Product: SODIUM HYDROXIDE, SOLID - NaOH

1. IDENTIFICATION

Product Identification: Sodium Hydroxide, Solid - NaOH

Other ways of identification: -

Recommended uses and restrictions on use: Pulp and paper manufacturing; Aluminum production; Obtaining soap and detergents in the manufacturing processes of chemical intermediates, sodium salts in general, dyes and pigments, glass, pharmaceutical products, cosmetics, water treatment and institutional cleaning products, and in the refining of vegetable oils.

Supplier Details:

Katrium Chemical Industries SA

Address: João Paulo Road, 530 – Honorio Gurgel

Zip Code: 21512-002

Rio de Janeiro/RJ – Brazil

Contact telephone number: 55 (21) 2472-9060

Emergency Telephone Number: AMBIPAR RESPONSE - 0800 117 2020

2. HAZARD IDENTIFICATION

GHS classification of the substance or mixture:

Corrosive to metals: Category 1
Skin corrosion/irritation: Category 1A
Serious eye damage/eye irritation: Category 1

Classification system used:

ABNT-NBR 14725 standard.

Globally Harmonized System for the Classification and Labeling of Chemicals, UN.

GHS labeling elements, including precautionary statements:

Words of warning: DANGER

Hazard phrase(s):

H290 – May be corrosive to metals

H314 – Causes severe skin burns and serious eye damage.

H318 – Causes serious eye damage

Precautionary phrase(s):

P234 – Store only in original container
P280 – Wear protective gloves/protective clothing/eye protection/face protection/hearing protection

Emergency Response:

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P303 + P361 + P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / [or shower] .

Storage:

P406 – Store in a corrosion-resistant container/...with a resistant inner lining.

Other hazards that do not result in a classification:

May be corrosive. Can cause severe burns and complete perforation of the mucosal tissues of the mouth, esophagus, and stomach, and pulmonary edema if ingested or inhaled. Chronic inhalation exposure can cause lung effects such as bronchopneumonia and alveolar wall thickening with cell proliferation and congestion.

Other information:

Not available.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

SUBSTANCE: SODIUM HYDROXIDE, SOLUTION - NaOH

Ingredients, impurities and/or stabilizing additives that contribute to the hazard:

Sodium Hydroxide – NaOH (CAS 1310-73-2): 47.0% - 49.0%

Water – H_2O (CAS -) : 51% - 53%

4. FIRST AID MEASURES

Inhalation:

Remove the victim from contaminated areas as quickly as possible. Transport them to a well-ventilated area. Administer oxygen if the victim has difficulty breathing. See a doctor immediately.

Skin contact:

Remove contaminated clothing and shoes. Wash the affected area with running water. See a doctor immediately.

Eye contact:

Flush your eyes with running water for 20 minutes as soon as possible, keeping your eyelids open. See a doctor immediately.

Ingestion:

Vomiting may occur spontaneously, but do not induce it. Rinse your mouth with plenty of running water. Seek medical help immediately.

Most important symptoms and effects, acute or delayed:

Harmful in contact with skin. Corrosive material and can cause severe burns to all tissues with which it comes into contact.

Indication of immediate medical attention and special treatments required, if necessary:

Avoid contact with the product when assisting the victim. Treat symptomatically and supportively, according to the clinical picture, with respiratory assistance. In case of skin contact, do not rub the affected area.

5. FIRE FIGHTING MEASURES

Extinguishing media:

Non-explosive / Non-flammable.

Small proportions: Compatible with fire extinguishers. Large proportions: Water in the form of mist or foam.

Specific hazards arising from the substance or mixture:

Combustion of the chemical or its packaging can form irritating and toxic gases.

Special protective measures for firefighting personnel:

Wear self-contained breathing apparatus. Avoid contact with the material while fighting the fire. If contact is unavoidable, wear chemical-resistant clothing.

6. CONTROL MEASURES FOR SPILLS OR LEAKS

For non-emergency personnel

If you observe an emergency situation involving a leak, spill, or accidental release, immediately report the accident to those responsible and stay away. If possible, eliminate ignition sources and provide sufficient ventilation to remove contaminants.

For emergency service personnel

Evacuate people from the affected area, isolate the risk area, restrict product leakage by closing valves and turning off pumps, and prevent contact with the environment containing the product by storing it in containment dikes or appropriate containers. Use personal protective equipment as described in section 8.

