SAISA CHEMICALS S.A.
C. JUAN HURTADO DE MENDOZA 15, 28036 MADRID (SPAIN)
+34913459444 - saisa@saisa.es - www.saisa.es

CAUSTIC SODA FLAKES

SECTION 1: Chemical Identity

1.1. Product name:

1.1. Product name:	Caustic Soda Anhydrous -flakes
Synonyms	Sodium Hydroxide
Formula	NaOH
CAS N°	1310-73-2
CAS number:	144-55-8
Product code:	LC23900

1.2. Recommended use and restrictions

Use of substance	Industrial use
Recommended use:	Laboratory chemicals
Restriction on use	Not for drug or household use

1.3. Company information

Importer:	SAISA CHEMICALS S.A.
Address:	C. JUAN HURTADO DE MENDOZA 15, 1º POST 28036 MADRID (ESPAÑA)
Telephone number:	0034913459444
Emergency number:	0034915620420
e-mail:	saisa@saisa.es

SECTION 2: Hazards identification.

2.1. Classification of the substance or mixture
GHS US Classification

Skin corrosion/irritation	H314 Causes skin burns and eye damage
Serious eye damage/eye irritation Hazardous to the aquatic environment Full text of H statements: see section 16	H318 Causes serious eye damage H402 Harmful to aquatic life

2.2. GHS label elements including precautionary statements

GHS US labeling	
Hazard pictograms (GHS-US)	
Single Word (GHS-US) Hazard Statements (GHS-US):	Danger H314 - causes skin burns and eye damage H402 - Harmful to aquatic life
Precautionay Statements (GHS - US):	P260 - do not breathe mist, vapors, spray P264 - wash exposed skin thoroughly after handling P273 - avoid release to the environment P280 - wear protective gloves, protective cclothing, eye protection, face protection. P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vominting P303+P361+P353 - IF ON SKIN (on hair): remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
ermove contact lenses, if present and easy to do. Continue rinsing	P310 - Immediately call a poison center or doctor/physician P363 - Wash contaminated clothing before reuse. P405 - Store locked up P501 - Dispose of contents/container to comply with applicable regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No applicable

SECTION 3: Composition/information on ingredients.

3.1. Substances.
Mono-constituent

Name	Product Indeitifier	%	GHS-US classification
Sodium Hydroxide (Main constituent)	(CAS -Nº) 1310-73-2	100	Skin Corr. 1A, H314 Eye Dam 1, H318 Aquatic Acute 3, H402

3.2. Mixtures.

Finished product spacification	Caustic Soda Flakes
Chemical Analysis	
PARAMETERS	SPECIFICATION
Caustic soda as NaOH wt%	≥ 97.5 wet basis (≥ 99.6 dry basis)
Carbonate as Na_2CO_3 wt%	0.40
Sulphate 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
Water insolubles ppm max	200

SECTION 4: First Aid Measures

4.1. Description of first aid maesures

Inhalation	If a person breathes a large amount fumes/vapors of this chemial, move the exposed person to fresh air at once. Provide emergency airway support. Give 100% humidified supplemental oxygen with artificial respiration, if needed. Transport to emergency medical facility wothout delay.
Skin	If this chemical contact the skin, immediately flsuh the contaminated skin thoroughly with water for at least 15 minutes. If this chemical penetrates the clothing, immediately remove the clothing and flush the skin thoroughly with water. Get medical attention prmptly.
Eyes	If this chemical has been swallowed and the person is conscious, give water and/or milk inmediately 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 attempt to male the person vomit. Get emergency medical attention immediately.
Ingestion	If this chemical contacts the eyes, immediately flush the eyes with large amounts of water at room temperature. Hold the eyelids apart during the flushing operation. Washing must be started within. 10 seconds of contact and continued for 30 minutes to prevent permanet injury. Tet medical attention immediately. Ophthalmology consultation is a must.

4.2. Most important symptoms and efects (acute and delayed)

Symptoms/effects after inhalatic	WHEN PROCESSED: dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. ON CONTINUOSU EXPOSURE/CONTACT. Respiratory difficulties. FOLLOWING SYMPTOMS MAY APPEAR LATER: POSSIBLE OEDEMA OF THE UPPER RESPIRATORY TRACT. Possible laryngeal spasm/oedema. Risk of lunk oedema.
Symptoms/effects skin contact	Blisters. Caustic burns/Corrosionof the skin. Slow-healing wounds
Symptoms/effects eye contact	Corrosion of the eye tissue. Permanet eye damage.
Symptoms/effects after ingestion	Dry/Store throat. Nausea. Abdominal pain. Blood in vomit. Difficulty in swallowing. Possible esophageal perforation. Burns to the gastric/intestinial mucosa. Bleeding of the gastrointestinal tract. Shock.
Chronic symptoms	ON CONTINUOS/REPEATED EXPOSURE/CONTACT: dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract. Gastrointestinal complaints.

