SAFETY DATA SHEET

CAUSTIC POTASH (POTASSIUM HYDROXIDE)

CAS No.: 1310-58-3

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

CAUSTIC POTASH (POTASSIUM HYDROXIDE)
Potassium Hydrate; Caustic Potash Flakes/Pearls
CAS: 1310-58-3

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Chemical intermediate (potassium salts, soaps/liquid soap manufacture), electrolyte in alkaline batteries, pH adjustment/neutralisation, biodiesel production, fertiliser manufacture. For industrial user only.

Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

SURAJ CHEMICALS
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281
Email: sales@surajchemicals.com | Website: www.surajchemicals.com
GST No: 33ACEPV8190L1ZZ

Emergency phone number

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), based on the mandatory (harmonised) GHS classification for potassium hydroxide (CAS 1310-58-3).

Met. Corr. 1	Corrosive to metals, Category 1, H290
Skin Corr. 1A	Skin corrosion, Category 1A, H314
Eye Dam. 1	Serious eye damage, Category 1, H318 (subsumed under H314)

GHS label elements, including precautionary statements

GHS: Danger

Hazard statements

H290: May be corrosive to metals.
H314: Causes severe skin burns and eye damage.

Precautionary statements

P234: Keep only in original container.
P260: Do not breathe dust.
P264: Wash exposed skin thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER/doctor.
P390: Absorb spillage to prevent material damage.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local/regional/national regulations.

Other hazards which do not result in classification

Strongly hygroscopic – absorbs moisture and CO_2 from air. Dissolution in water is strongly exothermic. Reacts with certain metals to generate flammable hydrogen gas.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Potassium Hydroxide (KOH), solid (flakes/pearls/pellets)

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 1310-58-3	Potassium Hydroxide – Met. Corr. 1, Skin Corr. 1A: H290, H314 – Danger	≥90% (balance water/carbonate as typical for technical grade)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable (technical-grade single substance with minor process residuals as above)

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance immediately, showing the SDS of this product.

By inhalation

Remove person to fresh air and keep at rest. If breathing is difficult, give oxygen. Seek immediate medical attention.

By skin contact

Brush off solid material, remove contaminated clothing immediately. Flush skin with plenty of water for at least 15–20 minutes. Obtain immediate medical attention – treat as a chemical burn.

By eye contact

Rinse immediately with plenty of water for at least 20 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Obtain immediate medical attention.

By ingestion/aspiration

Do NOT induce vomiting. Rinse mouth with water. Give water to drink if the person is conscious and alert. Obtain immediate medical attention.

Most important symptoms/effects, acute and delayed

Causes severe skin burns and eye damage. May cause serious, permanent tissue damage on contact. Ingestion may cause severe burns to the mouth, throat, oesophagus and stomach.

Indication of immediate medical attention and special treatment needed, if necessary

Treat as a chemical burn; specialist medical attention required for significant exposures.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Suitable: Use extinguishing media appropriate to the surrounding fire (water spray, foam, dry chemical, CO_2).
Unsuitable: None known.

Specific hazards arising from the chemical

Not combustible. Reacts with certain metals (aluminium, zinc, tin) to liberate flammable/explosive hydrogen gas. Dissolution/contact with water is strongly exothermic and can cause spattering.

Special protective actions for fire-fighters

Wear self-contained breathing apparatus and full acid/alkali-resistant protective suit.

Additional provisions

Cool fire-exposed containers with water spray if safe to do so, added cautiously given the exothermic dissolution.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Evacuate the area. Wear full PPE described in section 8. Avoid skin and eye contact and dust inhalation.

For emergency responders

Wear full chemical-protective clothing and appropriate respiratory protection. Keep unprotected persons away. See section 8.

Environmental precautions

Prevent entry into drains, watercourses or soil. Notify the relevant authority in case of significant environmental release.

Methods and materials for containment and cleaning up

Sweep up dry material carefully (avoid dust) and place in a suitable, labelled, dry container. Do not add water directly to bulk spilled solid in a confined area without controlling the resulting heat. Neutralise residual traces cautiously with dilute acid under controlled conditions.

Reference to other sections

See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use

Avoid all contact with skin and eyes. Do not breathe dust. Use with adequate ventilation. Add solid caustic to water slowly with stirring (never water to solid caustic) when dissolving, to control the exotherm.

B. Technical recommendations for the prevention of fires and explosions

Keep away from aluminium, zinc, tin and other reactive metals to avoid hydrogen gas generation and accumulation in confined spaces.

C. Technical recommendations on general occupational hygiene

Do not eat, drink or smoke while handling. Wash hands and exposed skin thoroughly after handling.

D. Technical recommendations to prevent environmental risks

Prevent uncontrolled discharge to drains or watercourses.

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Storage condition	Store in tightly closed, moisture-proof containers in a cool, dry, well-ventilated place
Incompatible materials	Acids, aluminium, zinc, tin, organic halogen compounds, water (uncontrolled contact)

B. General conditions for storage

Highly hygroscopic – keep containers sealed to prevent caking and absorption of atmospheric CO_2/moisture. Segregate from acids and reactive metals.

Specific end use(s)

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Identification	Occupational Exposure Limit Type	Value
Potassium Hydroxide CAS: 1310-58-3	Ceiling limit	2 mg/m³

Appropriate engineering controls

Provide local exhaust ventilation to control dust/mist and keep airborne concentrations below the occupational exposure limit.

B. Respiratory protection

Use a NIOSH/BIS-approved respirator with particulate/acid-gas cartridge where ventilation is inadequate; use SCBA for spill response/confined space entry.