Environmental precautions:

Prevent spilled product from reaching watercourses and sewage systems.

Methods and materials for containment and cleaning:

Collected material must be properly packaged, labeled, and transported in accordance with legal regulations and best practices. If not recovered, the waste must be properly neutralized for disposal.

Methods and materials for sealing and containment:

Recover the spilled product by placing it in appropriate drums and labeling it as specified during transportation. Before disposal, proceed with proper neutralization using diluted acids such as hydrochloric or acetic acids, observing the risks of a reaction that can be violent. For final disposal, proceed in accordance with Section 13 of this SDS.

Area isolation:

Keep unauthorized persons away.

Methods and materials for cleaning:

Collected material must be properly packaged, labeled, and transported in accordance with legal regulations and best practices. If not recovered, the waste must be properly neutralized for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Prevention of worker exposure:

Use personal protective equipment as described in section 8.

Fire and explosion prevention:

The substance is not flammable.

Precautions and guidelines for safe handling:

The usual precautions for handling chemicals should be observed. Avoid any direct contact with the material.

Hygiene measures

Appropriate:

Wash your hands before any break and at the end of the work period. Do not eat or smoke during the work period. Remove contaminated clothing immediately.

Inappropriate:

Do not eat, drink or smoke when handling the product.

Conditions for safe storage, including any incompatibilities

Suitable conditions:

Store in the original container. Keep away from incompatible products. Keep in a dry place and properly labeled.

Conditions to be avoided, including any incompatibilities

Packaging materials

Recommended:

25 kg polyethylene bags .

Unsuitable:

Paper, cardboard, metal and similar.

Other information:

Keep away from heat, high temperatures, and incompatible materials. Keep the container tightly closed. Use dikes or natural barriers to contain any product leaks. Absorb while dry. If possible, stop the leak using stoppers, sealing tape, or by turning the hole, tear, or dent upward. Collect all material in suitable, properly labeled containers for later treatment and disposal. Waste must be disposed of in accordance with local, state, or federal environmental regulations. For transshipment, find an appropriate location and follow the safety procedures described above.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

Control parameters

Occupational exposure limits :

The values below are applicable for work environments.

SODIUM HYDROXIDE, SOLID - NaOH

MTE NR 15 – LT: Not established

CAL / OSHA – PEL-C: 2 mg/m³

NIOSH - REL - C: 2 mg/m³ up to 10 hours

ACGIH - TLV - TWA: Not established

ACGIH - TLV -C: 2 mg/m³ - Ceiling

Biological indicators:

There are no biological exposure indicators established by Brazilian legislation – NR 07.

Engineering control measures:

Mechanical ventilation

Personal protective measures

Eye/face protection : Wide-vision glasses, face shield

Skin protection : PVC or Tychem coverall , Rubber or PVC boots

Respiratory protection : Chemical filter respirator (in case of brief exposure). In case of longer exposure, use a self-contained breathing apparatus.
Hand protection: Rubber gloves (PVC)

Thermal hazards : Not available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid

Color: White

Odor: No specific odor

Melting point/freezing point: Not available

Boiling point or initial boiling point and boiling range: 144 °C (50% solution)

Flammability: Non-flammable

Lower and upper explosive/flammability limits: Not available

Flash point: Non-flammable

Autoignition temperature: Not available

Decomposition temperature: Not available

pH: Not applicable

Viscosity: 50 cp

Solubility: Soluble in water.

Partition coefficient – n- octanol /water (log value): Not available

Vapor pressure: 13mmHg at 60ºC

Density and/or relative density: 1.5 kg/L

Relative vapor density: Not available

Particle characteristics: Not available

10. STABILITY AND REACTIVITY

Reactivity: Not Available.

Chemical stability: Stable under normal storage conditions.

Possibility of hazardous reactions: Reacts violently with strong acids, halogenated organic compounds and nitrogenous organic compounds.

Conditions to avoid: Avoid contact with leather, wool, water, and humidity. The product can slowly absorb moisture from the air and react with $CO2_{in}$ the air to form sodium carbonate.

Incompatible materials: Reacts with strong acids. Reacts violently with water.

