Safety Data Sheet - SDS
Natural Hydraulic Lime NHL

Issue no. 3 of 7 October 2024

1. IDENTIFICATION OF THE MIXTURE AND THE COMPANY/COMPANY

1.1 Product Identifier

Hydraulic lime, hydraulic natural lime

Trade name**
CALIX NHL

- *Chemical name and formula*: not applicable, multi-constituent substance (origin: inorganic)
- *CAS*: 85117-09-5
- *EINECS*: 285-561-1
- *REACH registration number*: 01-2119475523-36-0001

(*) regulated by the NF EN 459-1 October 2002 standard
(**) *the trade name may also include the suffix Italcementi*

1.2 Relevant identified uses of the substance or mixture and discouraged uses

The identified uses are available in Table 1.

Not recommended use: there is no use not recommended.

Table 1

ES number	Exposure scenario title	Manufacture	Identified uses			Resulting life cycle stage	Linked to Identified Use	Sector of use category (SU)	Chemical Product category (PC)	Process category (PROC)	Article category (AC)	Environmental release category (ERC)
			Formulation	End use	Consumer	Service life (for articles)						
9.1	Manufacture and industrial uses of aqueous solutions of lime substances	X	X	X		X	1	3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b
9.2	Manufacture and industrial uses of low dusty solids/powders of lime substances	X	X	X		X	2	3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27a, 27b	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b
9.3	Manufacture and industrial uses of medium dusty solids/powders of lime substances	X	X	X		X	3	3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27a, 27b	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b
9.4	Manufacture and industrial uses of high dusty solids/powders of lime substances	X	X	X		X	4	3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27a, 27b	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 11a

9.5	Manufacture and industrial uses of massive objects containing lime substances	X	X	X		X	5	3; 1, 2a, 2b, 4, 5, 6a, 6b, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	6, 14, 21, 22, 23, 24, 25	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	1, 2, 3, 4, 5, 6a, 6b, 6c, 6d, 7, 12a, 12b, 10a, 10b, 11a, 11b
9.6	Professional uses of aqueous solutions of lime substances		X	X		X	6	22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	2, 3, 4, 5, 8a, 8b, 9, 10, 12, 13, 15, 16, 17, 18, 19	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	2, 8a, 8b, 8c, 8d, 8e, 8f
9.7	Professional uses of low dusty solids/powders of lime substances		X	X		X	7	22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	2, 3, 4, 5, 8a, 8b, 9, 10, 13, 15, 16, 17, 18, 19, 21, 25, 26	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	2, 8a, 8b, 8c, 8d, 8e, 8f
9.8	Professional uses of medium dusty solids/powders of lime substances		X	X		X	8	22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	2, 3, 4, 5, 8a, 8b, 9, 10, 13, 15, 16, 17, 18, 19, 25, 26	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	2, 8a, 8b, 8c, 8d, 8e, 8f, 9a, 9b
9.9	Professional uses of high dusty solids/powders of lime substances		X	X		X	9	22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24	1, 2, 3, 7, 8, 9a, 9b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40	2, 3, 4, 5, 8a, 8b, 9, 10, 13, 15, 16, 17, 18, 19, 25, 26	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	2, 8a, 8b, 8c, 8d, 8e, 8f
9.10	Professional use of lime substances in soil treatment		X	X			10	22	9b	5, 8b, 11, 26		2, 8a, 8b, 8c, 8d, 8e, 8f
9.11	Professional uses of articles/containers containing lime substances			X		X	11	22; 1, 5, 6a, 6b, 7, 10, 11, 12, 13, 16, 17, 18, 19, 20, 23, 24		0, 21, 24, 25	1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 13	10a, 11a, 11b, 12a, 12b
9.12	Consumer use of building and construction material (DIY)				X		X					8

1.3 Safety Data Sheet Provider Information

HEIDELBERG MATERIALS ITALIA CEMENTI SPA
Innovation Campus Milan
Via Lombardia 2/A
20068 Peschiera Borromeo (MI)
reach.ita@heidelbergmaterials.com
www.heidelbergmaterials.it

