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Version number 3 (replaces version 2)

Revision: 07.10.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: SODIUM HYDROXIDE FLAKES

Chemical Identification: Sodium Hydroxide Caustic soda CAS Number: 1310-73-2 EC number: 215-185-5 Index number: 011-002-00-6 Registration number: 01-2119457892-27-XXXX

# 1.2 Relevant identified uses of the substance or mixture and uses advised against

Sodium hydroxide are in chemical manufacturing (pH control, acid neutralization, off-gas scrubbing and catalyst); pulp and paper manufacturing; in petroleum and natural gas industry (removing acidic contaminants in oil and gas processing); manufacture of soap and detergents and other cleaning products; and celluloses, such as rayon, cellophane and cellulose ethers; cotton mercerizing and scouring. Other uses include water treatment, food processing, fluegas scrubbing, mining, glass making, textile processing, refining vegetable oils, rubber reclamation, metal processing, aluminium processing, metal degreasing, adhesive preparations, paint remover, disinfectant.

Application of the substance / the mixture: Raw Material

# **1.3 Details of the supplier of the safety data sheet Manufacturer/Supplier:**

Kalogeropoulos Chemicals S.A. D. Gounari 35, 185 31 Pireaus, Greece Tel: +30 2104124518 Fax: +30 2104101607 e-mail: info@kalochem.gr website: www.kalochem.gr **1.4 Emergency telephone number:** 



\*

European Emergency Tel.: 112

# **SECTION 2: Hazards identification**

2.1 Classification of the substance or mixture Classification according to Regulation EC No 1272/2008 CLP:

GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

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2.2 Label elements Labelling according to Regulation EC No 1272/2008 CLP: The substance is classified and labelled according to the CLP regulation. Hazard pictograms:



Signal word: Danger

Hazard-determining components of labelling: sodium hydroxide

#### Hazard statements:

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

## **Precautionary statements**

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P260	Do not breathe dust.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.
P405	Store locked up.
2.3 Other hazard	S
<b>Results of PBT a</b>	nd vPvB assessment
PBT: Not applicat	ble.
vPvB: Not applica	able.

#### \*

# SECTION 3: Composition/information on ingredients

3.1 Substances CAS No. Description CAS: 1310-73-2 sodium hydroxide Identification number(s) EC number: 215-185-5 Index number: 011-002-00-6 Specific concentration limits Skin Corr. 1A; H314:  $C \ge 5 \%$ Skin Corr. 1B; H314:  $2 \% \le C < 5 \%$ Skin Irrit. 2; H315:  $0.5 \% \le C < 2 \%$ Eye Irrit. 2; H319:  $0.5 \% \le C < 2 \%$ 

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# **Description:** Substance

# **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

#### **General information:**

When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Immediately remove any clothing soiled by the product.

Take affected persons out into the fresh air.

#### After inhalation:

If breathing is difficult, remove to fresh air. Restore breathing. Keep warm and quiet.

In case of unconsciousness place patient stably in side position for transportation.

Seek medical treatment in case of complaints.

#### After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Remove contaminated clothing.

Seek immediate medical advice.

Wash contaminated clothing before use.

#### After eye contact:

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids.

Check for and remove any contact lenses.

Continue to rinse for 15 minutes.

Get medical attention if irritation occurs.

Avoid strong water jet-risk of cornea damage, consult a doctor.

# After swallowing:

Do not induce vomiting.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

Seek immediate medical advice.

## 4.2 Most important symptoms and effects, both acute and delayed

- By ingestion: severe burns to the digestive tract, risk of perforation of the alimentary canal, state of shock.

- By skin contact: very corrosive for the skin, severe burns, severe lesions, scarring (sometimes retractile), and dermatitis possible in the case of repeated contact.

- By eye contact: corrosive for the eyes, severe lesions possibly with lasting effects if the eyes are not rinsed immediately, harm to all the eye tissues, risk of sight loss.

