

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 21-May-2012 Revision Date 04-Oct-2023 Revision Number 12

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Sodium hydroxide, 50 wt% solution in water

Cat No. : 380210000; 380210025; 380215000

Synonyms Caustic soda

Unique Formula Identifier (UFI) X3QW-M21C-NX02-HC00

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

Recommended Use Laboratory chemicals.

Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Product category PC21 - Laboratory chemicals

Process categories PROC15 - Use as a laboratory reagent

Environmental release category ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

Uses advised against

No Information available

1.3. Details of the supplier of the safety data sheet

Company

UK entity/business name

Fisher Scientific UK Bishop Meadow Road,

Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name Thermo Fisher Scientific

Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

Poison Centre - Emergency information services

Ireland: National Poisons Information Centre (NPIC) -

01 809 2166 (8am-10pm, 7 days a week)

Malta: +356 2395 2000 Cyprus: +357 2240 5611

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

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Physical hazards

Substances/mixtures corrosive to metal Category 1 (H290)

Health hazards

Skin Corrosion/Irritation Category 1 A (H314)
Serious Eye Damage/Eye Irritation Category 1 (H318)

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

Precautionary Statements

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): 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 or doctor/physician

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

Toxic to terrestrial vertebrates

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Sodium hydroxide	1310-73-2	215-185-5	50	Met. Corr. 1 (H290) Skin Corr. 1A (H314)

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				Eye Dam. 1 (H318)
Water	7732-18-5	231-791-2	50	=

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Sodium hydroxide	Skin Corr. 1A :: C>=5% Skin Corr. 1B :: 2%<=C<5% Met. Corr. 1 :: C ≥ 2% Eye Irrit. 2 :: 0.5%<=C<2% Skin Irrit. 2 :: 0.5%<=C<2%	-	-

Components	Reach Registration Number	
Sodium hydroxide	01-2119457892-27	

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice Take off contaminated clothing and shoes immediately.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Immediate medical attention is required.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes. Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the

substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If

not breathing, give artificial respiration.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

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

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Corrosive material. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Sodium oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

6.2. Environmental precautions

Avoid release to the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Wear self-contained breathing apparatus and protective suit. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Use only under a chemical fume hood. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

Technical Rules for Hazardous Substances (TRGS) 510 Class 12 Storage Class (LGK) (Germany)

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Sodium hydroxide	2 mg/m ³ STEL		STEL: 2 mg/m ³ 15 min

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)	
Sodium hydroxide 1310-73-2 (50)			DNEL = 1mg/m ³		

Predicted No Effect Concentration (PNEC)

No information available.

8.2. Exposure controls

Engineering Measures

Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Neoprene	> 480 minutes	0.45 mm	Level 6	As tested under EN374-3 Determination of
Butyl rubber	> 480 minutes	0.35 mm	EN 374	Resistance to Permeation by Chemicals
Nitrile rubber	> 480 minutes	0.35 mm		•
Viton (R)	> 480 minutes	0.30 mm		

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

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Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used

Liquid

Alkaline

Liquid

(Air = 1.0)

and maintained properly

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits Large scale/emergency use

> are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure

limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls Prevent product from entering drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid

Clear, Viscous **Appearance** Odor Odorless

No data available **Odor Threshold** Melting Point/Range 12 °C / 53.6 °F **Softening Point** No data available **Boiling Point/Range** 145 °C / 293 °F Flammability (liquid) No data available Flammability (solid, gas) Not applicable

Not applicable **Explosion Limits**

Flash Point No information available Method - No information available

Not applicable **Autoignition Temperature** No data available **Decomposition Temperature**

рΗ > 13

Viscosity No data available

Water Solubility Soluble

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure 14 mmHg **Density / Specific Gravity** 1.500

Bulk Density Not applicable

Vapor Density > 1.0

Particle characteristics Not applicable (liquid)

9.2. Other information

Explosive Properties Not explosive **Oxidizing Properties** Not oxidising

SECTION 10: STABILITY AND REACTIVITY

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10.1. Reactivity

Contact with metals may evolve flammable hydrogen gas

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions Corrosive to metals.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Acids. Organic materials. Metals. . Zinc.

