MATERIAL SAFETY DATA SHEET

GENIUM PUBLISHING CORPORATION
1145 CATALYN STREET
SCHENECTADY, NY 12303-1836 USA
(518) 377-8855

GENIUM PUBLISHING CORP.

NO. 2

POTASSIUM HYDROXIDE
Revision B

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SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: POTASSIUM HYDROXIDE
OTHER DESIGNATIONS: Caustic Potash, Potash Lye, KOH, GE Material D4B11, CAS #001 310 583
MANUFACTURER: Available from many suppliers, including:

Hooker Chemicals & Plastics Corp.
Industrial Chemicals Group
Niagara Falls, NY 14303
Tel: (716) 278-7777

Allied Chemical
P.O. Box 1139R
Morristown, NJ 07960 Tel: (201) 455-4157
Emerg Tel: (201) 455-2000

SECTION II. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Typical content:		Ceiling Level
Potassium Hydroxide (KOH)	>83	2 mg/m^3 (KOH)*
Water	<13	
Potassium Carbonate (K_2CO_3)	<3.5	Human, Skin 50 mg/24H Severe Irritation
*ACGIH (1983) TLV.		Rat, Oral LD_{50} 365 mg/kg

SECTION III. PHYSICAL DATA

Boiling point, 1 atm, deg F ---- 2400
Vapor pressure, 719 C, mm Hg --- 1.0
Volatility @ R.T. --------- Negligible
Solubility in water, %, at 0 C - 49
20 C - 52
100 C - 64
Specific gravity, 20/4C -------- 2.044
Melting point, deg C ---------- ∿360
(if anhydrous - 380C)
pH (0.1 M solution) ---------- 13.5
Molecular weight ---------- 56.1

Appearance & Odor: Off-white, hygroscopic solid; no odor. (Irritancy of KOH dust may become noticeable at 2 mg/m^3.)

SECTION IV. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits in Air	Lower	Upper
None-Not combustible	N/A	N/A	N/A	N/A

Although it is not combustible and does not support combustion, it can be hazardous if present in a fire area. The following should be known for fire fighting: (1) It can melt and flow when heated (m.p. about 360 C). (2) Hot or molten material can react violently with small amounts of water (splattering, misting). (3) Can react with certain metals, such as aluminum, to generate flammable hydrogen gas. (4) Reacts with CO_2.
Firefighters should use self-contained respirator and full protective clothing.

SECTION V. REACTIVITY DATA

It is a stable material in closed containers under normal conditions of storage and handling. It does not polymerize. It is hygroscopic. It reacts with carbon dioxide from the air to form potassium carbonate.
Potassium hydroxide can react violently with strong acids and with many organic chemicals, especially with nitrocarbons and chlorocarbons. (Reacts with trichloroethylene to form spontaneously flammable dichloroacetylene.) It generates much heat when it dissolves in water.
Avoid contact with leather and wool (hydrolysis). It is corrosive to aluminum, tin, zinc, and alloys which contain these metals (liberates hydrogen).

SECTION VI. HEALTH HAZARD INFORMATION

TLV (Ceiling) 2 mg/m3

Strongly alkaline! Solid or its Conc. solutions can be rapidly corrosive to human tissue, producing severe burns and severe to permanent eye injury. Dust/mist inhalation can injure the entire respiratory tract. Ingestion causes burns, extreme pain and esophageal stricture. Estimated adult LD_{50} is 5g.

FIRST AID:

Eye Contact: Immediately flush with running water for 15 min., including under eyelids. (Speed in rinsing may save eyesight!) Contact physician! Continue gentle flushing 30 minutes or more or until medical help obtained.

Skin Contact: Flush with running water, under safety shower while removing clothing for gross contact. Continue flushing up to an hour for serious cases until medical help obtained.

Inhalation: Safely remove to fresh air. Contact physician. Have trained person administer oxygen for respiratory distress.

Ingestion: Immediately give 2-3 glasses of milk or water to drink; then citrus juice or diluted vinegar to neturalize. Contact physician. Vomiting may occur spontaneously, but do not induce it. Repeat giving liquid if vomiting occurs.

Get medical help for treatment, observation and support after first aid.

SECTION VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

Notify safety personnel of large spills. Institute prior plan. Provide ventilation (explosion-proof where H_2 can be generated). Clean-up personnel need protection against inhalation of mists or dusts and skin or eye contact.

Promptly shovel or sweep up dry material and place in appropriate container for use or disposal. (Delayed clean-up will allow pick up of moisture, increasing clean-up task.) CAUTION! Avoid dusting conditions. Wet trace residues with water and neutralize with dilute acetic acid. (Sodium bicarbonate may be used to partially neutralize.) Flush with much water. Do not flush waste caustic directly to sewer or surface waters.

DISPOSAL: Carefully dissolve in water and neutralize with dilute acetic acid. Flush to sewer with lots of water, regulations permitting. Or dispose of through a licensed contractor. Consider use of waste caustic for neutralizing plant acid wastes.

Follow Federal, State and Local regulations.

AQUATIC TOXICITY TLm 96: 100-10ppm EPA (CWA) RQ is 1000 lbs. (40CFR 117)

SECTION VIII. SPECIAL PROTECTION INFORMATION

Provide general ventilation, and also local exhaust ventilation (with filtration to remove KOH from exhausted air) to meet TLV requirements, especially where dusting or misting occurs. For exposures to 100 mg/m3 use high efficiency particulate respirator or a self-contained respirator; full facepiece. Wear chemical safety goggles and/or full faceshield where dusting or splashing is possible. Use neoprene or rubber gloves and appropriate protective clothing (apron, boots, etc.) where needed to prevent contact, especially when solutions are prepared. Soiled clothing to be removed promptly and laundered before reuse.

Eyewash fountains, washing facilities and safety showers should be immediately accessible in areas of use and handling.

Provide employee training for those working with KOH; until trained, workers should not work with this material.

SECTION IX. SPECIAL PRECAUTIONS AND COMMENTS

Store in closed containers in a dry, well-ventilated area separate from acids, peroxides, easily ignitible materials and other incompatibles. Protect containers from physical damage. Have abundant water supply available where stored or used. Drainage systems for storage or use areas need retention basins for pH adjustment and dilution of spills prior to discharge.

To prepare solutions add caustic potash slowly to water while stirring to avoid rapid heat build up. Avoid breathing dusts or mists. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Wear protective clothing when handling material.

DOT Classification: CORROSIVE MATERIAL I.D. No. UN1813 (Dry Solid) Label: CORROSIVE

DATA SOURCE(S) CODE: 1-11,14,25,26,37,39,43,47-49

APPROVALS: MIS/CRD J. M. Nielsen

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MEDICAL REVIEW: FEB 13 1984