Hazardous decomposition products: Sodium Oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: In contact with skin and/or eyes, causes severe burns

Skin corrosion/irritation: Causes severe skin burns

Serious eye damage/eye irritation: Causes severe eye burns

Respiratory or skin sensitization: May cause respiratory irritation

Germ cell mutagenicity: Conclusion: not sufficient for classification

Carcinogenicity: Conclusion not sufficient for classification

Reproductive toxicity: Conclusion not sufficient for classification

Specific target organ toxicity - single exposure: Conclusion: not sufficient for classification

Specific target organ toxicity - repeated exposure: Conclusion not sufficient for classification

Aspiration hazard: Conclusion: Not sufficient for classification

Other information: Very toxic to aquatic organisms, with long-lasting effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Not classified as toxic. Large spills can cause harm to aquatic life and water quality.

Persistence and degradability : Not available

Bioaccumulative potential : Not available

Mobility in soil: Soluble in water – Final destination of the product: Not available

Other adverse effects: Do not allow to enter septic tanks, rivers and rainwater.

13. CONSIDERATIONS ON FINAL DESTINATION

Recommended methods for final disposal

Product:

Keep any leftover product in its original, properly sealed packaging. Do not dispose of it in sewage systems, waterways, or wastewater treatment plants.

Packaging used:

Do not reuse empty packaging. Packaging should be washed and neutralized. Improper disposal of empty packaging and product residues in the environment causes soil, water, and air contamination, harming fauna, flora, and human health.

14. TRANSPORTATION INFORMATION

National and international regulations

LAND: ANTT - National Land Transportation Agency:

Resolution No. 5,998, of November 3, 2022: Updates the Regulation for the Road Transportation of Dangerous Products, approves its Supplementary Instructions, and provides other measures.

UN Number: 1823

Proper shipping name: SODIUM HYDROXIDE, SOLID

Risk number: 80

Main risk class or subclass: 8

Packing group: II

WATERWAY: DPC - Directorate of Ports and Coasts (Transportation in Brazilian waters). Maritime Authority Regulations:

NORMAM 01/DPC: Vessels Used in Navigation on the Open Sea.

NORMAM 02/DPC: Vessels Used in Inland Navigation.

NORMAM 05/DPC: Material Approval.

IMO - International Maritime Organization :

IMDG Code - International Maritime Dangerous Goods Code (International Maritime Dangerous Goods Code).

UN Number: 1823

Proper shipping name: SODIUM HYDROXIDE, SOLID

Risk number: 80

Main risk class or subclass: 8

Packing group: II

Dangerous to the environment: Yes

AIR: ANAC - National Civil Aviation Agency: Resolution No. 714, of April 26, 2023. RBAC (Brazilian Civil Aviation Regulation) No. 175:

Transportation of Dangerous Goods on Civil Aircraft.

IS No. 175-001 - Supplementary Instruction.

ICAO (International Civil Aviation Organization):

Doc 9284 AN/905 (Technical Instructions for the Safe Transport of Dangerous Goods by Air).

IATA - International Air Transport Association (International Air Transport Association):

DGR - Dangerous Goods Regulation (Dangerous Goods Regulation).

UN Number: 1823

Proper shipping name: SODIUM HYDROXIDE, SOLID

Risk number: 80

Main risk class or subclass: 8

Packing group: II

Specific precautionary measures and conditions: Not applicable

15. REGULATORY INFORMATION

Specific safety, health and environmental regulations for the chemical:

BRAZIL – MINISTRY OF LABOR AND EMPLOYMENT – NR 26.

BRAZIL – MINISTRY OF TRANSPORTATION – ANTT.

BRAZIL – ABNT NBR 14725

16. OTHER INFORMATION

Important information, but not specifically described in the previous sections:

This SDS was prepared based on current knowledge of the chemical product and provides information on protection, safety, health and the environment.

Please note that handling any chemical substance requires prior knowledge of its hazards by the user. It is the responsibility of the company using the product to train its employees and contractors regarding the potential risks posed by the product.

References: [ABNT] BRAZILIAN ASSOCIATION OF TECHNICAL STANDARDS NBR 14725.

[BRAZIL] BRAZIL. Ministry of Transport. National Land Transport Agency.

[ECHA] European Union. ECHA European Chemical Agency

Subtitles and abbreviations: ACGIH – American Conference on of Governmental Industrial Hygienists , CAS – Chemical Abstracts Service

[OSHA] - Occupational Safety and Health Administration

[NIOSH] - National Institute for Occupational Safety and Health

[NR] – Regulatory Standard – NR 15 Unhealthy Activities and Operations

[LT] – Tolerance Limit