1.4 Emergency telephone number

Hospital	City	Address - Zip Code	Telephone
University Hospital of Foggia	Foggia	V.le Luigi Pinto, 1 - 71122	800183459
"A. Cardarelli" Hospital	Naples	Via A. Cardarelli, 9 - 80131	081-5453333
CAV Policlinico "Umberto I"	Rome	V.le del Policlinico,155 - 00161	06-49978000
CAV Policlinico "A. Gemelli"	Rome	Largo Agostino Gemelli, 8 - 00168	06-3054343
"Careggi" Hospital U.O.	Florence	Largo Brambilla, 3 - 50134	055-7947819

Medical Toxicology			
CAV National Toxicological Information Centre	Pavia	Via Salvatore Maugeri, 10 - 27100	0382-24444
Niguarda Ca' Granda Hospital	Milan	Piazza Ospedale Maggiore,3 - 20162	02-66101029
Papa Giovanni XXII Hospital	Bergamo	Piazza OMS, 1 - 24127	800883300
CAV "Ospedale Pediatrico Bambino Gesù", Dept. Emergency and DEA Acceptance	Rome	Piazza Sant'Onofrio, 4 - 00165	06-68593726
Integrated Hospital Verona	Verona	Piazzale Aristide Stefani, 1 - 37126	800011858

Available outside office hours YES ☑ NO ☐

2. HAZARD IDENTIFICATION

2.1 Classification of the substance according to Regulation (EU) 1272/2008 (CLP)

Hazard class	Hazard category	HAZARD STATEMENTS
Irritation	2	H315: Causes skin irritation
Severe eye injury/eye irritation	1	H318: Causes serious eye damage
Specific toxicity for target organs (single exposure) Respiratory irritation	3	H335: May irritate the respiratory tract

2.2 Label elements

Pursuant to Regulation 1272/2008 (CLP)

Hazard pictograms

Warnings

Danger

Hazard statements

H318: Causes serious eye damage

H315: Causes skin irritation

H335: May irritate the respiratory tract

Precautionary statements

P102: Keep out of reach of children.

P261: Avoid breathing dust.

P280: Wear protective gloves/ Protective clothing / Protect your eyes / face.

P302 + P352: IN CASE OF CONTACT WITH SKIN: Wash thoroughly with soap and water.

P304 + P340: IF INHALED: Carry the victim to fresh air and keep him at rest in a position that favors breathing.

P305 + P351 + P338: IF IN EYES: Rinse thoroughly for several minutes. Remove any contact lenses if the person wears them and if it is easy to do so. Continue rinsing.

P310 Contact a POISON CENTER or physician immediately.

P332 + P313: If skin irritation occurs: Seek medical attention.
P501: Dispose of the product/container at a waste collection point. Previously, the natural hydraulic lime must be rendered inert by hardening with water and the packaging must be emptied completely.

Additional information
//

2.3 Other hazards
Not applicable: The substance does not meet the criteria for PBT and vPvB substances or mixtures in accordance with Annex XIII of the REACH Regulation. No other hazards have been identified.

3. COMPOSITION/INGREDIENT INFORMATION

3.1 Substances
Natural hydraulic lime (NHL) (CAS: 85117-09-5 ; EINECS: 285-561-1) is produced by calcination of more or less clayey or siliceous limestones with powder reduction by quenching, with or without crushing. All NHLs have the property of setting and hardening in the presence of water. Carbon dioxide in the air also contributes to the hardening process.

Main components:
Name: **Calcium Hydroxide**
CAS: 1305-62-0
EINECS: 215-137-3
Concentration: 15-65 % (m/m) – (30 % (m/m))

Name: **Calcium Silicate**
CAS: 10034-77-2
EINECS: 233-107-8
Concentration: 10-45 % (m/m) - (30 % (m/m))

Name: **Calcium Carbonate**
CAS: 471-34-1
EINECS: 207-439-9
Concentration: 10-40 % (m/m) (25 % (m/m))
Impurity:
No impurities emerged from classification or labelling.