- By inhalation: corrosive for respiratory tract. Causes severe skin burns and eye damage.

# 4.3 Indication of any immediate medical attention and special treatment needed

Perform endoscopy in all cases of suspected sodium hydroxide ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes and fluid intake are also required. If skin burns are present, treat as any thermal burn after decontamination.

# **SECTION 5: Firefighting measures**

## 5.1 Extinguishing media

# Suitable extinguishing agents:

For large fire use powder, foam extinguishing agents or carbon dioxide. Avoid water use if possible. Adding water to caustic solution generates large amounts of heat and steam!

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## 5.2 Special hazards arising from the substance or mixture

Not considered to be a fire hazard. Sodium hydroxide can react with certain metals, such as aluminum and zinc to generate flammable hydrogen gas. Contact with moisture or water may generate sufficient heat to ignite nearby combustible materials.

# **5.3 Advice for firefighters**

# **Protective equipment:**

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

# Additional information

Collect contaminated fire fighting water separately. It must not enter the sewage system.

## **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Keep unprotected persons away.

Avoid inhalation of dust.

Avoid contact with skin and eyes.

Wear protective clothing.

Avoid contact with spilled material.

6.1.1 For non-emergency personnel

#### Ensure sufficient ventilation.

Use personal protective equipment.

Caution for slippery surfaces.

#### 6.1.2 For emergency responders

First-aid responders must wear protectice clothing, gloves, goggles and respiratory device with filter type A. **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

## 6.3 Methods and material for containment and cleaning up:

Contain and recover when possible. Avoid generating dusty conditions. Do not flush caustic residues to sewer. Residues from spills can be diluted with water, neutralized with diluted acid such as acetic and hydrochloric. Absorb neutralized caustic residues on clay, sand, vermiculite or other absorbent material and place in a chemical waste container for disposal.

Refer to section 13 for disposal of spilled material.

# **6.4 Reference to other sections:**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### **SECTION 7: Handling and storage**

# 7.1 Precautions for safe handling

Thorough dedusting.

Open and handle receptacle with care.

Store in cool, dry place in tightly closed receptacles.

Avoid contact with skin, eyes and clothing.

Prevent formation of dust.

Do not eat, drink or smoke during the usage of the product.

Handle in accordance with good industrial hygiene and safety practice.

Information about fire - and explosion protection: No special measures required.

# 7.2 Conditions for safe storage, including any incompatibilities

Storage: Store the product in closed original containers in a well-ventilated room.

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#### Requirements to be met by storerooms and receptacles:

Store in a cool location.

Incompatible materials: do not store in aluminum, zinc, tin and lead containers.

Incompatible substances: Collocated storage with the following substance is prohibited: explosive substances, strongly oxidizing substances, organic peroxides, acids, organic solvent.

## Further information about storage conditions:

Keep container tightly sealed.

Store under lock and key and with access restricted to technical experts or their assistants only.

#### 7.3 Specific end use(s)

Shelf time: 12 months. Caustic soda is a stable product but its storage life is dependent upon the storage conditions

#### \*

# **SECTION 8: Exposure controls/personal protection**

# **8.1 Control parameters**

# Ingredients with limit values that require monitoring at the workplace:

# CAS: 1310-73-2 sodium hydroxide

WEL (Great Britain) Short-term value: 2 mg/m<sup>3</sup>

#### DNELs

(CAS: 1310-73-2) Sodium hydroxide

Workers: Long-term exposure - local effects (inhalation): 1.0 mg/m<sup>3</sup>

Consumers:

Long-term exposure - local effects (inhalation): 1.0 mg/m<sup>3</sup>

**PNECs** No PNECs available.

Additional information: The lists valid during the making were used as basis.

# 8.2 Exposure controls

# 8.2.1. Appropriate engineering controls

A system of local and / or general ventilation is recommended to keep workers' exposure below air exposure limits. Local ventilation is preferred because it can control the emission of pollutants at its source, preventing it from spreading to the general workplace.