10.6. Hazardous decomposition products

Sodium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

Based on available data, the classification criteria are not met Oral Based on ATE data, the classification criteria are not met **Dermal** ATE = 2700 mg/kg

Based on ATE data, the classification criteria are not met Inhalation

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium hydroxide	140 - 340 mg/kg (Rat)	1350 mg/kg (Rabbit)	-
Water	-	-	-

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Based on available data, the classification criteria are not met Respiratory Based on available data, the classification criteria are not met Skin

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

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(a) reproductive toxicity: Based on available data, the classification criteria are not met

(h) STOT-single exposure; Not classified

Bridging principle "Dilution"

Based on available data, the classification criteria are not met

Not classified (i) STOT-repeated exposure;

Bridging principle "Dilution"

Based on available data, the classification criteria are not met

None known. **Target Organs**

Based on available data, the classification criteria are not met (j) aspiration hazard;

delayed

Symptoms / effects,both acute and Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes

severe swelling, severe damage to the delicate tissue and danger of perforation.

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any

known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. **Ecotoxicity effects**

	Component	Freshwater Fish	Water Flea	Freshwater Algae
Γ	Sodium hydroxide	LC50: = 45.4 mg/L, 96h static		
ı		(Oncorhynchus mykiss)		
Т				

12.2. Persistence and degradability

Soluble in water, Persistence is unlikely, based on information available. **Persistence**

Degradability Not relevant for inorganic substances.

Neutralization is normally necessary before waste water is discharged into water treatment Degradation in sewage

treatment plant plants. Contains substances known to be hazardous to the environment or not degradable

in waste water treatment plants.

Bioaccumulation is unlikely 12.3. Bioaccumulative potential

The product is water soluble, and may spread in water systems . Will likely be mobile in the 12.4. Mobility in soil

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent

and very bioaccumulative (vPvB).

12.6. Endocrine disrupting

properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects
Persistent Organic Pollutant
Ozone Depletion Potential

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused

Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but

application specific.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the

application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized

before discharge.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1824

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es) 8
14.4. Packing group II

ADR

14.1. UN number UN1824

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es) 8
14.4. Packing group II

<u>IATA</u>

14.1. UN number UN1824

14.2. UN proper shipping name SODIUM HYDROXIDE SOLUTION

14.3. Transport hazard class(es) 8 14.4. Packing group II

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk Not applicable according to IMO instruments

Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Sodium hydroxide	1310-73-2	215-185-5	ı	-	X	X	KE-31487	Χ	X
Water	7732-18-5	231-791-2	-	-	Х	X	KE-35400	Χ	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Sodium hydroxide	1310-73-2	Х	ACTIVE	X	-	Х	Х	Х
Water	7732-18-5	Х	ACTIVE	Х	-	Х	X	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Sodium hydroxide	1310-73-2	-	Use restricted. See item 75. (see link for restriction details)	-
Water	7732-18-5	-	-	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Sodium hydroxide	1310-73-2	Not applicable	Not applicable
Water 7732-18-5		Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

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WGK Classification Water endangering class = 1 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Sodium hydroxide	WGK1	

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Sodium hydroxide	Prohibited and Restricted		
1310-73-2 (50)	Substances		

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic

Substances List

TWA - Time Weighted Average

LD50 - Lethal Dose 50%

ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

EC50 - Effective Concentration 50%

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic

ADR - European Agreement Concerning the International Carriage of

Dangerous Goods by Road IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

ICAO/IATA - International Civil Aviation Organization/International Air

Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data **Health Hazards** Calculation method **Environmental hazards** Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Chemical incident response training.

Creation Date21-May-2012Revision Date04-Oct-2023Revision SummaryNot applicable.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet