Product	Sodium Hydroxide Solution 10N
Revision date	01 April 2021
Revision	1

Safety Data Sheet (SDS)

according to Regulation (EC) No. 1907/2006

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

1.1 Product identifier

Product name	**Sodium Hydroxide Solution 10N**
Product no.	**2896301**
Other means of identification	Caustic Soda Solution

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

Identified uses	General purpose solvent.
Uses advised against	Use in accordance with manufacturer's recommendations.

1.3 Details of the supplier of the safety data sheet

Supplier	Greenfield Global LFS Ireland Ltd., IDA Business & Technology Park, Mountrath Road, Portlaoise, Co. Laois, Ireland Ireland Tel: +353 057 867 1400
Contact person	exports@greenfield.com

1.4 Emergency telephone number

Emergency telephone	Emergency contact number and hours of availability – 24 hour availability: USA: CHEMTREC: 1.800.424.9300 (CCN 17213), International: CHEMTREC: +1.703.527.3887 (CCN 17213)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and chemical hazards	Me. Corr 1 - H290
Human health	Skin Corr. 1A - H314, STOT SE 3 - H335
Environment	Not classified

2.2 Label elements

Contains Sodium hydroxide

Label in accordance with (EC) no. 1272/2008

Signal word Danger

Hazard statements

H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary statements

Prevention
P260 Do not breathe dust/fume/ gas/mist/vapours/spray.

P280 Wear protective gloves/ protective clothing/eye protection/face protection.
Response
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ 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.
Storage
P405 Store locked up.

2.3 Other hazards

None known.

Section 3: Composition/information on ingredients

3.1 Substance

Not applicable.

3.2 Mixtures

Name	Product identifier	Regulation (EC) No 1272/2008	%
Sodium hydroxide	CAS-No.: 1310-73-2 EC No.: 215-185-5	Skin Corr. 1A - H314, Eye Dam. 1 - H318, STOT SE 3 - H335, Me. Corr 1 - H290	25-35%

The full text for all hazard statements are displayed in section 16.

Composition comments The data shown are in accordance with the latest EC Directives.
Sodium hydroxide - SCL Skin Corr. 1A: C >= 5%; Skin Corr. 1B: C >= 2 - < 5%; Skin Irrit. 2: C >= 0.5 - < 2%; Eye Irrit. 2: C >= 0.5 - < 2%.

Section 4: First aid measures

4.1 Description of first aid measures

General information Provide general first aid, rest, warmth and fresh air. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Show this safety data sheet or product label to medical personnel. Chemical burns must be treated by a physician

Inhalation If this product is inhaled and symptoms occur, move the exposed person to fresh air promptly. Keep person warm and at rest. Get medical attention.

Ingestion Immediately rinse mouth thoroughly with water and provide fresh air. Never give anything by mouth if victim is unconscious, is rapidly losing consciousness or is convulsing. Get medical attention immediately. Do NOT induce vomiting unless directed to do so by medical personnel.

Skin contact Remove affected person from source of contamination. Remove contaminated clothing. Wash the skin immediately with soap and water. While rinsing, remove clothing not adhering to the affected area. Get medical attention promptly if symptoms occur after washing.

Eye contact Do not rub eye. Remove contact lenses if present and easy to do so. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Avoid contaminating unaffected eye. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

General information The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation Exposure may cause coughing or wheezing. Severe irritation in nose and throat. Corrosive to the respiratory tract. May cause chemical burns in mouth and throat.

Ingestion May cause severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. May cause nausea or vomiting.

Skin contact Corrosive. Causes severe skin burns. Blistering may occur.

Eye contact Eye contact may produce serious chemical burns

4.3 Indication of any immediate medical attention and special treatment needed

Notes to the physician Treat symptomatically.

Section 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media Use fire-extinguishing media appropriate for surrounding materials. The product is non-combustible

Unsuitable extinguishing media High volume water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products During fire, toxic gases (CO, CO2) are formed. Corrosive gases or vapours. Sodium Oxides.

Unusual fire & explosion hazards Flammable hydrogen can form when the product contacts metals. Reactions with the following materials may generate heat: Water.

Specific hazards Water used for fire extinguishing, which has been in contact with the product, may be corrosive.

5.3 Advice for firefighters

Special fire fighting procedures Containers close to fire should be removed immediately or cooled with water. Do not stay in the fire zone without self contained breathing apparatus. In order to avoid contact with the skin and eyes, keep a safe distance and wear suitable protective clothing.

Protective equipment for firefighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. Ensure adequate ventilation. Wear appropriate protective equipment and clothing during clean-up. For personal protection, see section 8 of the SDS. Evacuate and ventilate area. Eliminate all sources of ignition. Do not touch or walk through spilled material. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Avoid inhalation of vapours and contact with skin and eyes.

For emergency responders Follow safe handling advice and personal protective equipment recommendations for normal use of product.

6.2 Environmental precautions

Environmental precautions Avoid discharge into drains, water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body. The product may affect the acidity (pH) of water which may have hazardous effects on aquatic organisms.

