Safety Data Sheet

Product name:

Sofnolime® SoLo

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Compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758
Prepared according to GB CLP which is the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

1	SECTION 1: IDENTIFICATION OF SUBSTANCE / PREPARATION AND OF THE COMPANY	
1.1	Product identifier	Substance name: Soda Lime (Sofnolime SoLo, Medisorb EF, Leonsorb Premium, Super Limedic)
	Unique Formula Identifier (UFI)	3C00-W0DX-T007-1TQA
1.2	Relevant identified uses of the substance or mixture and uses advised against	Relevant identified uses: As an absorbent for carbon dioxide and other acidic gases Uses advised against: No data Reason why uses advised against: No data
1.3	Details of the supplier of the safety data sheet	Molecular Products Ltd Parkway, Harlow Business Park, Harlow, Essex, CM19 5FR, UK +44 (0) 1279 445111* sds@molprod.com * Only available during office hours 0900 - 1700 GMT
1.4	Emergency telephone number	+44 (0) 1865 407333 (24hr, English speaking) +86 532 8388 9090 (China, NRCC) +52 555 004 8763 (Mexico) +56 225 829 336 (Chile) +55 11 3197 5891 (Brazil) +47 2103 4452 (Norway)

2	SECTION 2: HAZARDS IDENTIFICATION			
2.1	Classification of the substance or mixture			
2.1.1	Classification according to Regulation (EC) No 1272/2008 (CLP/GHS)			
	Skin irrit 2	H315		
	Eye dam. 1	H318		
2.1.2	See section 16 for full text of H statements			
2.2	Label elements			
2.2.1	Labelling in accordance with EC Regulation No 1272/2008 (CLP/GHS)			
	Hazard pictogram		Signal word	DANGER
	Hazard statements			
	H315	Causes skin irritation		
	H318	Causes serious eye damage		
	Precautionary statements			
	P264	Wash hands and face thoroughly after handling		
	P280	Wear protective gloves/protective clothing/eye protection/face protection		
	P302 +P352	IF ON SKIN: Wash with plenty of water		
	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 POISON CENTRE or doctor/physician		
	P362 + P364	Take off contaminated clothing and wash it before reuse		
	Supplemental Hazard information (EU)	No data		
2.3	Other hazards			
	This product has undergone, test method ASTM D3838 – 80, Standard Test Method for pH of Activated Carbon. This returned a result of pH = 10.24. Therefore, it did not reach the threshold of pH>= 11.5 for classification of H314; but has been allotted H315			

3	SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS							
3.2	Mixtures							
	Chemical name	CAS No.	Index No.	REACH Registration No.	EC No.	Classification according to Regulation (EC) No 1278/2008 (CLP)	% [weight]	SCL, M-factor, ATE
	Sodium hydroxide	1310-73-2	011-002-00-6	01-2119-457-892-27-XXXX	215-185-5	Skin Corr. 1A H314	<1%	No data
	Calcium hydroxide	1305-62-0	No data	01-21194-75-151-45-0630	215-137-3	Skin Irrit. 2 H315 Eye Damage 1 H318 STOT SE 3 H335	>75%	No data

4	SECTION 4: FIRST AID MEASURES	
4.1	Description of first aid measures	
	General notes	
	Following inhalation	Remove casualty to fresh air and provide warmth and rest
	Following skin contact	Clean areas of skin affected immediately with soap and plenty of water. If necessary, seek medical advice
	Following eye contact	Immediately wash out eye thoroughly with plenty of water until irritation subsides; consult an eye specialist/ophthalmologist
	Following ingestion	Unlikely route of exposure. But if product is swallowed, do not induce vomiting. Drink plenty of water and, if necessary, seek medical advice
	Self-protection of the first aider	If the atmosphere is dusty ensure that there is sufficient LEV or suitable respiratory protective equipment is used
4.2	Most important symptoms and effects, both acute and delayed	None known
4.3	Indication of any immediate medical attention and special treatment needed	Treatment as described above

