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School Materials Safety Manual:

No. 318 Potassium Chloride Issued 10/92

♦ SECTION 1 INTRODUCTION

Material Potassium Chloride, ca 100%; contaminants may include magnesium salts

Synonyms chloride of potash, Chloropotassuril, Chlorvescent, dipotassium dichloride, Enseal, K-Contin, Kalcorid, Kalitabs, Kaon-Cl, Klotrix, muriate of potash, natural sylvite, Peter-Kal, potassium monochloride, potassium muriate, Potavescent, Rekawan, Repone K, Slow-K tablets, Pan-K, tripotassium trichloride

Chemical Formula KCl

CAS Number 7447-40-7

DOT Classification *Not* listed as a Hazardous Material for Transportation (49 CFR 172.101)

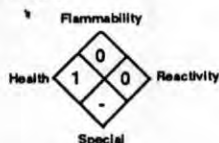
EPA Classification *Not* listed as a RCRA Hazardous Waste (40 CFR 261.33), a CERCLA Hazardous Substance (40 CFR 302.4), a SARA Extremely Hazardous Substance (40 CFR 355), or a SARA Toxic Chemical (40 CFR 372.65)

OSHA Classification *Not* listed as an Air Contaminant (29 CFR 1910.1000, Subpart Z)

NFPA Hazard Rating *Not* found

Genium Hazard Rating

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Minimum



HMIS

H 1
F 0
R 0

Description White crystals or crystalline powder; odorless. Obtained from the mineral sylvite and used as a lab reagent, a salt substitute, a plant nutrient, a food additive, and a source of potassium salts; in photography, fertilizer, pharmaceutical preparations, spectroscopy, and buffer solutions.

Overview Potassium chloride is most commonly used in the school environment as a lab reagent in the chemistry lab. It presents few hazards if used with care and reasonable precautions are taken.

Manufacturer Always request an up-to-date MSDS from your chemical supplier. That sheet should include the manufacturer and their emergency phone numbers. This *Manual's* Resources/Manufacturers Index lists some larger manufacturers and available emergency phone numbers.

♦ SECTION 2 USE AND STORAGE DATA

Preliminary Planning Considerations *Plan and provide for safe disposal of all school-generated chemical waste.* Check applicable regulations prior to use. Whenever possible, substitute less hazardous materials. Investigate the feasibility of microscale chemistry experiments to reduce the quantity required and disposal concerns. Contact lens use when handling chemical materials is controversial. In some cases, soft lenses can actually protect eyes from chemicals. In other cases, chemical entrapment is presumed a possible hazard. Particles adhering to contact lens surfaces can cause corneal damage. For safety, wear safety glasses or goggles and appropriate protective clothing (e.g., gloves, lab coats) to work with potassium chloride. Employees and students should know the location of eyewash and shower facilities near chemical use areas. Check and document that

eyewash stations and safety showers are working properly.

Usage Precautions and Procedure Before using, *read this material's container label* and follow all precautions. Do not smoke in usage or storage areas. Practice good housekeeping to avoid unintentionally mixing incompatibles. Do not allow chemical residue or dust buildup in lab or work areas. Keep potassium chloride away from notebooks, textbooks, and personal belongings to avoid transporting chemical residues from the lab/work area. After working with chemical materials, and before eating, drinking, or smoking, always wash hands and face. Remove and launder contaminated clothing before reusing.

Additional Data Potassium chloride is stable at room temperature under normal handling and storage conditions. It does not polymerize. Its incompatibilities include bromine trifluoride (BrF_3); and sulfuric acid (H_2SO_4) + potassium permanganate (KMnO_4); explosive reactions occur.

Preferred Storage Location and Methods Store in tightly closed and properly labeled containers in a cool, well-ventilated area out of direct sunlight and away from incompatibles. To separate incompatible chemicals, store by chemical family, not by alphabetical name. Protect all chemical containers from physical damage. Prohibit smoking in chemical storage areas. Purchase amounts sufficient for one year's use or less.