#### Individual protection measures, such as personal protective equipment General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Avoid contact with the eyes and skin.

Remove contaminated clothes and wash before reusing them.

Do not eat, drink or smoke while using the product.

Use only with adequate ventilation.

Wash hands before breaks and at the end of work.

# **Respiratory protection:**



If the exposure limit is exceeded (up to 50ppm) a full face-piece respirator with a chemical cartridge respirator with an adequated cartridge is recommended, approved according to EN 14 387 standard. For emergencies or instances where exposure levels are not known, use a full face-piece positive pressure, air supplied respirator. Air -purifying respirators do not protect workers in oxygen deficient atmospheres!

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Protective gloves resistant to chemicals (standard EN 374-1)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation **Material of gloves** 

The following material are suitable for protective gloves (permeation time  $\geq 8$  hours):

Natural rubber/Natural latex -NR (0.5 mm)

Polychloropropene-CR (0.5 mm)

Nitrile rubber/Nitrile latex-NBR (0.35 mm)

Butyl rubber- Butyl (0.5 mm)

Fluorocarbon rubber-FKM (0,4 mm)

Polyvinyl cgloride-PVC (0.5 mm)

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

# Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended. **Eye/face protection** 

Safety glasses with side-shields (frame goggles) (e.g. EN 166)

**Body protection:** 



Chemically resistant, protective work clothing (EN 14605) and boots.

Environmental exposure controls Prevent enter of the product into drains, surface and groundwater and soil.

# SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties				
General Information				
Physical state	Solid			
Colour:	White			
Odour:	Odourless			
Odour threshold:	Not determined			
Melting point/freezing point:	318 °C			
Boiling point or initial boiling point and boiling				
range	1390 °C			
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Flammability	Product is not flammable.
Lower and upper explosion limit	
Lower:	Not determined
Upper:	Not determined
Flash point:	Not applicable
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
pH	Not applicable
Viscosity:	i tot uppriouolo
Kinematic viscosity	Not applicable
Dynamic:	Not applicable
Solubility	Not applicable
•	Fully missible
water: Doutition coofficient restanch/mater (log value)	Fully miscible Not determined
Partition coefficient n-octanol/water (log value)	
Vapour pressure:	Not applicable
Density and/or relative density	
Density at 20 °C:	2.13 g/cm <sup>3</sup>
	Not determined
Relative density	Not determined
Vapour density	Not applicable
Particle characteristics	See item 3.
9.2 Other information	
Appearance:	
Appearance: Form:	hygroscopic flakes
Form: Important information on protection of health an environment, and on safety.	
Form: Important information on protection of health an environment, and on safety. Auto-ignition temperature:	d Not determined.
Form: Important information on protection of health an environment, and on safety. Auto-ignition temperature: Explosive properties:	d
Form: Important information on protection of health an environment, and on safety. Auto-ignition temperature: Explosive properties: Cloud point / clarification point:	d Not determined. Product does not present an explosion hazard.
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Form: Important information on protection of health an environment, and on safety. Auto-ignition temperature: Explosive properties: Cloud point / clarification point: Oxidising properties Evaporation rate Information with regard to physical hazard classe Explosives Flammable gases Aerosols Oxidising gases Gases under pressure Flammable liquids Flammable solids	d Not determined. Product does not present an explosion hazard. Not classified as an oxidant according to CLP Regulation 1272/2008/EC. Not applicable es Void Void Void Void Void Void Void Void
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Organic peroxides Corrosive to metals May be corrosive to metals.	Void			
Desensitised explosives	Void			

## **SECTION 10: Stability and reactivity**

**10.1 Reactivity** No further relevant information available.

#### **10.2 Chemical stability**

Thermal decomposition / conditions to be avoided Stable at environment temperature.

