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School Materials Safety Manual:

No. 241 Potassium Iodide
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♦ SECTION 1 INTRODUCTION

Material Potassium Iodide, ca 100%

Chemical Formula KI

CAS Number 7681-11-0

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)

Synonyms Knollide, potide

NFPA Hazard Rating Not found

Genium Hazard Rating

4 = Extreme

3 = High

2 = Moderate

1 = Slight

0 = Minimum



Description Colorless or white cubical crystals, white granules, or powder. Dry potassium iodide is slightly deliquescent in moist air; prolonged air exposure causes potassium iodide to yellow because of the liberation of iodine. Light and moisture accelerate this decomposition.

Overview The most common area of use is the chemistry lab. KI is used to manufacture photographic emulsions and in animal and poultry feeds at 10- to 30-ppm concentrations. It may also be found in table salt as an iodine source and in some drinking water. Potassium iodide presents few hazards if used with care and reasonable precautions.

Manufacturer Always request an up-to-date MSDS from your chemical supplier. That sheet should identify the substance's manufacturer and include an emergency phone number. 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. For safety, do not wear contact lenses in the lab: soft lenses may absorb, and all lenses concentrate, irritants. Particles adhering to contact lens surfaces can cause corneal damage. Wear rubber gloves to minimize skin contact. Employees and students should know the location of eye-wash and shower facilities near where this material is used. Be sure that eyewash stations and safety showers are in good working order.

Usage Precautions and Procedure Before using, read this material's container label and follow all precautions. Do not let KI contact eyes, skin, or clothing. Avoid inhaling the dust from this material. Do not taste or swallow this substance. Practice good housekeeping to avoid unintentionally mixing incompatibles. Do not allow chemical residue or dust buildup in lab or work areas. Wear safety

glasses or goggles and appropriate protective clothing to work with this substance. Keep this material 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 iodide is stable at room temperature under normal handling and storage conditions. It does not polymerize. Its incompatibilities include salts of alkaloids, chloral hydrate, calomel (mercurous chloride), potassium chlorate, metallic salts, tartaric and other acids, bromine trifluoride, chlorine trifluoride, and fluorine perchlorate.

Preferred Storage Location and Methods Store potassium iodide in closed containers in a cool, dry, well-ventilated area away from all incompatibles. Protect these containers from physical damage. To separate incompatible chemicals, store by chemical family, not by alphabetical name. Purchase only amounts equivalent to one year's needs, if at all. Prohibit smoking in chemical storage areas.

♦ SECTION 3 SPILL/DISPOSAL PROCEDURES

If Spilled Ventilate spill area. Clean up spilled material promptly and thoroughly. Cleanup personnel should protect against skin or eye contact and dust inhalation. Shovel, scoop, or vacuum this material into appropriate disposal containers (with a secure lid) in accordance with existing regulations. Avoid creating dust conditions. Sweep, vacuum (with an appropriate filter), or wet mop to minimize dust dispersion. For liquid (solution) spills, cover material with an inert, solid absorbent (vermiculite, dry sand, etc.) and scoop it into an appropriate container (with a secure lid) for disposal in accordance with existing regulations.

Disposal of Small Quantities Handle emptied containers carefully since residues may remain. Investigate recycling, reclamation, or destruction to a less hazardous material rather than disposal of untreated waste to a landfill. Check regulations before disposal is necessary. If this 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 your supplier or a licensed disposal company.

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

♦ SECTION 4 HEALTH HAZARDS

Summary Potassium iodide can irritate the skin, eyes, and mucous membranes lining the respiratory tract, depending upon the exposure's intensity and duration. Systemic poisoning does not appear associated with occupational exposure. Since iodine salts can cause significant deformity, illness, and death to a fetus, counsel and appropriately protect pregnant personnel. Animal experiments indicate that potassium iodide is highly toxic via in-

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travenous administration and moderately toxic via oral and intraperitoneal administration. These routes are unlikely, however, for routine school usage.

1989-90 ACGIH TLV None established

1988 NIOSH REL None established

1989 OSHA PEL None established

1985-6 Toxicity Data Mouse, oral, LD₅₀: 1862 mg/kg;
Rat, intravenous, LD₅₀: 120 mg/kg

Carcinogenicity Not listed by the NTP, IARC, or OSHA
Acute Effects Minimal irritation of the skin, eyes, and mucous membranes.

Chronic Effects May cause iodism, a mild toxicity characterized by salivation, runny eyes and nose, laryngitis, bronchitis, irritation of the mouth, enlargement of the salivary glands, skin rashes, and a swelling of the throat that could threaten breathing.

References 1, 6, 7 84-94, 100, 116, 117, 119, 129, 122;
Genium's *Material Safety Data Sheets Collection*,
No. 276 (8/89)

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♦ **SECTION 5 FIRST AID PROCEDURES**

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

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

Skin Contact Brush potassium iodide from clothes. Remove heavily contaminated clothing. After flushing with large amounts of water, wash exposed areas with soap and water.

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

Ingestion Although ingestion is unlikely, if this exposure occurs, consider inducing vomiting in alert, conscious individuals. Consult a physician.

♦ **SECTION 6 FIRE PROCEDURES AND DATA**

Fire Hazards For major fires, or for fires involving large quantities of chemical materials, firefighters should wear appropriate protective clothing and respirators. A self-contained breathing apparatus (SCBA) is recommended.

Flash Point and Method Noncombustible

Autoignition Temperature Not applicable

Flammability Limits in Air (vol. %) Not applicable

Hazardous Decomposition Products May include compounds of potassium and iodine

Extinguishing Media Use water spray, carbon dioxide, dry chemical, foams, or other media appropriate to surrounding fire conditions.

♦ **SECTION 7 PHYSICAL DATA**

Melting Point (at 1 atm) 1256 °F (680 °C)

Molecular Weight 166

pH 7 to 9

Specific Gravity (H₂O = 1) 3.12