3.2 Mixtures
//

4. FIRST AID MEASURES

4.1 Description of first aid measures

General notes
No deferred effects are known. Consult a physician in any case of severe exposure and in case of doubt.

In case of inhalation
Move the victim away from the source of the dust and place them in the open air or move the source away from the victim.
Seek medical attention as soon as possible.

In case of skin contact
Remove all traces of product with moderate and careful brushing of the affected surfaces of the body. Wash the affected area thoroughly with fresh water. Remove contaminated clothes.

If necessary, seek medical advice.

In case of contact with eyes
Rinse immediately and thoroughly with water or, if possible, with an isotonic solution. Ask
A medical opinion

If swallowed
Clean the mouth with water and make the victim drink plenty of water.
Do not induce vomiting.
Call a doctor immediately and show him the label.

4.2 Main symptoms and effects, both acute and delayed
Natural hydraulic lime does not present acute toxicity to the respiratory tract by the oral, cutaneous or respiratory routes. The substance is classified as an irritant to the skin and respiratory tract and poses a risk of serious eye damage. No nefarious systemic effects are suspected; the main danger being due to local effects (pH-effect).

4.3 Indication of whether medical attention and special treatment are required immediately
To date, no immediate medical treatment or particular treatment is indicated.
Follow the advice given in Section 4.1.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
The product is not combustible. Use a dry powder, foam or a CO2-free extinguishing medium to extinguish the spread fire.
Use extinguishing means appropriate to the local circumstances and the particular environment in which you find yourself.

5.1.2 Inappropriate extinguishing means
Do not use water.

5.2 Special hazards arising from the mixture
product is not combustible. It does not present any particular risk in the event of fire

5.3 Recommendations for Fire Extinguishers
Avoid dust dispersion. Use a respiratory device. Use appropriate extinguishing means
local circumstances and particular environment. Avoid using water for extinction in the environment.

6. MEASURES IN CASE OF ACCIDENTAL RELEASE

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1 For those who do not intervene directly
Ensure sufficient ventilation. Limit the spread of dust as much as possible.
Remove those who do not have appropriate protection. Avoid any contact with skin, eyes and clothing – bring appropriate protective equipment (see Section 8).
Avoid inhalation of dust – ensure sufficient ventilation or wear protective equipment, wear appropriate protective clothing (see Section 8).

6.1.2 For those who intervene directly

Limit the spread of dust as much as possible. Ensure sufficient ventilation.
Remove people who do not have protection. Avoid any contact with skin, eyes and clothing – bring appropriate protective equipment (see Section 8)
Avoid inhaling dust – ensure sufficient ventilation or bring protective equipment, wear appropriate protective clothing (see Section 8).

6.2 Environmental Precautions

Delimit the spilled product. Keep the material as dry as possible. If possible, cover the area so as to avoid any unnecessary damage due to dust. Avoid spillage of uncontrolled residues into water reserves and drainage systems (increase in pH). Any resulting spillage into water reserves must be reported to the Environment Agency or any other competent authority.

6.3 Methods and materials for containment and remediation

Collect the product in a properly labeled rescue container. Prevent the formation and dispersion of dust. Keep the material dry as much as possible.
Collect the product mechanically in a dry place. Use a vacuum suction system, or pile the product into bags. Solidify the product before discarding it as described in Section 13.

