MSDS

CAUSTIC SODA IN FLAKES

SECTION 1: Chemical identity

1.1. Product identification

Product name	Anhydrous caustic soda - flakes
Synonyms	Sodium hydroxide
CAS number	1310-73-2
Product code	LC23900

1.2. Recommended uses and restrictions

Substance use	Industrial use
Industrial use	Laboratory chemicals
Use restrictions	Not for drugs or home use

1.3. Company information

Supplier	SAISA CHEMICALS
Adress	C. JUAN HURTADO DE MENDOZA 15, 1º POST 28036 MADRID (SPAIN)
Phone	+34 91345 94444
Email	saisa@saisa.es
Emergency pone	+34 9156 20420

SECTION 2: Identification of risks

2.1. Classification of the substance or mixture

US GHS Classification	
Skin corrosion/irritation	H314 Causes skin burns and eye damage.
Eye injuries	H318 Causes serious eye damage
Dangerous to the aquatic environment	H402 Harmful to aquatic life

2.2. GHS label elements, including precautionary statements

US GHS Label

Hazard Pictogram (GHS-US)

One word (GHS-US)	Hazard
Hazard Statement (GHS-US)	H314- Causes skin burns and eye damage. H402 - Harmful to aquatic life
Consejos de prudencia (GHS-US)	P260 – Do not breathe mist, vapors, spray P264 – Wash exposed skin thoroughly after handling P273 – To avoid it's releasing into the environment P280 – Wear protective gloves, protective clothing, eye protection, face protection. P301+P330+P331 - If swallowed: rinse mouth. Do not induce vomiting. P303+P361+P353 – IN CASE OF CONTACT WITH SKIN (on hair): immediately remove all contaminated clothing. Rinse skin with water/shower.

Remove contact lenses, if you have them
And it's easy to do it. Continue rinsing

P310 – Immediately call a poison control center or doctor.
P363 – Wash the contaminated clothing before using it again
P405 – Keep locked up
P501 – Discard contents/container to comply with applicable regulations

2.3. Other hazards — No additional information available

2.4. Unknown acute toxicity — NA

SECTION 3: Composition/ingredient information

3.1. Substance
Mono-constituent

Nome	Product ID	%	Clasification GHS-US
Sodium hydroxide (main constituente)	CAS Nº 1310-73-2	100	Corr Skin 1A, H314 Presa del ojo 1, H318 Acúatico agudo 3, H40

3.2. Mixture

Finished product specification — Caustics soda in flakes

Chemical analysis

PARAMETRES	SPECIFICATION
Caustic soda as NaOH% by weight	≥ 97.5 wet base (≥ 99.6 dry base)
Carbonate as Na_2CO_3% by weight	0.40
Sulfate as Na_2SO_4 ppm max	200
Iron as Fe^{+2} ppm max	10
Chloride as NaCl ppm max	200
Copper as Cu^{+2} ppm max	4.0
Nickel as Cu^{+2} ppm max	5.0
Manganese as Mn^{+2} ppm max	4.0
Silicate as SiO_2 ppm max	20
Insoluble in water ppm max	200

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation — If a person breathes in a large amount of fumes/vapors from this chemical, move the exposed person to fresh air immediately. Provide emergency airway support. Administer 100% humidified supplemental oxygen with artificial respiration, if necessary. Transport to emergency medical center without delay.

Skin — If this chemical comes into contact with your skin, immediately rinse contaminated skin with plenty of water for at least 15 minutes. If this chemical gets on your clothing, immediately remove your clothing and rinse your skin thoroughly with water. Get medical attention immediately.

Eyes — If this chemical has been ingested and the person is conscious, giving water and/or milk immediately to dilute the caustic soda no more than 8 ounces in adults and 4 ounces in children is recommended to minimize the risk of vomiting. Do not try to make the person vomit. Get emergency medical attention right away.

Intake	If this chemical has been ingested and the person is conscious, giving water and/or milk immediately to dilute the caustic soda no more than 8 ounces in adults and 4 ounces in children is recommended to minimize the risk of vomiting. Do not try to make the person vomit. Get emergency medical attention right away.

