ThermoFisher SCIENTIFIC

SAFETY DATA

according to Regulation UK SI 2019/758 and UK SI 2020

Creation Date 21-May-2012 **Revision Date** 23-Apr-2025 **R**

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THECOMPANY/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 a
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
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
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-38

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

Physical hazards

Substances/mixtures corrosive to metal	Category 1 (H290

Health hazards

Skin Corrosion/Irritation	Category 1 (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 wi
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lense
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 bioacc

Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

				Eye Da
Water	7732-18-5	231-791-2	50	

Component	Specific concentration limits (SCL's)	M-Factor	Co
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 Show this safety data sheet to the doctor in attendance. Immediate me required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at le Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Rem contaminated clothing and gloves, including the inside, before re-use. immediately.

Ingestion Do NOT induce vomiting. Clean mouth with water. Never give anything unconscious person. Call a physician immediately.

Inhalation If not breathing, give artificial respiration. Remove from exposure, lie d mouth-to-mouth method if victim ingested or inhaled the substance; giv with the aid of a pocket mask equipped with a one-way valve or other p medical device. Call a physician immediately.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, ta 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. lavage or emesis is contraindicated. Possible perforation of stomach o be investigated: Ingestion causes severe swelling, severe damage to t and danger of perforation

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

Suitable Extinguishing Media
Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. CO_2, dry chemical, dr alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, membranes.

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 equival protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe area from and upwind of spill/leak.

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

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

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only unde hood. 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 anima not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, includi

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 Pr
Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	
Sodium hydroxide	2 mg/m³ STEL		S

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the re
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)	sy
Sodium hydroxide 1310-73-2 (50)			DNEL = 1mg/m³	

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
and safety showers are close to the workstation location.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introd
equipment changes to minimise release or contact, and the use of properly designed ventilation systems, shou
control hazardous materials at source

Personal protective equipment
Eye Protection Goggles (European standard - EN 166)

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supp
(Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susce
sensitisation effects, also take into consideration the specific local conditions under which the product is used,
of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection	When workers are facing concentrations above the exposure limit they appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the co and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirat 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 re 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	
Appearance	Clear, Viscous	
Odor	Odorless	
Odor Threshold	No data available	
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	Liquid
Explosion Limits	Not applicable	
Flash Point	No information available	**Method -** No information avail
Autoignition Temperature	Not applicable	
Decomposition Temperature	No data available	
pH	> 13	Alkaline
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	Liquid

SECTION 10: STABILITY AND REACTIVITY

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 None under normal processing.

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;

Oral Based on available data, the classification criteria are not met
Dermal Based on available data, the classification criteria are not met
Inhalation Based on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC
Water	-	-	

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

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

Symptoms / effects,both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is con Possible perforation of stomach or esophagus should be investigated. severe swelling, severe damage to the delicate tissue and danger of p

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects Do not empty into drains. Large amounts will affect pH and harm aqua Contains a substance which is:. Harmful to aquatic organisms. The pro following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Fre
Sodium hydroxide	LC50 = 45.4 mg/L, 96h static (Oncorhynchus mykiss)		

12.2. Persistence and degradability

Persistence Soluble in water, Persistence is unlikely, based on information availabl
Degradability Not relevant for inorganic substances.
Degradation in sewage treatment plant Neutralization is normally necessary before waste water is discharged plants. Contains substances known to be hazardous to the environmen in waste water treatment plants.

12.3. Bioaccumulative potential

Bioaccumulation is unlikely

12.4. Mobility in soil

The product is water soluble, and may spread in water systems . Will environment due to its water solubility. Highly mobile in soils

12.7. Other adverse effects

Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	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 E on waste and hazardous waste. Dispose of in accordance with local re
Contaminated Packaging	Dispose of this container to hazardous or special waste collection poin
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not produ application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user ba application for which the product was used. Do not empty into drains. L affect pH and harm aquatic organisms. Solutions with high pH-value m 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

IATA

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

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

International Inventories

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL). US EPA (TSCA) Control Act, (40 CFR Part 710)

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

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

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	R 1 Su
Sodium hydroxide	1310-73-2	-	Use restricted. See entry 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 Direc Qualifying Quanti Requ
Sodium hydroxide	1310-73-2	Not applicable	Not a
Water	7732-18-5	Not applicable	Not a

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

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	
Sodium hydroxide	1310-73-2	Listed	Not applicable	
Water	7732-18-5	Listed	Not applicable	

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

Not applicable

National Regulations

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

WGK Classification Water endangering class = 1 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft
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)	Switzerla Rotterda Prior
Sodium hydroxide 1310-73-2 (50)	Prohibited and Restricted 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

EINECS/ELINCS - European Inventory of Existing Commercial Chemical 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

TSCA - United States Toxic Substances Control A Inventory
DSL/NDSL - Canadian Domestic Substances List Substances List
ENCS - Japanese Existing and New Chemical Su
AICS - Australian Inventory of Chemical Substanc
NZIoC - New Zealand Inventory of Chemicals

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

TWA - Time Weighted Average
IARC - International Agency for Research on Can
Predicted No Effect Concentration (PNEC)
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

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

Classification and procedure used to derive the classification for mixtures according to Regulation (EC

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 E hygiene.

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

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

Chemical incident response training.

Creation Date	21-May-2012
Revision Date	23-Apr-2025
Revision Summary	SDS sections updated.

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

.

Disclaimer

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

End of Safety Data Sheet