ALBEMARLE®

SAFETY DATA SHEET

Potassium hydroxide (Flakes or Pellets)

Preparation Date : 01-Sep-2015 **Revision Date:** 03-Jul-2019 **Revision Number** 1.05

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name Potassium hydroxide (Flakes or Pellets)

Other means of identification

Synonyms Caustic potash, KOH Flakes/Pellets
CAS-No 1310-58-3
Formula KOH

Recommended use of the chemical and restrictions on use

General function Chemical intermediate.
Uses advised against No information available

Details of the supplier of the safety data sheet

Company Albemarle Corporation
4250 Congress Street
Charlotte , NC 28209
United States of America (USA)

For Non-Emergency 800-535-3030

'Competent Body for SDS' HSE@Albemarle.com

Emergency telephone number

Emergency Telephone Numbers In case of emergency, call Albemarle emergency response at +1 225 344 7147

2. HAZARDS IDENTIFICATION

Classification

Acute Toxicity - Oral	Category 4
Skin Corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Label elements

Emergency Overview

Danger

Hazard Statements
Harmful if swallowed
Causes severe skin burns and eye damage
May be corrosive to metals

Physical state Solid **Color** White. **Odor** Odourless.

Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth Do not induce vomiting
Absorb spillage to prevent material damage

Storage
Store locked up
Store in corrosive resistant aluminum container with a resistant inner liner

Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Not applicable
Other Information
15% of the mixture consists of ingredient(s) of unknown toxicity
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Caustic potash, KOH Flakes/Pellets.
Pure substance/mixture Substance

Component	CAS-No	Weight %
Potassium Hydroxide	1310-58-3	>= 85

4. FIRST AID MEASURES

First aid measures
General Advice IF exposed or concerned: Get medical advice/attention.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing. Seek medical advice.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Seek medical advice.

Inhalation IF INHALED: Remove person to fresh air and keep comfortable for breathing. Seek medical advice.

Ingestion Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms Causes severe burns. Harmful if swallowed.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media Not combustible. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray or fog to cool exposed equipment and containers.

Unsuitable Extinguishing Media No information available.

Specific Hazards Arising from the Chemical

Combustion/explosion hazards Attacks many metals in the presence of water or humidity, releasing highly flammable gas (hydrogen) which generates fire or explosion hazards.

Hazardous Combustion Products High temperatures may liberate toxic or corrosive gases. Do not breathe smoke or vapours.

Explosion Data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Protective Equipment and Precautions for Firefighters

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Isolate the sources of the spill(s) leak(s) and evacuate all personnel from danger area. Ventilate the area. Wear suitable protective equipment.

Environmental Precautions

Environmental precautions Contain any spill with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning up Small spills may be neutralized with limewater slurry or soda ash and flushed with large amounts of cold water. Shovel up residues and place in a labelled sealable container for subsequent safe disposal. Put leaking container into a labelled drum or overdrum.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with

skin and eyes. Wear personal protective equipment.

Conditions for safe storage, including any incompatibilities

Storage Keep in a dry, cool and well-ventilated place. Keep only in original container. Local exhaust is needed at source of dust.

Incompatible Materials Avoid contact with acids. Avoid strong acids and oxidizers. Never add water to this product. Avoid contact with Al, Zn, Sn, Cu and Al, Zn, Sn, Cu alloys. Contact with metals causes formation of flammable hydrogen gas. Avoid ether. Avoid water solutions. Avoid organic materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Component	CAS-No	ACGIH TLV (TWA)	OSHA PEL (TWA)	NIOSH IDLH
Potassium Hydroxide	1310-58-3	Ceiling: 2 mg/m³	(vacated) Ceiling: 2 mg/m³	Ceiling: 2 mg/m³

Component	CAS-No	Alberta	British Columbia	Ontario	Quebec
Potassium Hydroxide	1310-58-3	Ceiling: 2 mg/m³	Ceiling: 2 mg/m³	CEV: 2 mg/m³	Ceiling: 2 mg/m³

Appropriate engineering controls

Engineering Controls Ensure adequate ventilation. Mechanical ventilation is recommended.

Individual protection measures, such as personal protective equipment

Eye/face Protection Chemical goggles or face shield with safety glasses.

Skin Protection Wear protective gloves/clothing.

Hand protection Gloves resistant to chemical permeation. Neoprene gloves Rubber gloves Impervious gloves

Respiratory protection Whenever workplace conditions warrant, wear properly fitted, approved respirator with high-efficiency (dust/fume/mist) filter cartridges.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Color White.
Odor Odourless.
Odor Threshold None

Molecular Weight No data available
pH 14 (10 g/100 ml H2O)
Melting point/freezing point 406 °C / 763 °F
Boiling Point/Range 1327 °C / 2421 °F (1013 hPa)
Flash Point Not applicable: inorganic
Evaporation Rate No data available.
Flammability (solid, gas) No data available
Flammability Limit in Air
Upper flammability limit: No data available
Lower flammability limit: No data available
Vapor Pressure No data available
Vapor Density Not applicable
Density 2.044
Solubility(ies)

Water Solubility	Soluble. 121g/100g. (25°C)
Solubility in other solvents	No data available
Partition coefficient	Not applicable: inorganic
Autoignition temperature	None
Decomposition temperature	No data available
Viscosity, kinematic	No data available
Dynamic viscosity	No data available
Explosive Properties	None
Oxidizing Properties	Non oxidizing.

10. STABILITY AND REACTIVITY

Reactivity Hazard No data available.