C. Specific protection for the hands

Chemical-resistant gloves (butyl rubber, neoprene, PVC or nitrile), impervious to concentrated alkali.

D. Eye and face protection

Chemical safety goggles and face shield; do not rely on safety glasses alone.

E. Bodily protection

Acid/alkali-resistant apron/suit and boots. Change contaminated clothing immediately.

F. Additional emergency measures

Emergency shower and eyewash stations must be readily available in the work area.

Environmental exposure controls

Prevent environmental release of both product and container; see subsection 7.1.D.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid (flakes/pearls/pellets)
Appearance	White to off-white solid, deliquescent
Odor	Odorless
Odour threshold	Not applicable
Volatility	
Boiling point	1327°C
Melting point	360°C
Vapour pressure at 20°C	Negligible
Evaporation rate	Not applicable (solid)
Product Description	
Molecular weight	56.11 g/mol
Density	2.044 g/cm³
pH (5% aqueous solution)	~13.5 (strongly alkaline)
Solubility in water at 20°C	~112 g/100 mL (highly soluble, strongly exothermic)
Flammability	
Flash Point	Non-applicable (non-combustible solid)
Flammability (solid, gas)	Not flammable
Autoignition temperature	Not applicable
Lower / Upper flammability limit	Not applicable

Other information

Explosive properties	Not applicable
Oxidising properties	Not classified as an oxidiser
Corrosive to metals	Corrosive to aluminium, zinc, tin and other amphoteric metals; liberates hydrogen gas

10. STABILITY AND REACTIVITY

Reactivity

Strongly alkaline. Reacts violently and exothermically with acids and with water. Reacts with amphoteric metals (aluminium, zinc, tin) liberating flammable/explosive hydrogen gas.

Chemical stability

Chemically stable under the indicated conditions of storage, handling and use. Deliquescent – absorbs moisture and CO_2 from air, forming potassium carbonate.

Possibility of hazardous reactions

Violent, exothermic reaction with acids and with water; risk of splattering/boiling if dissolved rapidly or in an uncontrolled manner.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Absorbs CO_2/moisture, deliquescent	Not applicable	Not applicable	Keep sealed – hygroscopic

Incompatible materials

Acids, aluminium, zinc, tin, lead, organic halogen compounds, nitro compounds, water (uncontrolled contact).

Hazardous decomposition products

None under normal conditions; reaction with reactive metals releases hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)

Causes severe burns to the mouth, throat, oesophagus and stomach; may be fatal if swallowed in quantity.

B. Inhalation (acute effect)

Dust/mist is corrosive to the respiratory tract; may cause severe irritation, coughing and difficulty breathing.

C. Contact with skin and eyes (acute effect)

Skin: causes severe burns. Eyes: causes serious, potentially irreversible eye damage.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)

Not listed as a carcinogen by IARC, NTP or OSHA. Classification criteria for mutagenicity/reproductive toxicity are not met based on available data.

E. Sensitizing effects

Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure

Corrosive effects on contact tissues (respiratory tract, skin, eyes) as noted above.

G. Specific target organ toxicity (STOT) – repeated exposure

Classification criteria are not met based on available data.

H. Aspiration hazard

Not applicable (solid).

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Potassium Hydroxide CAS: 1310-58-3	LD50 oral: 273 mg/kg	Rat
	Corrosive on skin/eye contact (severity precludes standard LD50 dermal testing)	Rabbit

12. ECOLOGICAL INFORMATION

Toxicity is primarily a function of the pH shift caused in receiving water rather than intrinsic toxicity of the potassium or hydroxide ions.

Toxicity

Acute Toxicity	Species	Genus
LC50: ~80 mg/L (96h, pH-dependent)	Non-applicable	Fish
EC50: ~100 mg/L (48h, pH-dependent)	Non-applicable	Crustacean

Persistence and degradability

Inorganic; biodegradation is not applicable. Rapidly neutralised/buffered in typical receiving waters.

Bioaccumulative potential

Not expected to bioaccumulate.

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Not applicable	Not applicable	Highly soluble/mobile; will raise soil pH locally	

Results of PBT and vPvB assessment

Not applicable (inorganic substance).

Other adverse effects

Uncontrolled release may cause significant local pH shift harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Neutralise carefully with dilute acid under controlled conditions and dilute prior to disposal in accordance with local discharge consent, or dispose of via a licensed hazardous-waste contractor. Empty containers may retain hazardous residue.

Refer to national and local regulations on waste management.

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR/RID)

14.1 UN number	UN1813
14.2 UN proper shipping name	POTASSIUM HYDROXIDE, SOLID
14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG)

14.1 UN number	UN1813
14.2 UN proper shipping name	POTASSIUM HYDROXIDE, SOLID
14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Marine pollutant	No
14.6 Special precautions for user	EmS Codes: F-A, S-B
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO)

14.1 UN number	UN1813
14.2 UN proper shipping name	POTASSIUM HYDROXIDE, SOLID
14.3 Transport hazard class(es)	8
14.4 Packing group	II
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

Listed under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 (India). It is recommended to use the information in this SDS as data for a local risk evaluation for handling, use, storage and disposal.

Other legislation

Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
Public Liability Insurance Act, 1991

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

H290: May be corrosive to metals.
H314: Causes severe skin burns and eye damage.

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

Advice related to training

Personnel handling this product should receive training on the hazards of corrosive alkalis, safe dissolution practice, PPE use and emergency response before use.

Principal bibliographical sources

Publicly available (mandatory/harmonised) GHS classification and physicochemical reference data for potassium hydroxide (CAS 1310-58-3).

Abbreviations and acronyms

LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | IARC: International Agency for Research on Cancer | SCBA: Self-Contained Breathing Apparatus

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

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