6.3 Methods and material for containment and cleaning up

Spill clean up methods Wear appropriate personal protective equipment as specified in Section 8. DO NOT touch spilled material! Ventilate and evacuate the area. Eliminate all ignition sources. Stop leak if possible without risk.
Cover drains. Absorb spillage with non-combustible, absorbent material - sand. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container. Flush with plenty of water to clean spillage area. Wash thoroughly after dealing with a spillage.

6.4 Reference to other sections

Reference to other sections See section 1 for emergency contact. For personal protection, see section 8. For waste disposal, see section 13.

Section 7: Handling and storage

7.1 Precautions for safe handling

Handling Avoid inhalation of vapours and contact with skin and eyes. Wear suitable personal protective equipment, as detailed in Section 8. Ensure adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not wear contact lenses. Do not

return product to containers for reuse. Do not mix with other chemicals. Keep away from heat, sparks and open flame. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. Remove and wash contaminated clothing before reusing. Do not handle broken packages without protective equipment

7.2 Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from incompatible materials (see section 10). Keep away from heat, sparks and open flame. Take precautionary measures against static discharges. The storage area floor should be leak-tight, jointless and not absorbent.

Storage class Corrosive storage.

7.3 Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

Usage description Use only according to directions.

Section 8: Exposure controls/Personal protection

8.1 Control parameters

Component	STD	TWA (8 Hrs)		STEL (15mins)		Notes
Sodium hydroxide	OEL				2 mg/m^3	

Ingredient comments Ireland, Occupational Exposure Limits 2020.

8.2 Exposure Controls

Protective equipment

Engineering measures Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.

Respiratory equipment Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. (EN 143). Wear a respirator fitted with the following cartridge: Gas filter, type B.
Use respirators and components tested and approved under appropriate government standards such as CEN (EU). Consult manufacturer for specific advice.

Hand protection Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374) is recommended. Selection of the glove material depends on consideration of the penetration times, rates of diffusion and degradation, and concentration specific to the workplace. Suggested material: (Suitable materials for longer, direct contact) Butyl rubber. Breakthrough time: > 480 min. Minimum layer thickness: >= 0.35 mm. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Eye protection Use equipment for eye protection tested and approved under appropriate government standards such as EN 166(EU). Goggles/face shield are recommended.

Other protection Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handing this product. Wear appropriate clothing to prevent any possibility of skin contact. Suggested PPE: chemical resistant full-length overalls and boots. The selected clothing must satisfy the European norm standard EN 943.

Hygiene measures Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Take off immediately all contaminated clothing. Avoid contact with skin, eyes and clothing. Warn cleaning personnel of any hazardous properties of the product. Clean equipment and the work area every day.

Process conditions Provide eyewash station. Use engineering controls to reduce air contamination to permissible exposure level.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Grey to white. Water white liquid.
Odour	No odour information available.
Odour threshold - lower	No information available as testing has not been completed.
Odour threshold - upper	No information available as testing has not been completed.
pH-Value, Conc. Solution	14
pH-Value, Diluted solution	No information available as testing has not been completed.
Melting point	10.4 - 50 °F (-12 - 10 °C)
Initial boiling point and boiling range	221 - 284 °F (105 - 140 °C)
Flash point	Not applicable.
Evaporation rate	No information available as testing has not been completed.
Flammability state	Not applicable.
Flammability limit - lower(%)	No information available as testing has not been completed.
Flammability limit - upper(%)	No information available as testing has not been completed.
Vapour pressure	> 24 hPa (68 °F (20 °C))
Vapour density (air=1)	1.38
Relative density	1.515 g/ml (77 °F (25 °C))
Bulk density	No information available as testing has not been completed.
Solubility	Completely soluble in water.
Decomposition temperature	No information available as testing has not been completed.
Partition coefficient; n-Octanol/Water	No information available as testing has not been completed.
Auto ignition temperature (°C)	No information available as testing has not been completed.
Viscosity	No information available as testing has not been completed.
Explosive properties	Formation of explosive vapour is possible.
Oxidising properties	The product does not meet the criteria to be classified as oxidising.

9.2 Other information

Molecular weight	40 g/mol
Volatile organic compound	No information available as testing has not been completed.
Other information	None noted.

Section 10: Stability and reactivity

10.1 Reactivity

Reactivity	Reactions may occur with strong oxidising agents. May be corrosive to metals. Reacts violently with strong acids

10.2 Chemical stability

Stability	Stable under normal temperature conditions and recommended use.

10.3 Possibility of hazardous reactions

Hazardous reactions	For information on hazardous reactions see section 10.1.
Hazardous polymerisation	Will not polymerise.
Polymerisation description	No information available.

10.4 Conditions to Avoid

Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Extremes of temperature and direct sunlight. Avoid contact with other chemicals.

10.5 Incompatible materials

Materials to avoid	Strong acids. Oxidizing agents. Metals.

10.6 Hazardous decomposition products

Hazardous decomposition products	When heated, vapours/gases hazardous to health may be formed.

Section 11: Toxicological information

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

Toxicological information	No toxicological information for the overall finished product.
Acute toxicity (Oral LD50)	No information available as testing has not been completed.
Acute toxicity (Dermal LD50)	No information available as testing has not been completed.
Acute toxicity (Inhalation LD50)	No information available as testing has not been completed.
Serious eye damage/irritation	Causes serious eye damage.
Skin corrosion/irritation	The product is classified as a skin corrosion/irritation hazard.
Respiratory sensitisation	The product is not classified as a respiratory hazard.
Skin sensitisation	The product is not classified as a skin sensitisation hazard.
Germ cell mutagenicity	The product is not classified as a mutagen.
Carcinogenicity	The product is not classified as a carcinogen hazard.
Specific target organ toxicity - Single exposure:	
STOT - Single exposure	The product is classified as a single exposure specific target organ toxin.
Specific target organ toxicity - Repeated exposure:	
STOT - Repeated exposure	The product is not classified as a repeat exposure specific target organ toxin.
Inhalation	Exposure may cause coughing or wheezing. Severe irritation in nose and throat. Corrosive to the respiratory tract. May cause chemical burns in mouth and throat.
Ingestion	May cause severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. May cause nausea or vomiting.
Skin contact	Corrosive. Causes severe skin burns. Blistering may occur.
Eye contact	Eye contact may produce serious chemical burns
Waste management	When handling waste, consideration should be made to the safety precautions applying to handling of the product. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Empty containers retain residue (liquid and/or vapour) and can be dangerous.
Routes of entry	Eyes, skin, ingestion or inhalation.
Target organs	Eyes, skin, inhalation and ingestion.
Aspiration hazards:	The product is not classified as an aspiration hazard.
Reproductive toxicity:	The product is not classified as a reproductive hazard.

11.2 Information on other hazards

Information on other hazards	None known.

Section 12: Ecological information

12.1 Toxicity

Acute toxicity - Fish	No information available as testing has not been completed.
Acute toxicity - Aquatic invertebrates	No information available as testing has not been completed.
Acute toxicity - Aquatic plants	No information available as testing has not been completed.
Acute toxicity - Microorganisms	No information available as testing has not been completed.
Chronic toxicity - Fish	No information available as testing has not been completed.
Chronic toxicity - Aquatic invertebrates	No information available as testing has not been completed.
Chronic toxicity - Aquatic plants	No information available as testing has not been completed.
Chronic toxicity - Microorganisms	No information available as testing has not been completed.
Ecotoxicity	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Eco toxilogical information	The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

12.2 Persistence and degradability

Degradability	Not relevant for inorganic substances.
Biological oxygen demand	No information available as testing has not been completed.
Chemical oxygen demand	No information available as testing has not been completed.

12.3 Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Bioaccumulation factor	No information available as testing has not been completed.
Partition coefficient; n-Octanol/Water	No information available as testing has not been completed.

12.4 Mobility in soil

Mobility	Completely soluble in water.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	The product does not contain any PBT or vPvB Substances.

12.6 Endocrine disrupting properties

Endocrine disrupting properties	The product does not contain any substances with endocrine disrupting properties at a concentration above or equal to 0.1%.

12.7 Other adverse effects

Other adverse effects	None known.

Section 13: Disposal considerations

Waste management	When handling waste, consideration should be made to the safety precautions applying to handling of the product. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

13.1 Waste treatment methods

Disposal methods	Dispose of waste and residues in accordance with local authority requirements.

Section 14: Transport information

14.1 UN number or ID number

UN no. (ADR)	UN1824
UN no. (IMDG)	UN1824
UN no. (IATA)	UN1824

14.2 UN proper shipping name

ADR proper shipping name	SODIUM HYDROXIDE SOLUTION
IMDG proper shipping name	SODIUM HYDROXIDE SOLUTION
IATA proper shipping name	SODIUM HYDROXIDE SOLUTION

14.3 Transport hazard class(es)

ADR class	8
IMDG class	8
IATA class	8

Transport labels

14.4 Packing group

ADR/RID/ADN packing group	II
IMDG packing group	II
IATA packing group	II

14.5 Environmental hazards

ADR	No
IMDG	No
IATA	No

14.6 Special precautions for user

EMS	F-A, S-B
Emergency action code	A3 A803
Hazard no. (ADR)	80
Tunnel restriction code	(E)

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

Section 15: Regulatory information

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

EU legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments. The UN Globally Harmonized System (GHS) Safety Data Sheet format (Annex IV) is implemented as Annex II of REACH EU No 2020/878 of 18 June 2020 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
Approved code of practice	2020 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations (2001-2015) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001-2019)

15.2 Chemical safety assessment

Chemical safety assessment	No chemical safety assessment has been carried out.

Section 16: Other information

General information	This Safety Data Sheet is in accordance with Reach Regulation (EC) No 453/2010
Revision comments	This is a first issue.
Revision date	01 April 2021
Revision	1
Safety data sheet status	Approved.

Hazard statements in full

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

Disclaimer

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.