

MATERIAL SAFETY DATA SHEET

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Version 1.6

Section 1 - Product and Company Information

Product Name POTASSIUM HYDROXIDE, PELLETS,
99.99%, SEMICONDUCTOR GRADE (NO
BULK SALES ALLOWED)
Product Number 306568
Brand SIAL
Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS MO 63103 US
Technical Phone: 314 771 5765
Emergency Phone: 414 273 3850 Ext. 5996
Fax: 800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
POTASSIUM HYDROXIDE	1310-58-3	No

Formula KOH
Synonyms Caustic potash * Hydroxyde de potassium (French)
* Kaliumhydroxid (German) * Kaliumhydroxyde
(Dutch) * LYE * Potassa * Potasse caustique
(French) * Potassio (idrossido di) (Italian) *
Potassium hydrate * Potassium hydroxide (ACGIH) *
Potassium (hydroxyde de) (French)
RTECS Number: TT2100000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Corrosive.

Harmful if swallowed. Causes severe burns.

HMIS RATING

HEALTH: 3

FLAMMABILITY: 0

REACTIVITY: 1

SPECIAL HAZARD(S): Water reactive

NFPA RATING

HEALTH: 3

FLAMMABILITY: 0

REACTIVITY: 1

SPECIAL HAZARD(S): Water reactive

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is

conscious. Call a physician immediately.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

CONDITIONS OF FLAMMABILITY

May react with metals, releasing flammable hydrogen gas.

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

Unsuitable: Do not use water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Store in a cool dry place.

Incompatible Materials: Absorbs carbon dioxide from air.

SPECIAL REQUIREMENTS

Air sensitive. Very hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	Ceiling	co2 MG/M3
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	Ceiling	co2 MG/M3

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	0.5 MG/M3
Poland		NDSch	1 MG/M3
Poland		NDSP	-

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	56.11 AMU	
pH	13.5	
BP/BP Range	1,320 °C	
MP/MP Range	361 °C	
Freezing Point	N/A	
Vapor Pressure	1 mmHg	719 °C
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	2.044 g/cm3	
Bulk Density	1.3 kg/l	
Odor Threshold	N/A	
Volatile%	0 %	21 °C
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	

Optical Rotation N/A
Miscellaneous Data N/A
Solubility Solubility in Water:Soluble.

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions of Instability: Absorbs carbon dioxide from air. Heat of solution is very high, and with limited amounts of water, violent boiling may occur

Conditions to Avoid: Tin. Do not heat above melting point.

Materials to Avoid: Nitro compounds, Zinc, Organic materials, Magnesium, Copper, Water, Aluminum.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Hydrogen gas, Carbon monoxide, Potassium oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes severe burns.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes severe burns.

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

273 mg/kg

LD50

24 HR

other fish

80 ppm

TLM

Oral

Rat

273 mg/kg

LD50

IRRITATION DATA

Skin

Human
50 mg
24 HR
Remarks: Severe irritation effect
Skin
Rabbit
50 mg
24 HR
Remarks: Severe irritation effect
Skin
Rabbit
1 mg
24 HR
Remarks: Mild irritation effect

Skin
Human
50 mg
24H
Remarks: Severe irritation effect

Skin
Rabbit
50 mg
24H
Remarks: Severe irritation effect

Eyes
Rabbit
1 mg
24H
Remarks: Rinsed

Skin
Guinea pig
50 mg
24H
Remarks: Severe irritation effect

CHRONIC EXPOSURE - MUTAGEN

Species: Rat
Dose: 1800 MG/KG
Cell Type: Ascites tumor
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 12 MMOL/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Species: other fish
Time: 24 h
Value: 165 mg/l

Species: other fish
Time: 24 h

Value: 80 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Potassium hydroxide, solid
UN#: 1813
Class: 8
Packing Group: Packing Group II
Hazard Label: Corrosive
PIH: Not PIH

IATA

Proper Shipping Name: Potassium hydroxide, solid
IATA UN Number: 1813
Hazard Class: 8
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C
Indication of Danger: Corrosive.
R: 22-35
Risk Statements: Harmful if swallowed. Causes severe burns.
S: 26-36/37/39-45
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Corrosive.
Risk Statements: Harmful if swallowed. Causes severe burns.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.