5	SECTION 5: FIRE FIGHTING MEASURES	
5.1	Extinguishing media	Suitable extinguishing media**:** Product does not burn, Chemical powder, dry sand and if water is used collect contaminated water separately, must not be discharged into the drains Unsuitable extinguishing media: carbon dioxide
5.2	Special hazards arising from the substance or mixture	Hazardous combustion products: Not determined
5.3	Advice for fire fighters	Self-contained breathing apparatus may be required

6	SECTION 6: ACCIDENTAL RELEASE MEASURES	
6.1	Personal precautions, protective equipment and emergency procedures	For non-emergency personnel: - Avoid dust formation - Use personal protective clothing For emergency responders: use breathing apparatus if exposed to vapours/dust/aerosol.
6.2	Environmental precautions	Collect contaminated water/firefighting water separately. Do not allow to get into wastewater or waterways; if this occurs, inform the relevant water authority at once
6.3	Methods and materials for containment and cleaning up	For containment: No data For cleaning up: In the event of spillage, take up mechanically (e.g., sweep or vacuum up) into tightly closed containers. Adhere to personal protective measures. Flush any remainder with water. Collect the split soda lime/ water into suitable labelled containers and dispose of as prescribed in section 13 Other information: No data
6.4	Reference to other sections	See section 8 for personal protective equipment

7	SECTION 7: HANDLING AND STORAGE	
7.1	Precautions for safe handling	Protective measures: Handle in accordance with good hygiene and safety practice with appropriate PPE. Avoid the raising and deposition of dust during filling, pouring or moving material. Treat gently to prevent the formation and deposition of dust. Ensure only alkali resistant materials are in contact with the soda lime Measures to prevent fire: the product is not combustible, avoid the formation of dust, adhere to general fire prevention measures Measures to prevent aerosol and dust generation: Avoid generating dust by agitation Measures to protect the environment: No data Advice on general occupational hygiene: No data

7.2	Conditions for safe storage	Technical measures and storage: Keep in original containers away from acids Packaging materials: No data Requirements for storage rooms and vessels: Ensure adequate ventilation of the storage area. Keep containers tightly closed, cool (0-35°C) and dry, avoiding direct sunlight Storage class: - Further information on storage conditions: No data
7.3	Specific end use(s)	Recommendations: As an absorbing agent Industrial sector specific solutions: Medical/industrial carbon dioxide absorbent

8	SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION								
8.1	Control parameters								
	Workplace Exposure Limits (WELs) have been assigned by the HSE (EH40/2020)								
	STEL (15 mins)		ppm	2	mg/m³	Data for sodium hydroxide			
	LTEL (8-hour TWA)		ppm	5	mg/m³	Data for calcium hydroxide			
	Substance name	Sodium Hydroxide							
	EC number	215-185-5		CAS number	1310-73-2				
	DNELs								
		Workers				Consumers			
	Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effects local	Acute effects systemic	Chronic effects local	Chronic effects systemic
	Oral	Oral				Not required	No data	High hazard (no threshold derived)	No data
	Inhalation	Inhalation	No hazard identified	No hazard identified	1 mg/m³	No hazard identified	No hazard identified	Inhalation	No hazard identified
	Dermal	Dermal	High hazard (no threshold derived)	No hazard identified	High hazard (no threshold derived)	No hazard identified	High hazard (no threshold derived)	Dermal	High hazard (no threshold derived)
	PNECs								
	Environmental protection target					PNEC			
	Fresh water					No data (testing technically not feasible)			
	Freshwater sediments					No data (testing technically not feasible)			
	Marine water					No data (testing technically not feasible)			
	Marine sediments					No data (testing technically not feasible)			
	Food chain					No potential for bioaccumulation			
	Microorganisms in sewage treatment					No data (testing technically not feasible)			
	Soil (agriculture)					No data (testing technically not feasible)			
	Air					No hazard identified			
	Substance name	Calcium Dihydroxide							
	EC number	215-137-3		CAS number	1305-62-0				
	DNELs								
		Workers				Consumers			
	Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic	Acute effects local	Acute effects systemic	Chronic effects local	Chronic effects systemic
	Oral	Not required				No data	No hazard identified	No data	No hazard identified
	Inhalation	4 mg/m³	No hazard identified	1 mg/m³	No hazard identified	4 mg/m³	4 mg/m³	No hazard identified	1 mg/m³
	Dermal	Low hazard (No threshold derived)	No hazard identified	Low hazard (No threshold derived)	No hazard identified	Low hazard (No threshold derived)	Low hazard (No threshold derived)	No hazard identified	Low hazard (No threshold derived)
	PNECs								
	Environmental protection target					PNEC			
	Fresh water					0.49 mg/L			
	Freshwater sediments					Insufficient data available (further information necessary)			
	Marine water					0.32 mg/L			
	Marine sediments					Insufficient data available (further information necessary)			

