

# SAFETY DATA SHEET

According to Regulation (EC) No 453/2010

SDS-EKOH(0.1)-0001

Version 1.2

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[www.eamaterials.com](http://www.eamaterials.com)

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name : Potassium hydroxide solution in Ethanol, 0.1 N

Included product code : EKOH(0.1)111-1.0, EKOH(0.1)111-2.5

### 1.2 Relevant identified uses of the substance or mixture

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : Not applicable

### 1.3 Details of the supplier of the safety data sheet

Company : Elite Advanced Materials Sdn Bhd  
No 1, Jalan KPK 1/2, Kawasan Perindustrian  
Kundang, 48020 Rawang, Selangor, Malaysia

E-mail address : enquiry@eamaterials.com

### 1.4 Emergency telephone number

Emergency phone : +60 3-6034 3766 (Local business hours only)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Flammable liquids	Category 2
Skin Irritation	Category 2
Eye Irritation	Category 2

### 2.2 Label elements

Labeling in compliance to Regulation (EC) No. 1272/2008 [CLP/GHS]

Hazard pictograms



GHS02



GHS07

Signal word

Danger

### Hazard statements

H225 Highly flammable liquid and vapour  
 H315 Causes skin irritation  
 H319 Causes serious eye irritation

### Precautionary statements

P210 Keep away from heat, hot surfaces, open flames, sparks.  
 No smoking  
 P240 Ground/bond container and receiving equipment

### Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.  
 Remove contact lenses, if present and easy to do. Continue rinsing.  
 P308 + P310 If exposed or concerned: Immediately call a POISON CENTER or doctor/physician

### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

### 2.3 Other hazards

Not available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance

Synonyms: Ethanolic KOH  
 Formula:  $C_2H_7KO_2$   
 Molecular Weight: 102.174 g/mol

Component	Identity	Classification Code	H-Code	Concentration (by wt)
Ethanol	CAS-No. : 64-17-5	Flam. Liq. 2 Eye Irrit. 2	H225	>= 50 - <=100 %
	EC No. : 200-578-6		H319	
	Index No. : 603-002-00-5			
Potassium hydroxide	CAS-No. : 1310-58-3	Met. Corr. 1 Acute Tox. 4 Skin corr. 1A	H290	>= 0.1 - <=1 %
	EC No. : 215-181-3		H302	
	Index No. : 019-002-00-8		H314	

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of First Aid measures

#### General information

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. First aider needs to protect himself.

#### If inhaled

If breathed in, move the person into fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give artificial respiration. Immediate medical attention is required.

#### In case of skin contact

Take off immediately all contaminated clothing. Wash off with soap and plenty of water for at least 15 minutes. Take victim to a doctor if irritation persists.

#### In case of eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

#### If swallowed

Rinse mouth with water. Make victim drink water (two glasses at most). Consult a physician.

### **4.2 Most important symptoms and delayed symptoms and effects**

Irritant effects, respiratory paralysis, dizziness, narcosis, inebriation, euphoria, nausea, vomiting, cough, shortness of breath, risk of blindness.

### **4.3 Indication of any immediate medical attention and special treatment**

No data available.

## **SECTION 5: FIRE FIGHTING MEASURES**

### **5.1 Extinguishing media**

#### Suitable extinguishing media

Use alcohol-resistant foam, dry powder or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### **5.2 Special hazards arising from the substance or mixture**

Combustibles. Vapours are heavier than air and may spread along floors. Forms explosive mixtures with air at ambient temperatures. Pay attention to flashback. Development of hazardous combustion gases or vapours possible in the event of fire.

### **5.3 Advice for fire-fighters**

Full protective clothing and self-contained breathing apparatus are required during handling.

### **5.4 Further information**

Remove container from danger zone. Use water spray to cool unopened containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protective equipment is required during handling. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

### 6.2 Environmental precautions

Do not discharge into drains or waterways. Prevent further leakage or spillage if safe to do so. Risk of explosion.

### 6.3 Methods and material for containment and cleaning up

Cover drain. Contain spillage, and then collect with non-combustible absorbent material (e.g. Chemizorb®). Observe possible material restrictions (see sections 7 and 10). Place it in a container for disposal according to local/ national regulations (see section 13). Clean up affected area.

### 6.4 Reference to other sections

Information on waste treatment, see Section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precaution for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition. No smoking. Take precautionary measures against static discharges. Observe label precautions. Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool dry, well-ventilated place. Keep away from all sources of ignition, heat and direct sunlight. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature see product label.

### 7.3 Specific end use

No further relevant information available.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Component	OSHA PEL
Ethanol	TWA: 1,000 ppm TWA: 1,880 mg/m <sup>3</sup>
Potassium hydroxide	CEIL: 2 mg/m <sup>3</sup>

## 8.2 Exposure control

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Personal protection equipment

Do not eat, drink or smoke during chemical handling. Remove and wash contaminated clothing before re-using. Ventilation must working properly, especially in confined areas. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

### **Eye/ face protection**

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

### **Skin protection**

Wear appropriate protective gloves and clothing to prevent skin exposure. 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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### Full contact\*

Material: butyl-rubber

Minimum layer thickness: 0.7 mm

Break through time: > 480 min

#### Splash contact\*

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: > 120 min

\*Source – Merck, 2017

### **Body protection**

Complete suit protecting against chemicals. Impervious and 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.

## Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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). Recommended filter type: A-(P2). The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Colourless to Light yellow
Ordor	:	Ethanol
Ordor threshold	:	No data available
pH - value	:	14 at 20 °C
Melting point / Range	:	No data available
Boiling point / Range	:	No data available
Flash point	:	12 °C [ethanol]
Evaporation rate	:	No data available
Flammability limit - LEL	:	3.5 %(V)
Flammability limit - UEL	:	15.0 %(V)
Vapour pressure	:	No data available
Vapor density (air = 1)	:	No data available
Density	:	0.836 g/cm <sup>3</sup> at 20 °C
Bulk density	:	No data available
Solubility(ies)	:	No data available
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water:	:	No data available
Auto-ignition temperature	:	425 °
Decomposition temperature	:	No data available
Viscosity	:	No data available
Explosive properties	:	Not classified as explosive
Oxidising properties	:	None
Surface Tension	:	No data available

### 9.2 Other information

Not applicable

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Vapours may form explosive mixture with air

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

### 10.3 Possibility of hazardous reactions

Risk of explosion/exothermic reaction with:

Hydrogen peroxide, perchlorates, perchloric acid, nitric acid, mercury (II) nitrate, permanganic acid, nitriles, peroxi compounds, strong oxidising agents, nitrosyl compounds, peroxides, sodium, sodium azide, potassium, halogen oxides, calcium hypochlorite, nitrogen dioxide, metallic oxides, uranium hexafluoride, iodides, chlorine, alkali metals, alkaline earth metals, alkali oxides, ethylene oxide, silver, silver compounds, ammonia, potassium permanganate, conc. sulfuric acid, benzoyl chloride, calcium, in powder form, carbides, organic nitro compounds, phosphorus, nonmetallic oxides, chlorine dioxide, fluorine, magnesium, nitroso compound, nitrogen trichloride, tetrahydrofuran

Risk of ignition or formation of inflammable gases or vapours with:

Halogen-halogen compounds, chromium (VI) oxide, chromyl chloride, fluorine, hydrides, oxides of phosphorus, platinum, aluminium, ammonium salts, germanium, anhydrides, azides, lead, copper, copper alloys, tin, zinc

Exothermic reaction with:

Acetonitrile, acrolein, aldehydes, alcohols, acetic acid, halogenated hydrocarbon, halogen-halogen compounds, peroxides, hydrogen sulphide, hydrogen peroxide, vinyl acetate, reducing agents, acids, acid chlorides, acid anhydrides, peroxi compounds, methanol, chloroform

### 10.4 Conditions to avoid

Incompatible materials, ignition sources, excess heat, oxidizers

### 10.5 Incompatible materials

Animal/vegetable tissues, glass, various plastics, metals and alloys

### 10.6 Hazardous decomposition products

No data available

## SECTION 11: TOXICOLOGY INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

**Symptoms:** If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. If inhaled, burns of mucous membranes, cough, shortness of breath, possible damage of respiratory tract

#### Skin corrosion/irritation

Mixture causes skin irritation.

#### Serious eye damage/eye irritation

Mixture causes serious eye irritation.

#### Respiratory or skin sensitisation

No data available

### **Germ cell mutagenicity**

No data available

### **Carcinogenicity**

No data available

### **Reproductive toxicity**

No data available

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

No data available

### **Aspiration hazard**

No data available

### **Signs and Symptoms of Exposure**

Dizziness, inebriation, narcosis, respiratory paralysis, euphoria, pain, oedema, vomiting, shock, death

### **Additional Information**

RTECS: Not available

## **SECTION 12: ECOLOGY INFORMATION**

### **12.1 Ecotoxicity**

No data available

### **12.2 Persistence dan degradability**

No data available

### **12.3 Bioaccumulative potential**

No data available

### **12.4 Mobility in soil**

No data available

### **12.5 Results of PBT and vPvB assessment**

Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

### **12.6 Other adverse effects**

No interference with wastewater treatment plants are to be expected when used properly. Discharge into the environment must be avoided.



## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment method

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: TRANSPORT INFORMATION

### 14.1 UN number

ADR/RID: 2924

IMDG: 2924

IATA-DGR: 2924

### 14.2 UN proper shipping name

ADR/RID:

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CONT. ETHANOL, POTASSIUM HYDROXIDE)

IMDG:

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CONT. ETHANOL, POTASSIUM HYDROXIDE)

IATA-DGR:

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (CONT. ETHANOL, POTASSIUM HYDROXIDE)

### 14.3 Transport hazard class(es)

ADR/RID: 3 (8)

IMDG: 3 (8)

IATA-DGR: 3 (8)

### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA-DGR: II

### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

### 14.6 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

### 14.7 Special precautions for user

No data available

## SECTION 15: REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

## 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

### SECTION 16: OTHER INFORMATION

This information is based on present level of our knowledge, however, this shall not constitute a guarantee product features and shall not establish a legally valid contractual relationship.

Relevant phrases:

H225 Highly flammable liquid and vapor

H290 May be corrosive to metals

H314 Causes serious skin burns and eye damage

#### Abbreviations:

ADR : European agreement concerning the international carriage of dangerous goods by road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association

ICAO : International Civil Aviation Organization

RID : Regulations concerning the International Carriage of Dangerous goods by rail.

#### Notice to reader

*The information contained in this Safety Data Sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the products and should not be construed as any guarantee of technical performance or suitability for particular application.*

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