4.2 Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation:	WHEN PROCESSED: dry/sore throat. cough Irritation of the respiratory tract. Irritation of the nasal mucosa. BY CONTINUOUS EXPOSURE/CONTACT. Respiratory difficulties. THE FOLLOWING SYMPTOMS MAY APPEAR LATER: POSSIBLE EDEMA OF THE UPPER RESPIRATORY TRACT. Possible laryngeal spasm/edema. Risk of lung edema.
Symptoms/effects of skin contact	Blisters. Caustic burns/Skin corrosion. Slow healing wounds.
Symptoms/effects of eye contact	Symptoms/effects of eye contact
Symptoms/effects after ingestion	Dry/stored throat. Nausea. Abdominal pain. Blood in vomit. Difficulty to swallow. Possible esophageal perforation. Burns in the gastric/intestinal mucosa. Bleeding from the gastrointestinal tract. Shock.
Chronic symptoms	DUE TO PROLONGED/REPEATED EXPOSURE/CONTACT: dry skin. Skin rash/inflammation. Possible inflammation of the airways. Gastrointestinal discomfort.

SECTION 5: Firefighting measures

5.1. Suitable (and unsuitable) extinguishing media

Fire extinguishing procedure/media fire extinguishing	Caustic soda is not combustible. Avoid direct contact of Caustic Soda with water, as this can produce a violent exothermic reaction. Use a fighting agent suitable for the surrounding fire to extinguish the fire. Use carbon dioxide or a suitable dry chemical extinguisher. Structural firefighter protective clothing is recommended only for fire situations, it is not effective in spills. Wear full protective clothing and a NIOSH-approved self-contained respirator with a full facepiece in positive pressure mode.
Special information	Caustic soda will react with metals such as aluminum, tin and zinc to generate flammable and explosive hydrogen gas.

5.2. Specific hazards arising from chemicals

Fire danger	DIRECT FIRE HAZARD: non-combustible. INDIRECT FIRE HAZARD: reactions involving a fire hazard: see "reactivity hazard"
Explosion hazard	HAZARD OF INDIRECT EXPLOSION: reactions with danger of explosion: see "hazard of reactivity"
Reactivity	May be corrosive to metals. Absorbs atmospheric CO^2. Violent to explosive reaction with (some) acids. Reacts violently with many compounds: release of heat that increases the risk of fire or explosion. Violent exothermic reaction with water (humidity): release of corrosive mist. Reacts exothermically due to exposure to water (humidity) with combustible materials: risk of sports ignition.

5.3. Special protective equipment and preparations for firefighters

Fire Safety Stockings	Fire/Heat Exposure: Keep upwind. Fire/heat exposure: consider evacuation. Fire/Heat Exposure: Have neighbors close doors and windows.

Firefighting instructions	Cool tanks/drums with water spray/remove to a safe place. Upon cooling/extinguishing: there is no water in the substance. Be aware of the toxic extinguishing water. Use water sparingly and, if possible, collect or contain it.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedure

General measures	Absorb spills to prevent property damage. Dike and contain the spill.

6.1.1 For non-emergency personnel

Protective equipment	Gloves. Mask. Corrosion proof suit. Production of dust clouds: compressed air/oxygen apparatus. Contact with humidity/water, compressed air/oxygen device. Contact with humidity/water: gas-tight suit.
Emergency procedures	Mark the danger zone. Avoid the formation of dust clouds. Corrosion proof appliances. Keep containers closed. Avoid water entering containers. Wash contaminated clothing. In contact with moisture/water: keep upwind. In contact with humidity/water: consider evacuation. In case of dangerous reactions: keep upwind. In case of danger of reactivity: consider evacuation.
Measures in case of dust release	In case of dust production: keep upwind. Dust production: have neighbors close doors and windows.

6.1.2. For emergency services

Protective equipment	Equip cleaning crew with proper protection. Do not breathe the dust.
Emergency procedures	Stop release

6.2. Environmental precautions

Prevent soil and water pollution.	Avoid spread in sewers.