4.3. Immediate medical attention and special treatment, if necessary

Obtain mdical assistance

SECTION 5: Fire Fighting Measures

5.1. Suitable (and unsuitable) extinguisisng media

Firefighting procedure/fire extinguishinbg media	Caustic Soda is not combustible. Avoid direct contact of Caustic Soda with water, as this can produce a violent exothermic reaction. Use fighting agent suitable for surrounding fire to extinguish fire. Use carbon dioxide or suitable dry chemical extinguisher. Structural fire fighter's protective clothing is recommeded for fire situations only, it is not effective in spills. Wear full protective clothing and NIOSH aprroved self-cointained respiratior, with a full-face ppiece, in the positive pressure mode.
Special Information	Caustic Soda will react with metals such as aluminium, tin and zinc to generate flammable and explosive hydrogen gas.

5.2. Specific hazards arising from the chemical

Fire hazard	DIRECT FIRE HAZARD: non combustible. INDIRECT FIRE HAZARD: reactions involving a fire hazard: see "reactivity hazard"
Explosion hazard	INDIRECT EXPLOSION HAZARD: reactions with explosion hazards: see "reactivity hazard"
Reactivity	May be corrosive to metal.s Absorbs the atmospheric CO^2. Violent to explosive reaction with (some) acids. Reacts violently with many compounds: heat release resulting in increased fire or explosion risk. Violent exothermic reaction with water (moisture): release of corrosive mist. Reacts exothermically on exposure to water (moisture) with combustible materials: risk of sportaneous ignition.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighborhood close doors and windows
Firefighting intructions	Cool tanks/drums with water spray/remove them into safety. Wehen cooling/extinguishing: no water in the substance. Take account of toxic fire-fighting water. Use water moderately and if possible, collect or contain it.
Protection during firefighting	Heat/fire exposure: compressed air/ oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	Absorb spillage to prevent material damage. Dike and contain spill.

6.1.1. For non-emergency personnel

Protective equipment	Gloves. Face -shield. Corrosion-proof suit. Dust cloud producion: compressed air/oxygen apparatus. Contact with moisture/water compressed air/oxygen apparatus. Contact with moisture/water: gas-tight-suit.
Emergency procedures	Mark the danger area. Prevent dust cloud formation. Corrosion-proof appliances. Keep containsers closed. Avoid ingress of water in the containers. Wash contaminated clothes. On contact with moisture/water: keep upwind. On contactwith moisture/water: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
Measures in case of dust release	In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.1. For emergency responders

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

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	Contain released product, pump onto suitable contianers. Plug the leak,cut off the supply. Dam up the solid spill. Hazardous reaction: measureexplosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.
Methods for cleaning up	Collect the spill only if it is in a dry state. Wetted substance: cover with powderer limestone or dry sand, earth, vermiculite. Scoop solid spill into closing container. Under controlled conditions: neutralize leftovers with silute acid solution. Possible violent reaction if you neutralize. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Hadling and storage	Precautions for safe handling. Do not get in eyes, on skin, or on clothing. Do not breathe vapors, mist, or spray. Wear proper personal protection equipment. This product may be added slowly to water or acids with dilution and constant stirring to avoid a violent exothermic reaction. Full protective clothing should be worn. Avoid contact with aluminium, tin, zinc and alloys containing these metals. Do not mix with strong acids withoit dilution and agiation to prevent violent or explosive reaction (boiling and spattering). Do not remove or deface label or tags from the containers. Always empty and clean containers of all residues before adding product to avoid potencia explosive reaction caused by product and inknown residue. Returnable containers should be shipped in accordance with supplier's recommendations. Storage conditions, including any incompatibilities: store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep store away form extremely high or low temperatures and incompatible materials. Incompatoble Materials: strong sacids. Strong oxidizers. Metals.

