

School Material Safety Data Sheet

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POTASSIUM SULFATE

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SECTION 1. INTRODUCTORY INFORMATION

MATERIAL NAME AND FORMULA: POTASSIUM SULFATE; K_2SO_4

SYNONYMS: Dipotassium Sulfate

CAS NUMBER: 7778-80-5

DOT CLASSIFICATION: Not Found

MANUFACTURERS: Always request Material Safety Data Sheets from your chemical supplier. These should indicate the manufacturer of the substance and include an emergency phone number to call. The Manufacturers section of this book contains a listing of some of the larger manufacturers and available emergency numbers.

DESCRIPTION: Available as white or creamy white free-flowing, hard crystals or granular powder. It has no odor but has a bitter saline taste.

PRELIMINARY INFORMATION: Potassium sulfate is a nonflammable solid material that can be irritating to body tissues. It is a chemical reagent with a variety of applications in a chemistry lab. The material presents few hazards if used with care and reasonable precautions are taken.



SECTION 2. USE AND STORAGE INFORMATION

-- PRELIMINARY PLANNING CONSIDERATIONS --

- Safety glasses or goggles and protective clothing (rubberized apron, etc.) should be worn for all experiments.
- Be sure eyewash station and safety shower are in good working order and readily available.
- Always provide for safe disposal of all chemical waste generated in the lab. Check applicable regulations prior to use.
- Rubber gloves are recommended as needed to minimize skin contact when working with this material.

-- USAGE PRECAUTIONS AND PROCEDURES --

- READ THE LABEL and follow all precautions.
- Maintain good housekeeping practices to avoid unintentional mixing with incompatible materials and accumulation of dust.
- For safety, contact lenses should not be worn in the laboratory; soft lenses may absorb irritants and all lenses may concentrate them. Particles can also adhere to contact lenses and cause corneal damage.
- After working with this material, always wash hands and face before eating, drinking, or smoking.
- Avoid creating airborne dust conditions.
- Minimize contact with skin and clothing.
- Prevent eye contact. Do not ingest or taste.
- Avoid inhalation of dust or solution mist.

-- ADDITIONAL INFORMATION --

- K_2SO_4 does not polymerize. This material is stable at room temperature under normal conditions.
- Incompatible with active metals such as aluminum or magnesium. A violent explosion occurs when potassium sulfate is melted with aluminum.
- Sometimes used as a fertilizer on chloride-sensitive crops such as citrus trees and tobacco.

-- PREFERRED STORAGE LOCATION AND METHODS --

- Storage area should be cool and well ventilated. Containers should be tightly closed.
- Do not store chemicals alphabetically by name; store by chemical family instead, to keep compatibles together.
- All chemical containers should be protected from physical damage and kept out of direct sunlight.
- Smoking should not be permitted in areas where chemicals are stored.
- Store with compatible materials on sturdy shelving.

SECTION 3. SPILLS AND DISPOSAL PROCEDURES

IF MATERIAL IS SPILLED:

- Ventilate area of spill. Cleanup personnel should have protection against inhalation of dust or skin contact.
- For liquid (solution) spills, absorb on paper toweling or use an inert solid absorbent (vermiculite, dry sand, etc.). Transfer to an appropriate container (with secure lid) for disposal in accordance with existing regulations. Dike with inert absorbent material, as needed, to contain and limit spill area.
- Sweep, vacuum, or scoop up spilled solid, avoiding generation of dust. Place in a suitable container (with secure lid) for later disposal.
- Avoid creating airborne dust conditions.
- Wash away residual material with much water.

DISPOSAL OF SMALL QUANTITIES:

- Bury waste in an approved landfill, regulations permitting.
- If the above method is not practical, feasible, or in accord with existing regulations, contact your supplier or a licensed disposal contractor for specific treatment/disposal procedures.

DISPOSAL OF LARGER AMOUNTS: Contact a licensed disposal company.

FOLLOW ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS FOR ALL WASTE DISPOSAL

SECTION 4: HEALTH HAZARDS

Potassium sulfate has not been identified as a known or suspected carcinogen by the NTP, IARC, or OSHA.

No TLV established.

- Guinea Pig, Subcutaneous, LDLo: 3000 mg/kg.
- Inhalation of dust may cause irritation of nose, throat, and lungs.
- Repeated or prolonged skin contact may result in irritation.
- Particulate or solution mist in the eyes can be irritating; prolonged eye contact may cause redness or conjunctivitis.
- Ingestion of large amounts (100 g) may cause gastrointestinal irritation.
- Chronic effects: Unknown.

SECTION 5: FIRST AID PROCEDURES

Eye contact:

- Flush eyes promptly with plenty of running water for at least 15 minutes, including under the eyelids.
- Get prompt medical attention.*

Skin contact:

- Remove contaminated clothing promptly.
- Flush affected area with large amounts of water. Wash exposed areas of skin with soap and water.
- Contact medical personnel.*

Inhalation:

- Remove victim to fresh air; restore and/or support breathing as necessary. Get prompt medical attention.*

Ingestion:

- Get prompt medical attention.*
- Rinse victim's mouth with water.
- Give several glasses of water to drink to dilute. Induce vomiting -- but ONLY if victim is conscious and alert. Never give anything by mouth to a person who is unconscious or convulsing.

* Get medical help (in school, paramedic, or community) for further treatment, observation, and support after first aid.

SECTION 6: FIRE PROCEDURES AND DATA

- Potassium sulfate is a nonflammable solid.
- Extinguishing media: Use media appropriate to surrounding fire conditions.
- For major fires, or if large quantities of this material are involved, fire fighters should wear appropriate protective clothing and use respiratory protection. Self-contained breathing apparatus is recommended.
- A water spray may be used to cool fire-exposed containers and disperse vapors.

THERMAL DECOMPOSITION PRODUCTS: Oxides of sulfur (toxic)

FLASH POINT AND METHOD(S) ... Nonflammable

AUTOIGNITION TEMPERATURE ... Not Applicable

FLAMMABILITY LIMITS IN AIR (vol. %) : Not Applicable

SECTION 7: PHYSICAL DATA

BOILING POINT (@ 1 atm) ... 3038°F (1670°C)

SPECIFIC GRAVITY (H₂O = 1) ... 2.6

VAPOR PRESSURE (@ 20°C, mm Hg) ... Not Found

MELTING POINT ... 1961.6°F (1072°C)

SOLUBILITY IN WATER (@ 25°C) ... 12 g/100g H₂O

FORMULA WEIGHT ... 174.3

pH OF AQUEOUS SOLUTION ... ca 7

DATA SOURCES: Genium's Industrial MSDS #191 (6/86) and references 1, 4, 5, 7, 9, 10, 34, 82, 84, 506, 509-11.
(see glossary for titles)

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18

Medical Review