10.3 Possibility of hazardous reactions No dangerous reactions known.

#### **10.4 Conditions to avoid**

water, acid, zinc, aluminium, copper, alkali metals, alkaline earth metals, acetaldehyde, acroleine, acrylonitrile, allyl alcohol, halon, maleic anhydride, bromine, nitroparaffins, nitroaromatics, oleums, tetrahydrofuran. Minimise exposure to air and moisture to avoid degradation. Avoid contact with incompatibles.

#### **10.5 Incompatible materials**

Certain metals and alloys: zinc, aluminium, tin, copper, lead, bronze, brass. Sodium hydroxide also destroys leather, strips paint and attacks certain plastics, rubbers and coatings. Water contact may generate large amounts of heat.

#### **10.6 Hazardous decomposition products**

by corrosion of metals, formation of flammable and explosive hydrogen.

#### **SECTION 11: Toxicological information**

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008 Acute toxicity** Based on available data, the classification criteria are not met.

#### LD/LC50 values relevant for classification:

#### CAS: 1310-73-2 sodium hydroxide

Oral LD50 2,000 mg/kg (rat)

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/irritation Causes serious eye damage.

Respiratory or skin sensitisation Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

STOT-single exposure Based on available data, the classification criteria are not met.

STOT-repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met.

## Additional toxicological information:

Repeated dose toxicity Based on available data, the classification criteria are not met.

# **11.2 Information on other hazards**

# **Endocrine disrupting properties**

Substance is not listed.

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# **SECTION 12: Ecological information**

12.1 Toxicity

Aquatic toxicity:

# CAS: 1310-73-2 sodium hydroxide

EC50 (48h) 40.4 mg/l (Invertebrate)

12.2 Persistence and degradability NaOH will rapidly dissolve and dissociate in water

12.3 Bioaccumulative potential Not bioaccumulative.

# 12.4 Mobility in soil

High water solubility indicates that sodium hydroxide will be found predominately in aquatic environment. During movement through soil some ion exchange will occur. Also, some of the hydroxide may remain in the aqueous phase and will move downward through soil in the direction of groundwater flow. Sodium hydroxide does not cause biological oxygen deficit.

**12.5 Results of PBT and vPvB assessment** The substance is not considered to be PBT nor vPvB.

**PBT:** Not applicable.

**vPvB:** Not applicable.

# **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

## Additional ecological information:

General notes: Must not reach sewage water or drainage ditch undiluted or unneutralised.

# **SECTION 13: Disposal considerations**

**13.1** Waste treatment methods Recommendation



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Dispose according to National Regulations.



Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Contact manufacturer for recycling information.

The generation of waste should be avoided or minimised wherever possible.

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

# European waste catalogue

HP8 Corrosive

# Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

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(Contd. of page 9) **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information				
14.1 UN number or ID number ADR, IMDG, IATA	UN1823			
14.2 UN proper shipping name ADR IMDG, IATA	1823 SODIUM HYDROXIDE, SOLID mixture SODIUM HYDROXIDE, SOLID mixture			
14.3 Transport hazard class(es)				
ADR, IMDG, IATA				
Class Label	8 Corrosive substances. 8			
14.4 Packing group ADR, IMDG, IATA	II			
14.5 Environmental hazards:	Not applicable.			
14.6 Special precautions for user Hazard identification number (Kemler code): EMS Number: Segregation groups	Warning: Corrosive substances. 80 F-A,S-B Alkalis			
14.7 Maritime transport in bulk according to IMO instruments Not applicable.				
Transport/Additional information:				
ADR Limited quantities (LQ) Excepted quantities (EQ)	1 kg Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g			
Transport category Tunnel restriction code	2 E			
IMDG Limited quantities (LQ) Excepted quantities (EQ)	1 kg Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g			
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## **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### **Department issuing SDS:**

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#### Version number of previous version: 2

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Met. Corr.1: Corrosive to metals - Category 1

Skin Corr. 1A: Skin corrosion/irritation - Category 1A Eye Dam. 1: Serious eye damage/eye irritation - Category 1

\* Data compared to the previous version altered.

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