Stability Stable under recommended storage conditions

Hazardous Reactions No hazardous reaction expected under normal handling.

Hazardous Polymerization None under normal processing.

Conditions to Avoid Keep away from humidity. Exposure to air. Freezing.

Materials to avoid Avoid contact with acids. Avoid strong acids and oxidizers. Never add water to this product. Avoid contact with Al, Zn, Sn, Cu and Al, Zn, Sn, Cu alloys. Contact with metals causes formation of flammable hydrogen gas. Avoid ether. Avoid water solutions. Avoid organic materials.

Hazardous decomposition products None under normal processing.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Not expected to be an irritant.

Eye contact Causes severe burns.

Skin contact Causes severe burns.

Ingestion Harmful if swallowed.

Potential Health Effects

Acute Effects

Skin Corrosion/irritation Corrosive to skin. Causes severe burns.

Serious eye damage/eye irritation Risk of serious damage to eyes. Causes eye burns.

Respiratory irritation Not irritating.

Sensitization: Not sensitizing. (guinea pig).

STOT - single exposure No information available.

Chronic Effects

Mutagenic Effects In vitro tests did not show mutagenic effects. In vivo mutagenicity tests:. Testing is not scientifically justified.

Carcinogenicity There are no known carcinogenic chemicals in this product.

Component	CAS-No	ACGIH Carcinogens	IARC	NTP	OSHA Carcinogens
Potassium Hydroxide	1310-58-3	-	-	-	-

Reproductive Effects No information available.

STOT - repeated exposure No information available.

Chronic Effects Chronic dermal exposure may cause inflammatory and ulcerative changes in the mouth and possibly bronchial and gastrointestinal disorders.

Aspiration hazard No information available.

Numerical measures of toxicity

Product Information

Unknown Acute Toxicity 15% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 333 mg/kg

LD50 Oral: Rat Oral LD50: 333 mg/kg

Component Information

Component	Rat Oral LD50:	Rabbit Dermal LD50:
Potassium Hydroxide 1310-58-3	333 mg/kg	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute Fish toxicity : 50-165 mg/L

Persistence/Degradability Inorganic substance. Does not undergo biodegradation.

Bioaccumulation/ Accumulation No information available.

Mobility in Environmental Media The substance is expected to remain in the water phase due to high water solubility.

Component	Partition coefficient
Potassium Hydroxide 1310-58-3	0.65-0.83

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method Do not discharge into drains or the environment, dispose to an authorised waste collection point. Dispose in a safe manner in accordance with local/national regulations, after neutralization (pH between 5.5 and 8.5 inclusive).

Contaminated Packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	POTASSIUM HYDROXIDE, SOLID
Hazard Class	8
UN No.	1813
Packing Group	II
Marine Pollutant:	N
Description	UN 1813, Potassium Hydroxide, Solid, 8, II

TDG

This material is considered as Dangerous Goods per regulations of Transport Canada. The use of the above US DOT information from US 49 CDR regulations is allowed for shipments that originate in the United States.

IMDG/IMO

IMO Class	8
Packing Group	II
UN-No	1813
IMO Labelling and Marking	8
Proper Shipping Name	Potassium Hydroxide, Solid
EmS	F-A, S-B
Marpol - Annex II	Not applicable
Marpol - Annex III	Unregulated
Transport Description	UN 1813 Potassium Hydroxide, Solid, 8, II

IATA/ICAO

IATA/ICAO Class	8
Packing Group	II
UN-No	1813
IATA/ICAO Labelling/Marking	8
Passenger Aircraft	Maximum net quantity per package: 5 kg
Cargo aircraft only	Maximum net quantity per package: 50 kg
Proper shipping name	Potassium Hydroxide, Solid
Transport Description	UN 1813 Potassium Hydroxide, Solid, 8, II

15. REGULATORY INFORMATION

International Inventories	TSCA	DSL	NDSL	AICS	EINECS	ENCS	KECL	PICCS	IECSC	NZIoC	TCSI
Potassium hydroxide (Flakes or Pellets)	X	X	-	X	X	X	X	X	X	X	X

(X) Complies (-) Does not Comply

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Reportable and Threshold Planning Quantities

The following components have RQs and/or TPQs under SARA and/or CERCLA

Component	CERCLA RQ, lbs	SARA 302 RQ, lbs	SARA 302 TPQ, lbs
Potassium Hydroxide (CAS #: 1310-58-3)	1000 lb	-	-

State Right-to-Know

This product contains the following chemicals regulated in the states listed below.

Component	California Prop. 65	New Jersey	Massachusetts	Pennsylvania
Potassium Hydroxide (CAS #: 1310-58-3)	-	X	X	X

WHMIS Hazards
D1B Toxic materials
E Corrosive material

16. OTHER INFORMATION

NFPA	Health 3	Flammability 0	Instability 1	Physical Hazards *
HMIS	Health 3	Flammability 0	Physical Hazards 1	

Prepared By

Health & Environment Department Albemarle Corporation
FOR ADDITIONAL NONEMERGENCY PRODUCT INFORMATION, CONTACT:

HEALTH AND ENVIRONMENT DEPARTMENT
4250 Congress Street
Charlotte , NC 28209
United States of America (USA)
(800) 535-3030

Preparation Date : 01-Sep-2015
Revision Date: 03-Jul-2019

Disclaimer:
The information contained herein is accurate to the best of our knowledge. The Company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances.

End of Safety Data Sheet