♦ SECTION 3 SPILL/DISPOSAL PROCEDURES

If Spilled Ventilate spill area. Promptly and thoroughly clean up spilled material. Cleanup personnel should protect against dust inhalation and skin or eye contact. For liquid (solution) spills, cover with an inert solid absorbent (vermiculite, dry sand, etc.) and scoop into appropriate containers (with secure lid) for disposal in accordance with existing regulations. As needed, dike spill area with inert absorbent material to contain spill. For dry spills, carefully collect spilled material and scoop into secure disposal or reclamation containers. Avoid creating airborne dust conditions. Vacuum (with appropriate filter) or wet mop to minimize dust dispersion.

Disposal of Small Quantities *Handle emptied containers carefully since residues may remain.* Always check regulations before disposal. Investigate recycling or reclamation rather than landfill disposal. If these methods are 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 your supplier or a licensed disposal company.

Follow all applicable local, state, and Federal regulations for all waste disposal.

♦ SECTION 4 HEALTH HAZARDS

Adverse health effects are not expected from routine exposure to potassium chloride in the chemistry lab. Potassium chloride is a human poison by ingestion. However, it is used as a nutrient and/or dietary supplement, and ingestion of large quantities is necessary to cause adverse

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effects. Eye contact may cause mild irritation.

1991 OSHA PEL 8-hr TWA: None established

1992-93 ACGIH TLV 8-hr TWA: None established

1990 NIOSH REL 10-hr TWA: None established

1985-6 Toxicity Data Woman, oral, TD_{Lo} : 60 mg/kg/day produced gastrointestinal irritation (nausea or vomiting) and changes in blood clotting factors. Rat, oral, LD_{50} : 2600 mg/kg; Rabbit, eye: 500 mg/24 hr produced mild irritation.

Carcinogenicity Not listed by the IARC, NTP, or OSHA

Acute Effects Ingestion of large doses can cause gastrointestinal irritation, purging, paresthesias (prickling, tingling sensation), flaccid paralysis (paralysis in which muscle tone is lacking), weakness, cardiac arrhythmias, and circulatory disturbances. Eye contact may be irritating.

Chronic Effects None reported

neither acidic or basic)

Molecular Weight 74.55

Density 1.98; of saturated aqueous solution at 59 °F (15 °C): 1.172

* Hydrochloric acid (HCl), sodium (Na), or magnesium chlorides ($MgCl_2$) diminish potassium chloride's solubility in water.

♦ SECTION 5 FIRST AID PROCEDURES

Eye Contact Promptly flush eyes with plenty of running water for at least 15 min, including under eyelids. Get prompt medical attention.

Skin Contact After flushing with large amounts of water, wash exposed areas with soap and water. For reddened or blistered skin, get prompt medical attention.

Inhalation Remove victim from exposure to fresh air and support breathing as necessary.

Ingestion Contact a poison control center,* especially if large amounts are ingested. Never give anything by mouth to an unconscious or convulsing person. Unless otherwise advised, give victim 1 to 2 glasses of water or milk to drink and induce vomiting with syrup of ipecac. Get *prompt* medical attention.

Get proper in-school, paramedic, or community medical attention and support.

* See listings on pages 2-8 of *Resources/Manufacturers Index*.

♦ SECTION 6 FIRE PROCEDURES AND DATA

Fire Hazards For fires involving large quantities, firefighters should wear appropriate protective clothing and respirators. Because fire may produce toxic thermal decomposition products, a self-contained breathing apparatus (SCBA) is recommended.

Flash Point and Method Noncombustible

Autoignition Temperature None reported

Flammability Limits in Air (vol. %) None reported

Hazardous Decomposition Products Thermal oxidative decomposition of potassium chloride can produce toxic fumes of potassium oxide (K_2O) and chloride (Cl^-).

Extinguishing Media Because potassium chloride is noncombustible, use extinguishing media appropriate to the surrounding fire.

♦ SECTION 7 PHYSICAL DATA

Melting Point 1423 °F (773 °C); sublimates at 2732 °F (1500 °C)

Solubility in Water* Soluble: 1 g dissolves in 2.8 mL water, 1.8 mL boiling water

Other Solubilities Glycerin, alkali, alcohol (slightly); in soluble in ether and acetone

pH of saturated aqueous solution About 7 (i.e., neutral -

References 101, 124, 126, 132, 136, 139, 140, 149, 159, 530; Genium's *Material Safety Data Sheets Collection*, No. 246 (11/88)

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