7.2. Conditions for safe storage, including any cincompatibilities

Incompatible products:	Combustible materials, metals. Strong acids. Strong oxidizers. Protect from moisture.
Incompatible materials:	Incompatible materials. Moisture. Heat sources.
Storage temperature:	20ºC
Heat and ignition sources:	KEEP SUBSTANCE AWAY FROM: heat sources
Prohibitions on mixed storage:	KEEP SUBSTANCE AWAY FROM: combustible materials, oxidizing agents (strong) acids, metals, organic materials, water/moisture
Storage area:	Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Unauthorized persons are not admitted. Store at ambient temperature. Keep only in the original container. Meet the legal requirements.
Special rules on packaging:	SPECIAL REQUIREMENTS: hermetical, watertight, corrosion-proof, dry, clean. Correctly labelled. Meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials:	SUITABLE MATERIAL: stainless steel, nickel, polyethylene, paper. MATERIAL TO AVOID: lead, aluminium, copper, tin, zinc, bronze, textile.

SECTION 8: Exposure controls/personal protection

8.1. Control parametres

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. Apropriate engineering controls

Apropriate engineering controls	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of anu potential exposure. Provide adequate general and local exhaust ventilation.

8.3. Individual protection measures/personal protective equipment

Personal protective equipment: Safety glasses. Protective clothing. Gloves. Dust/aerosol mask with fiulter type P3. Materials for protective clothing: GIVE GOOD RESISTANCE: natural rubber, neoprene, nitrile rubber. GIVE LESS RESISTANVCE: butyl rubber polyethylene. PVA. GIVE POOR RESISTANCE: natural fibres. Hand protection: Gloves Eye protection: Face shield. In case of dust production: protective goggles. Skin and body protection: Corrosio-proof clothing. In case of dust production: head/neck protection. Respiratory protection: Dust production: dust mask with filter type P3	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Solid
Appearance:	Cristalline solid. Crystalline powder. Little spheres. Lumps. Needles. Scale. fLakes.
Colour:	White
Odour:	Odourless
Odour threshold:	No data available
pH:	14 (5%)
Melting point:	323ºC
Freezing point:	No data available
Boiling point:	1388ºC (1013.25 hPa)
Flash point:	Not applicable
Realtive evaporation rate (butylacetate=1)	No data available
Flammability (solid, gas)	No data available
Vapour pressure	< 0,1 hPa (20ºC)
Relative vapour density at 20°C	No data available
Relative density	2.13 (20ºC)
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 (25ºC)Ethanol: soluble
Log Pow	No data available
Auto-ignition temperature	Not applicable
Decomposition temperature	No data available
Viscosity, kinematic	0.53 mm²/s (25ºC, 1 mol/l)
Viscosity, dynamic	0.997 mPa.s (25ºC, Test data)
Explosive limits	No data available
Explosive properties	Not applicable
Oxidizing properties	None

9.2. Other information

Minimum ignition energy:	Not applicable
Saturation concentration:	671 g/m³
VOC content:	Not applicable (inorganic)
Other properties	Translucent. Hygroscopic. Substance has basic reaction.

SECTION 10: Physical and chemical properties

10.1. Reactivity

May be corrosive to metals. Absorbs the atmospheric CO2. Violent to explosive reaction with (some) acids. Reaction violently with many compounds: heat release resulting in increased fire or explosion risk. Violent exothermic reaction with water (moisture): release of corrosive mist. Reacts exothermically on exposure to water (moisture) with combustible materials: risk of spontaneous ignition.

10.2. Chemical stability

Hygroscopic. Unstable on exposure to air.

10.3. Possibility of hazardous reactions

Reacts violently with acids. Reacts violently with water.

10.4. Conditions to avoid

Moisture. Incompatible materials

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Sodium oxide

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure:	Skin and eyes contact
Acute toxicity	Not classified
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 classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Reproductive toxicity:	Not classified
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified
Aspiration hazard	Not classified
Potencial adverse human health effects and symptoms	Causes severe skin burns. Causes serious eye damage.
Symptoms/effects after inhalation:	WHEN PROCESSED: dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. ON CONTINUOUS EXPOSURE/CONTACT: respiratory difficulties. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible oedema of the upper respiratory tract. Possible laryngeal spams/oedema. Risk of lung oedema.
Symptoms/effects after skin contact:	Blisters, caustic burns/corrosion of the skin. Slow-healing wounds.
Symptoms/effects after eye contact:	Corrosion of the eye tissue. Permanent eye damage.
Symptoms/effects after ingestion:	Dry/ sore throat. Neusea. Abdominal pain. Blood in vomit. Difficulty in swallowing. Possible esophageal perforation. Burns to the gatric/intestinal mucosa.. Bleeding of the gastrointestinal tract. Shock.
Chronic symptoms:	ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: dry skin. Skin rash/inflamamtion. Possible inflammation of the respiratory tract. Gastrointestinal complaints.