	Food chain	No potential for bioaccumulation
	Microorganisms in sewage treatment	3 mg/L
	Soil (agriculture)	1080 mg/kg soil dw
	Air	No hazard identified
8.2	Exposure controls	
	Appropriate engineering controls	Substance/ mixture related measures to prevent exposure during identified uses: No data Structural measures to prevent exposure: Provide adequate ventilation (e.g., local exhaust ventilation) Organisational measures to prevent exposure: No data Technical measures to prevent exposure: No data
	Personal protection equipment	Observe normal standards for handling chemicals Wash hands before breaks and after work Avoid inhalation of dust if raised Wear personal protective equipment appropriate to the task (see below)
	Eye and face protection	Safety goggles if risk of eye contamination; BS EN 166:2002
	Skin protection	Hand protection: Suitable Nitrile gloves PPE Cat. III according to (EU) regulation, 2016/425, thickness 0.15-0.12 mm, breakthrough time, 8 hours. Please also consider your own risk assessment e.g., tasks undertaken Other skin protection: Protective overalls; disposable paper suit.
	Respiratory protection	Approved dust mask or respirator (e.g., EN 149:2001 FFP3) for dust if ventilation is insufficient
	Thermal hazards	No data
	Environmental exposure controls	No data

9	SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES			
9.1	Information on basic physical and chemical properties			
	Physical state	Solid	Colour	White or coloured
	Odour	Odourless	pH	< 12.5
	Boiling pt/range	Not determined	Melting point/freezing point	Not determined
	Flash point	Not applicable	Relative density	~ 0.9g/cm³
	Solubility	Slight	Odour threshold	Not applicable
	Evaporation rate	Not applicable	Flammability	Not applicable
	Lower and upper explosion limit	Not applicable	Vapour pressure	Not applicable
	Relative vapour density	Not applicable	Partition coeff. LogPoct/water	Not applicable
	Auto-ignition temperature	Not applicable	Kinematic viscosity	Not applicable
	Explosive properties	Not determined	Oxidising properties	Not determined
	Decomposition temperature	Not determined	Particle characteristics	Not determined
9.2	Other information	None known		

10	SECTION 10: STABILITY AND REACTIVITY	
10.1	Reactivity	Heat is generated if exposed to acids
10.2	Chemical stability	Stable under normal conditions of handling
10.3	Possibility of hazardous reactions	Hazardous polymerisation will not occur
10.4	Conditions to avoid	Contact with air – formation of calcium and sodium carbonate
10.5	Incompatible materials	Chloroform, trichloroethylene
10.6	Hazardous decomposition products	None

11	SECTION 11: TOXICOLOGICAL INFORMATION						
11.1	Information on hazard classes as defined in Regulation (EC) No 1272/2008						
	Hazard class	Method	Species	Route of exposure	Effective dose	Exposure time	Results
	Acute toxicity	LD (lo)	Rabbit	Oral	500 mg/kg	No data	Data for sodium hydroxide
		LD_{50}	Rat	Oral	>7000 mg/kg	No data	Data for calcium hydroxide
	Skin corrosion/ irritation	Highly corrosive					
	Serious eye damage/ irritation	Causes serious eye damage					
	Respiratory or skin sensitisation	Not a sensitiser					
	Germ cell mutagenicity	No clastogenic activity observed					
	Reproductive toxicity	Not applicable					

