

REVISED 04 2013

SIGMA-ALDRICH

Material Safety Data Sheet

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Potassium hydroxide solution
 Product Number : 319384
 Brand : Fluka
 Supplier : Sigma Aldrich
 3050 Spruce Street
 SAINT LOUIS MO 63103
 USA
 Telephone : +1 800-325-5832
 Fax : +1 800-325-5052
 Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
 Preparation Information : Sigma-Aldrich Corporation
 Product Safety - Americas Region
 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
 Flammable liquid, Target Organ Effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Corrosive

Target Organs

Eyes, Kidney, Liver, Heart, Central nervous system

GHS Classification

Flammable liquids (Category 2)
 Acute toxicity, Oral (Category 3)
 Acute toxicity, Inhalation (Category 3)
 Acute toxicity, Dermal (Category 3)
 Skin irritation (Category 2)
 Eye irritation (Category 2A)
 Specific target organ toxicity - single exposure (Category 1)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.
 H301 + H311 Toxic if swallowed or in contact with skin
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H370 Causes damage to organs.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P280 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P280 Wear protective gloves/ protective clothing.
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
 P305 + P351 + P338 IF IN EYES: Flush cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.

HMIS Classification

Health hazard: 3
 Chronic Health Hazard: *
 Flammability: 3
 Physical hazards: 0

NFPA Rating

Health hazard: 3
 Fire: 3
 Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin Toxic if absorbed through skin. Causes skin burns.
Eyes Causes eye burns. Causes severe eye burns.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : HKO
 Molecular Weight : 56.11 g/mol

Component	Classification	Concentration
Methanol		
CAS-No. 67-56-1	Flam. Liq. 2; Acute Tox. 3;	90 - 100 %
EC-No. 200-659-6	STOT SE 1; H225, H301 +	
Index-No. 603-001-00-X	H311 + H331, H370	
Registration number 01-2119433307-44-XXXX		
Potassium hydroxide		
CAS-No. 1310-58-3	Skin Corr. 1A; Acute Tox. 4;	5 - 10 %
EC-No. 215-181-3	H314, H302	
Index-No. 019-002-00-8		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

General advice
 Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
 If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
 Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
 Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
 Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Potassium oxides

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI@ section) Danger of cutaneous absorption			
		STEL	250 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI@ section) Danger of cutaneous absorption			
		TWA	200 ppm 260 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		STEL	250 ppm 325 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			

	TWA	200 ppm 260 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.		
	TWA	200 ppm 260 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption		
	ST	250 ppm 325 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential for dermal absorption		
Potassium hydroxide	C	2 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye, skin, & Upper Respiratory Tract irritation		
	C	2 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	C	2 mg/m3	USA. NIOSH Recommended Exposure Limits

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid
Colour no data available

Safety data

pH no data available
Melting point/freezing point no data available
Boiling point no data available
Flash point 11.11 °C (52.00 °F) - closed cup
Ignition temperature no data available
Auto-ignition no data available

temperature
 Lower explosion limit no data available
 Upper explosion limit no data available
 Vapour pressure no data available
 Density 0.860 g/cm3
 Water solubility no data available
 Partition coefficient: n-octanol/water no data available
 Relative vapor density no data available
 Odour no data available
 Odour Threshold no data available
 Evaporation rate no data available

10. STABILITY AND REACTIVITY**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid

Water, Acids, Oxidizing agents, Light metals, Alkali metals, Metals, Acid chlorides, Acid anhydrides, Reducing agents, Organic materials, Copper, reacts violently with: vigorous reaction with: Halogens, Nitro compounds, Magnesium, Azides, Contact with aluminum, tin and zinc liberates hydrogen gas. Contact with nitromethane and other similar nitro compounds causes formation of shock-sensitive salts.

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions: Carbon oxides, Potassium oxides

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Oral LD50 no data available

Inhalation LC50 no data available

Dermal LD50 no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Eyes: no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects**Inhalation**

Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion
Toxic if swallowed.

Skin
Toxic if absorbed through skin. Causes skin burns.

Eyes
Causes eye burns. Causes severe eye burns.

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.; burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis

Synergistic effects

no data available

Additional Information

RTECS: Not available

12. ECOLOGICAL INFORMATION**Toxicity**

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2924 Class: 3 (8) Packing group: II
Proper shipping name: Flammable liquids, corrosive, n.o.s. (Methanol, Potassium hydroxide)
Marine Pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 2924 Class: 3 (8) Packing group: II EMS-No: F-E, S-C
Proper shipping name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Potassium hydroxide, Methanol)
Marine Pollutant: No

IATA

UN number: 2924 Class: 3 (8) Packing group: II
Proper shipping name: Flammable liquid, corrosive, n.o.s. (Potassium hydroxide, Methanol)

15. REGULATORY INFORMATION

OSHA Hazards

Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Corrosive

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:
CAS-No. Revision Date
67-56-1 2007-07-01
Methanol

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Methanol	CAS-No.	Revision Date
Potassium hydroxide	67-56-1	2007-07-01
	1310-58-3	2007-03-01

Pennsylvania Right To Know Components

Methanol	CAS-No.	Revision Date
Potassium hydroxide	67-56-1	2007-07-01
	1310-58-3	2007-03-01

New Jersey Right To Know Components

Methanol	CAS-No.	Revision Date
Potassium hydroxide	67-56-1	2007-07-01
	1310-58-3	2007-03-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Text of H-code(s) and R-phrases(s) mentioned in Section 3

Acute Tox.
Flam. Liq.
H225
H301 + H311 +
H331
H302
H314
H370
Skin Corr.
STOT SE
Acute toxicity
Flammable liquids
Highly flammable liquid and vapour.
Toxic if swallowed, in contact with skin or if inhaled
Harmful if swallowed.
Causes severe skin burns and eye damage.
Causes damage to organs.
Skin corrosion
Specific target organ toxicity - single exposure

Further information

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