6.3. Containment and cleaning methods and materials

Para contención	Contain the released product, pump to suitable containers. Plug the leak, turn off the supply. Contain spilled solids. Dangerous reaction: measure explosive gas-air mixture. Reaction: fuel gas/vapor diluted with a curtain of water.
Methods for cleaning	Pick up spill only if it is dry. Wet substance: cover with powdered limestone or dry sand, earth, vermiculite. Pour solid spill into closing container. Under controlled conditions: neutralize leftovers with acid silute solution. Possible violent reaction if neutralized. Carefully pick up spills/leftovers. Clean contaminated surfaces with excess water. Take the collected spill to the manufacturer/competent authority. Wash clothing and equipment after handling.6.4. Referencia a otras secciones

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Manipulation and storage	Precautions for safe handling. Do not get into eyes, skin or clothing. Do not breathe vapors, mist or spray. Wear appropriate personal protective equipment. This product can be added slowly to water or acids with dilution and constant stirring to avoid a violent exothermic reaction. Full protective clothing must be worn. Avoid contact with aluminum, tin, zinc and alloys containing these metals. Do not mix with strong acids without dilution and stirring to avoid violent or explosive reactions (boiling and splashing). Do not remove or deface labels or labels on containers. Always empty and clean containers of all residue before adding product to avoid an explosive reaction caused by product and unknown residue. Returnable containers must be shipped in accordance with the supplier's recommendations. Storage conditions, including possible incompatibilities: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep storage away from extremely high or low

temperatures and incompatible materials. Incompatible materials: strong acids. Strong oxidizers. Metals.

7.2. Conditions for safe storage, including possible compatibilities

Incompatible products:	Combustible materials, metals. Strong acids. Strong oxidizers. Protect from humidity.
Incompatible materials:	Incompatible materials. Humidity. Heat sources.
Storage temperature:	20ºC
Heat or ignition source:	KEEP SUBSTANCE AWAY FROM: heat sources
Mixed storage prohibitions:	KEEP SUBSTANCE AWAY FROM: combustible materials, oxidizing agents (strong) acids, metals, organic materials, water/moisture.
Storage area:	Store in a dry area. Keep the container in a well-ventilated place. He's still locked up. Unauthorized people are not allowed. Store at room temperature. Store only in the original container. Comply with legal requirements.
Special packaging rules:	SPECIAL REQUIREMENTS: airtight, watertight, anticorrosive, dry, clean. Correctly labeled. Comply with legal requirements. Secure fragile packaging in solid containers.
Packaging materials:	SUITABLE MATERIAL: stainless steel, nickel, polyethylene, paper. MATERIAL TO AVOID: lead, aluminum, copper, tin, zinc, bronze, textile.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Sodium hydroxide (1310-73-2)

ACGIH ceiling (mg/m³)	2mg/m³
OSHA PEL (TWA) (mg/m³)	2mg/m³
US IDHL (mg/m³)	10mg/m³
NIOSH REL (ceiling) (mg/m³)	2mg/m³

8.2. Appropriate engineering controls

Appropriate engineering controls	Emergency eyewash fountains and safety showers should be available in the immediate vicinity of a potential exposure. Provide general and local ventilation.

8.3. Individual protection measures/personal protective equipment

Personal protective equipment: Safety glasses. Protective clothes. Gloves. Dust/aerosol mask with type P3 filter. Materials for protective clothing: GIVE GOOD RESISTANCE: natural rubber, neoprene, nitrile rubber. GIVE LESS RESISTANCE: polyethylene butyl rubber. PVA. GIVE POOR RESISTANCE: natural fibers. Hand protection: Gloves Eye protection: Face shield. In case of dust production: protective glasses. Skin and body protection: Corrosion-proof clothing. In case of dust production: head/neck protection. Respiratory protection: Dust production: dust mask with type P3 filter. High dust production: self-contained breathing apparatus.

SECTION 9: Physical and chemical properties

9.1. SECTION 9: Physical and chemical properties

Physical state:	Solid
Appearance:	Crystalline solid. Crystalline powder. Small spheres. Lumps. Needles. Scale. Scales.
Colour:	White
Odor:	Odorless
Odor threshold:	No data available
pH:	14 (5%)
Melting point:	323°C
Freezing point:	No data available
Boiling point:	1388°C (1013.25 hPa)
Flash point:	NA
Relative evaporation rate (butyl acetate=1)	No data available
Flammability (solid, gas)	No data available
Vapor pressure	< 0,1 hPa (20°C)
Relative vapor density at 20°C	No data available
Relative density	2.13 (20°C)
Density	2130 kg/m³
Molecular mass	40 g/mol
Solubility	Exothermically soluble in water. Soluble in ethanol. Soluble in methanol. Soluble in glycerol. Water: 100 g/100 ml (25°C) Ethanol: soluble
Registration pow	No data available
Autoignition temperature	Not applicable
Autoignition temperature	No data available
Kinematic viscosity	0.53 mm²/s (25°C, 1 mol/l)
Viscosity, dynamic	0.997 mPa.s (25°C, Test data)
Explosive limits	No data available
Explosive properties	NA
Oxidizing properties	NADA
Minimum ignition energy	NA
Saturation concentration:	671 g/m³
VOC content:	Not applicable (inorganic)
Aspect	Translucent. Hygroscopic. The substance has a basic reaction.

