Considerations (Section 13) and Regulatory Information (Section 15).

### 7. HANDLING AND STORAGE

**Handling:**

The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 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 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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<b>Personal Protective Equipment (PPE)</b>	
<b>Skin:</b>	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).
<b>Eye/Face:</b>	Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended.
<b>Other PPE:</b>	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 (1 atm).

<b>Flash Point:</b>	Not applicable
<b>Flammable/ Explosive Limits(%):</b>	LEL/UEL: Not applicable
<b>Autoignition Temperature:</b>	Not applicable
<b>Appearance:</b>	Brown granular or white crystals
<b>Physical State:</b>	Crystalline to granular solid
<b>Odor:</b>	None
<b>Molecular Weight of Pure Material:</b>	174.26
<b>pH:</b>	7 – 9 in a 5% solution
<b>Vapor Pressure (mm Hg):</b>	Not applicable
<b>Vapor Density (air=1):</b>	Not applicable
<b>Boiling Point:</b>	Not available
<b>Melting Point:</b>	1066.7°C (1952°F)
<b>Solubility in Water:</b>	1 pound per gallon
<b>Specific Gravity:</b>	2.66
<b>Volatility:</b>	0
<b>Bulk Density:</b>	75 – 95 lbs/ft <sup>3</sup> (1201 – 1522 kg/m <sup>3</sup> )



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#### 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable under normal conditions of storage and handling.
<b>Conditions to Avoid:</b>	None known.
<b>Incompatible Materials:</b>	Sodium chloride, a component of this material, reacts 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 NaCl and nitrogen compounds may form explosive nitrogen trichloride.
<b>Hazardous Decomposition Products:</b>	Combustion can yield oxides of sulfur when heated above 1952°F (1066°C).
<b>Corrosivity:</b>	Similar to salt. May be mildly corrosive to metals in the presence of moisture.
<b>Hazardous Polymerization:</b>	Will not occur.

#### 11. TOXICOLOGICAL INFORMATION

<b>Potassium Sulfate</b>	Rat oral LD50 – 6600 mg/kg No eye or skin irritation data located for potassium sulfate No carcinogenicity, mutagenicity, target organ, or developmental toxicity data located for potassium sulfate.
<b>Sodium Chloride</b>	Rat oral LD50 – 3 g/kg; Mouse LD50 = 4 g/kg Rat LC50 > 42 g/m <sup>3</sup> / 1hour Rabbit, Eye: 100 mg/24 hour, moderate irritant Rabbit, Eye: 500 mg/24 hour, 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.	

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### 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	When dissolved in water, sodium chloride creates an elevated level of salinity that may be harmful to fresh water aquatic species & to plants that are not salt-tolerant.
	<b>Potassium Sulfate:</b> Ceriodaphnia dubia LC50 - <620,000 – 780,000 ug/l Daphnia magna LC50 – 580,000 – 1,170,000 ug/l Pimephales promelas LD50 – 510,000 – 990,000 ug/l <b>Sodium Chloride:</b> Ceriodaphnia dubia LC50 – 280,000 – 3,540,000 ug/l Daphnia magna LC50 – 3,114,000 – 10,000,000 ug/l Daphnia pulex EC50 – 56.40 mM Pimephales promelas LD50 – 6,020,000 – 10,000,000 ug/l
<b>BOD and COD:</b>	No data found.

### 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

<b>Hazard Class or Division:</b>	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.
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### 15. REGULATORY INFORMATION

<b>CERCLA:</b>	Not listed
<b>RCRA 261.33:</b>	Not listed
<b>SARA Title III:</b> (Exemptions at 40 CFR, Part 370 may apply for agricultural use, or quantities of less than 10,000 pounds on-site)	<b>SARA 313:</b> No
	<b>SARA 311/312:</b> Acute: Yes; Chronic: No; Fire: No; Pressure: No; Reactivity: No
	<b>SARA 302/304:</b> No



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<b>TSCA:</b>	Potassium sulfate and sodium chloride are listed in the TSCA Inventory.
<b>Proposition 65:</b> (CA Health & Safety Code Section 25249.5)	None
<b>NTP, IARC, OSHA:</b>	None of the ingredients in this product has been identified as a carcinogen by NTP, IARC, or OSHA.
<b>Canada DSL:</b>	Potassium sulfate and sodium chloride are listed on the Domestic Substances List (DSL).
<b>Canada NDSL:</b>	No
<b>WHMIS:</b>	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.

### 16. OTHER INFORMATION

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.** This information and product are furnished on the condition that the person receiving them shall make their own determination as to suitability of the product for their particular purpose and on the condition that they assume the risk of their use thereof.

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