	Summary of evaluation of the CMR properties	No valid studies were identified regarding developmental toxicity nor toxicity to reproduction in animals after oral, dermal or inhalation exposure to NaOH
	STOT-single exposure	LD50 325 mg/kg bw
	STOT-repeated exposure	Oral, rat one-year study. No effects observed.
	Aspiration hazard	No data
11.2	Information on other hazards	Although using the 'conventional method' under CHIP the product classification would be 'corrosive', using EU official *in vitro* tests on the whole product, it was found to be irritating to eyes and skin, not corrosive

12	SECTION 12: ECOLOGICAL INFORMATION	
12.1	Toxicity (Calcium hydroxide)	
	Acute (short-term) toxicity	Fish: 96h LC50 50.6 mg/L (*Onchorhyncus mykiss)* Crustacea: No data Algae/aquatic plants: ECr50 (72h) 184.57 mg/L (*Pseudokirchneriella subcapitata)* Other organisms 48h EC50 49.1 mg /L (*Daphnia magna)*
	Chronic (long-term) toxicity	Fish: No data Crustacea: 14d NOEC 32 mg/L Sand shrimp (*Crangon septemspinosa)* Algae/aquatic plants NOEC 48 mg/L (*Pseudokirchneriella subcapitata)* Other organisms: No data
12.2	Persistence and degradability	Abiotic Degradation: No data Physical- and photo-chemical elimination: No data Biodegradation: Not applicable to inorganic substances
12.3	Bioaccumulative potential	Partition coefficient n-octanol /water (log Kow): No data Bioconcentration factor (BCF): No data
12.4	Mobility in soil	Known or predicted distribution to environmental compartments: No data Surface tension: No data Adsorption/Desorption: No data
12.5	Results of PBT and vPvB assessment	Not determined
12.6	Endocrine disrupting properties	Not determined
12.7	Other adverse effects	No data

13	SECTION 13: DISPOSAL CONSIDERATIONS	
13.1	Waste treatment methods	
	Product/packaging disposal	If possible, recycle to supplier or approved recycling company. If not (e.g., designated as waste), dispose of in accordance with national and local authority regulations, e.g. The Hazardous Waste (England & Wales) Regulations 2005. Treat empty containers in the same way as the product. If possible, wash out thoroughly and recycle Waste codes/ waste designations according to LoW: No data
	Waste treatment-relevant information	No data
	Sewage disposal-relevant information	No data
	Other disposal recommendations	No data

14	SECTION 14: TRANSPORT INFORMATION				
14.1	UN number or ID number	Not classified	14.2	UN proper shipping name	Not classified
14.3	Transport hazard class(es)	Not classified	14.4	Packing group	Not classified
14.5	Environmental hazards	The product should not be marked as a marine pollutant	14.6	Special precautions for user	Not applicable
14.7	Maritime transport in bulk according to IMO instruments	Not applicable			

15	SECTION 15: REGULATORY INFORMATION
15.1	Safety, health and environmental regulations
	The SDS has been updated in accordance with EC Regulation No 1272/2008 (CLP/GHS),
15.2	Chemical safety assessment
	Not applicable

16	SECTION 16: OTHER INFORMATION	
	Indication of changes	This SDS has been revised in accordance with EC Regulation 1272/2008 (CLP) and in response to a change in Annex II REACH regulations, June 2020. Classification change from Eye irrit. 2 to Skin irrit 2

	Abbreviations and acronyms	None	
	Key literature references and sources for data	Other suppliers' safety data sheets, Annex VI of the CLP Regulation (EC) No 1272/2008, EH40 (2020) OECD 431, 2004 Testing of chemicals, in vitro skin corrosion, human skin test model, ECHA website	
	Prepared by	Dr Patricia Wormald, Molecular Products, pw@molprod.com Neil Stearn, Cambridge Environmental Assessments, neil.stearn@cea-res.co.uk	
	Date of issue	30 January 2022	
	Classification according to Regulation (EC) Nr 1272/2008		Classification procedure
	Skin irrit 2, H315		
	Eye dam. 1, H318		
	Relevant H statements (number and full text)	H315, Causes skin irritation H318, Causes serious eye damage H335, May cause respiratory irritation	
	Further information	Comply with COSHH Regulations This information is based on our present state of knowledge and is intended to describe our products from the point of view of the safety requirements. It should not be construed as guaranteeing specific problems	