9.2. Other information

Minimum ignition energy	NA
Saturation concentration:	671 g/m³
VOC content:	Not applicable (inorganic)

SECTION 10: Stability and reactivity

10.1. Reactivity

May be corrosive to metals.

Absorbs atmospheric CO2. Violent to explosive reaction with (some) acids. Violent reaction with many compounds: release of heat that increases the risk of fire or explosion. Violent exothermic reaction with water (humidity): release of corrosive mist. Reacts exothermically upon exposure to water (humidity) with combustible materials: risk of spontaneous ignition.

10.2. Chemical stability

Hygroscopic. Unstable upon exposure to air.

10.3. Possibility of risk reactions

Reacts violently with acids. Reacts violently with water.

10.4. Conditions to avoid

Humidity. incompatible materials.

10.5. Incompatible materials

Water. Strong oxidizers. Strong acids, metals, combustible materials.

10.6. Hazardous decomposition products	Óxido de sodio

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Probable routes of exposure	Contact with skin and eyes.
Acute toxicity	Acute toxicity
Skin corrosion/irritation	Causes severe skin burns and eye damage. pH: 14 (5%)
Serious eye damage/irritation:	Causes serious eye damage pH: 14 (5%)
Respiratory or skin sensitization:	Not qualified
Mutagenicity in germ cells:	Not qualified
Carcinogenicity:	Not qualified
Reproductive toxicity:	Not qualified
Specific target organ toxicity (single exhibition)	Not qualified
Specific target organ toxicity (single exhibition)	Not qualified
Aspiration hazard	Not qualified
Possible adverse effects and symptoms for human health	Causes severe skin burns. Causes serious eye injuries.
Symptoms/effects after inhalation:	WHEN PROCESSED: dry/sore throat. cough Irritation of the respiratory tract. Irritation of the nasal mucosa. IN CONTINUOUS EXPOSURE/CONTACT: breathing difficulties. THE FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible edema of the upper respiratory tract. Possible laryngeal spasms/edema. Risk of pulmonary edema.
Symptoms/effects after eye contact:	Corrosion of eye tissue. Permanent eye damage.
Symptoms/effects after ingestion:	Dry/sore throat. Nausea. Abdominal pain. Blood in vomit. Difficulty to swallow. Possible esophageal perforation. Burns in the gastric/intestinal mucosa. Bleeding from the gastrointestinal tract. Shock.
Chronic symptoms:	DUE TO PROLONGED/REPEATED EXPOSURE/CONTACT: dry skin. Skin rash/inflammation. Possible inflammation of the airways. Gastrointestinal discomfort.

SECTION 12: Ecological information

12.1. Toxicity

General ecology	Not classified as dangerous for the environment according to the criteria of Regulation (EC) No. 1272/2008
Air ecology:	Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No. 1005/2009).
Water ecology:	Harmful to crustaceans. Harmful to fish. Groundwater contaminant. pH change.
Sodium hydroxide (1310-73-2)	
LC50 fish 1	45.5 mg/l (other, 96h, salmo gairdneri, static system, fresh water, experimental value)
EC50 Daphnia 1	40.4 mg/l (otro, 48h, ceriodaphnia sp, experimental value

12.2. Persistence and degradability

Sodium hydroxide (1310-73-2)	
Persistence and degradability	Biodegradability: not applicable
Biochemical oxygen demand (BOD)	NA (inorganic)
Chemical oxygen demand (COD)	NA (inorganic)
ThOD	NA (inorganic)

12.3. Bioaccumulative potential

Sodium hydroxide (1310-73-2)	
Bioaccumulative potential	Not bioaccumulative

12.4. Mobility on the ground

Sodium hydroxide (1310-73-2)	
Ecology -soil	No data (tests) on the mobility of the substance available

12.5. Other adverse effects: No information available

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Recommendations for removal waste	Do not pour into drains or into the environment. Remove waste in accordance with local and/or NATIONAL REGULATIONS. Hazardous waste will not be mixed with other waste. Different types of hazardous waste should not be mixed if this could pose a risk of contamination or create problems for subsequent waste management. Hazardous waste will be managed responsibly. All entities that store, transport or handle hazardous waste must take the necessary measures to prevent risks of contamination or damage to people or animals. It should not be deposited in landfills with household waste. Recycle/reuse. Diluted. Neutralize.
Additional Information:	Hazardous waste according to Directive 2008/98/EC, modified by Regulation (EU) No. 1357/2014 and Regulation (EU) No. 2017/997.