SECTION 12: Ecological information

12.1. Toxicity

Ecology-general	Not classified as dangerous for the enviroment according to the criteria of Regulation (EC) Nº 1272/2008
Ecology-air:	Not included in the list of flourinated greenhouse gases (Regulation (EU) Nº 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) Nº 1005/2009).
Ecology-water:	Harmful to crustacea. Harmful to fishes. Groundwater pollutant. pH shift.

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 (other, 48h, ceriodaphnia sp, experimental value)
12.2. Persistence and degradability	
Sodium hydroxide (1310-73-2)	
Persistence and degradability	Biodegrdability: not applicable
Biochemical oxygen demand (BOD)	Not applicable (inorganic)
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
12.3. Bioaccumulative potential	
Sodium hydroxide (1310-73-2)	
Bioaccumulative potential	Not bioaccumulative
12.4. Mobility in soil	
Sodium hydroxide (1310-73-2)	
Ecology -soil	No (test) data on mobility of the substance available
12.5. Other adverse effects	
No additional information available	

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations:	Do not discharge into drains or the environment. Remove waste in accordance with local and/OR NATIONAL REGULATIONS. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed resposibly. All entities that store, transport or handle hazardous waste shall take the necessary measure to prevent risks of pollution or damage to people or animals. Should no tbe landfilled with household waste. Recycle/reuse. Dilute. Neutralize.
Additional information:	Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) Nº 2017/997.

SECTION 14: Transport information

Department of transportation (DOT)	
In accordance with DOT	
Transport document description	UN1823 Sodium hydroxide, solid 8, II
UN-No (DOT)	UN1823
Proper shipping name (DOT)	Sodium hydroxide,solid
Trasnport hazard class (es) (DOT)	8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT)	II- Medium danger
Hazard labels (DOT)	8. Corrosive 
DOT Packaging non-bulk (49 CFR 173.xxx)	212
DOT Packaging bulk (49 CFR 173.xxx)	240
DOT Special Provisions (49 CFR 172.102)	IB8 - Autorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); composite (11HZ1, 11HZ2, 21HZ1, 21HXZ2, 31HZ1 AND 31HZ2); fiberboard (11G); wooden (11C, 11D and 11F); flexible (13H1, 13H2, 13H3, 13H4, 13H5; 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP2- when IBCs other than metal or rigidplastics IBC s are used, they must be offered fot transportation in a closed freight container or al closed transport vehicle. IP4 - flexible, fiberboard or wooden IBCsmust be sift-proof and water-resistant or be fitted with a sift -proof and water-resistantliner. T3 -2.65 178.274 (d)(2) Normal..... 178.275(d)(2) TP33 -The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which 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 meting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction. T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be tranported in accordance with the applicable requirements of this subchapter.
DOT Packaging exceptions (49 CFR 173.xxx)	154
DOT Quality limitations passenger aircraft/rail (49 CFR 173.27)	15 Kgs
DOT Quality limitations cargo aircraft/rail (49 CFR 173.27)	50 Kgs
DOT Vessel Stowage Location	A - the material may be stowed "on desck" or "under desk" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	52 - Stow "separated from" acids
Other information	No supplementary information available

SECTION 15: Regulatory information

OSHA Regulatory status: this material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR. 1910.1200) (US)
CERCLA Sections 102a/103 Hazardous substances (40 CFR 302.4)
CERLA Reportable Quantity RQ: 1000 lbs (Pure NaOH)

SECTION 16: Other information

Packing	HDPE Bags
Disclaimer	Although reasonable care has been taken in the preparation of the document, we extend no warranties and make no representation as to the accuracy or completeness of the information contained herein, and assume no resposanbility regarding the the suitablility of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their 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 health hazard injury:	3 - materials that, under emergency conditions, can cause serious or permanet
NFPA fire hazard:	0 - materials that will not burn under typoical dire conditions, including intrinsically noncombustible materials such as concrete, stone and sand.
NFPA reactivity Hazard rating	1- Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.
Health given	3 - Serious hazard- major injury likely unless prompt action is taken and medical treatment is given
Flammability	0- Minimal hazard - materials that will not burn
Physical:	1 - Slight hazard - materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materual smay reactu non - violently with water or undergo hazrdous polymerization in the absence of inhibitors.
Personal protection:	H -splash goggles, gloves, synthetics apron, vapor respirator.