SECCIÓN 14: Información de transporte

Department of Transportation (DOT) According to DOT	
Description of the transport document	UN1823 Sodium hydroxide, solid 8, II
ONU-No (DOT)	UN1823
Proper Shipping Name (DOT)	Sodium hydroxide, solid
Transportation Hazard Class(es) (DOT)	8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT)	II- Medium danger
Hazard labels (DOT)	Corrosive
DOT non-bulk packaging (49 CFR 173.xxx)	212
Bulk DOT Packaging (49 CFR 173.xxx)	240
DOT Special Provisions (49 CFR 172.102)	IB8 - Authorized GRGs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); compound (11HZ1, 11HZ2, 21HZ1, 21HXZ2, 31HZ1 AND 31HZ2); fiberboard (11G); wood (11C, 11D and 11F); flexible (13H1, 13H2, 13H3, 13H4, 13H5; 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP2- Where IBCs other than metal or rigid plastic are used, they must be offered for

	transport in a closed cargo container or closed transport vehicle. IP4: Flexible cardboard or wooden IBCs must be dust-tight and water-resistant or equipped with a dust-tight and water-resistant coating. T3 -2.65 178.274 (d)(2) Normal..... 178.275(d)(2) TP33 -The portable tank instruction assigned for this substance applies to granular and powder solids and to solids that are They are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their meeting point are authorized for transport in portable tanks in accordance with the provisions of the portable tank instruction. T4 for solid materials of packing group III or T7 for solid materials of packing group II, unless a tank is assigned with more stringent requirements for minimum shell thickness, maximum allowable working pressure, relief devices pressure or lower outlets, in which case the stricter tank instructions and special provisions will apply. Filling limits must be in accordance with special provision TP3 for portable tanks. Solids that meet the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
Packaging exceptions DOT (49 CFR 173.xxx)	154
DOT Quality Limitations for Aircraft/ passenger railroads (49 CFR 173.27)	15 Kgs
DOT Aircraft/Quality Limitations freight railroads (49 CFR 173.27)	50 Kgs
DOT Vessel Stowage Location	A - Material can be stowed "on deck" or "under the table" on a cargo ship and a passenger ship.
DOT Vessel Stowage Other	52 - Stowage "separate from" acids
Other information	No additional information available

SECTION 15: Regulatory information

OSHA Regulatory Status: This material is considered hazardous under the OSHA Hazard Communication Standard (29 CFR. 1910.1200) (US)

SECTION 16: Other information

Packaging	HDPE Bags
Disclaimer	Although reasonable care has been taken in the preparation of the document, we make no warranties or representations as to the accuracy or completeness of the information contained in this document, and we assume no responsibility with respect to the suitability of this information for intended purposes of the user or for the consequences of its use. Each individual must make a determination as to the suitability of the information for his or her particular purpose(s).
Full text of H-phrases	
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage
H402	Harmful to aquatic life
NFPA Hazardous Health Injuries:	3 - Materials that, under emergency conditions, can cause serious or permanent injuries.
NFPA fire hazard	0 - Materials that will not burn under typical extreme conditions, including inherently non-combustible materials such as concrete, stone and sand.
NFPA reactivity	
Hazard classification	1- Materials that are normally stable in themselves but can become unstable at elevated temperatures and pressures
Health	3 - Serious Hazard: Serious injury is likely unless immediate action is taken and medical treatment is provided.
Inflammability	0- Minimal risk: materials that do not burn

Physical	1 - Mild risk: materials that are normally stable but can become unstable (react on their own) at high temperatures and pressures. The material may react nonviolently with water or undergo dangerous polymerization in the absence of inhibitors.
Personal protections	H - splash goggles, gloves, synthetic apron, vapor respirator.