6.4 Reference to other sections

For more detailed information on exposure/personal protective controls or elimination measures, please refer to Sections 8 and 13 in conjunction with the annex to this Safety Data Sheet.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

7.1.1 Protective measures

Avoid contact with skin, eyes and mucous membranes. Wear appropriate protective equipment (refer to Section 8 of this Safety Data Sheet).
Do not wear contact lenses when handling this product; It is also recommended to keep individual pocket eye drops with you.
Avoid the formation or dispersion of dust. Close the sources of dust and use extraction fans (dust collector at the treatment points). Also include transport systems.
Comply with Directive 90/269/EEC when handling hydraulic lime bags

7.1.2 General workplace hygiene information

Avoid inhalation, ingestion and contact with skin and eyes.
"Barrier" creams can also be used. Wash your hands after any handling.
General occupational hygiene measures are also required to ensure the safe handling of the substance.
These measures include: good personal practices, regular cleaning of workplaces, not drinking, eating or smoking in the workplace.
Take a shower and change clothes once you have finished work. Do not bring contaminated clothes home.
Separate work clothes from others. Wash them separately.

7.2 Conditions for safe storage, including any incompatibilities

Conditions for safe storage

Store out of reach of children. Store away from moisture.
Do not use aluminum for transportation or storage if there is a risk of coming into contact with water.
Bulk storage must be carried out in dedicated silos

Incompatible materials

Strong acids and nitrogenous components.

Organic materials.

Avoid all contact with air and moisture.

7.3 Special end uses

The conditions of use must be complied with (refer to the technical instructions).

For more information, please refer to the exposure scenarios available in the Annex and more specifically to Section '2.1: Monitoring workers' exposure' of the exposure scenario.

8. EXPOSURE/PERSONAL PROTECTION CONTROLS

8.1 Control parameters

Occupational exposure limit values:

- Italy: Powders considered to have no specific effect:
  inhalable fraction (calcium hydroxide): TWA: 5 mg/m3

- Recommendations of the Scientific Committee on Occupational Exposure (SCOEL [1]):

Natural hydraulic lime (NHL):

Acute effects: DNEL: 4 mg/m3 (respirable dusts)

Long-term effects: DNEL: 1 mg/m3 (respirable dusts).

8.2 Exposure Controls

To control potential risks, dust should be avoided. Appropriate protective equipment must also be worn. Eye protection equipment (e.g. goggles or visors) is also required, except in cases where possible contact with the eyes can be ruled out depending on the nature and type of application (closed-circuit procedure). In this case, you must wear face protection, protective clothing and safety footwear.

Refer to the relevant exposure scenarios attached to this Safety Data Sheet.

8.2.1 Suitable roadworthiness tests

If use of the product creates dust, use enclosed locations, local ventilation, or other technical means to keep dust levels in the air below recommended exposure limits.

8.2.2 Personal protective measures such as personal protective equipment

Eye/face protection

Do not wear contact lenses.

Use watertight glasses with side shielding or glasses with a wide field of vision. It is also recommended to have individual pocket eye drops with you.

Skin protection

Because natural hydraulic lime is classified as a skin irritant, dermal exposure should be minimized as far as technically possible. It is mandatory to wear protective gloves made of nitrile rubber (breaking time (min) > 480). The gloves used must comply with the specifications of Directive 89/686/EEC and the corresponding standard NF EN 374.

It is mandatory to wear protective clothing that completely covers the skin (long trousers, long sleeves, clothes

with narrow openings) and waterproof footwear resistant to caustic products.

Respiratory protection

To keep dust levels below the set threshold values, local ventilation is recommended. A suitable dust mask (P1) is mandatory. Refer to the relevant exposure scenarios attached to this Safety Data Sheet).

Thermal hazards

The substance does not present any thermal hazards.

8.2.3 Environmental exposure controls

Air coming out of ventilation or dust extraction systems will need to be filtered before it is released into the atmosphere.

Stem the spill. Any major spill into a watercourse must be reported to the relevant authorities.

For detailed information on risk management measures to control environmental exposure to your substance, please refer to the relevant exposure scenarios attached to this Safety Data Sheet.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on fundamental physical and chemical properties

Appearance: Physical State: Dust

Average particle size: 20 - 30%: < 5 µm

Color: White or Grey

Odor: None

Olfactory threshold: None

PH: 12-13

Melting point / freezing point: Melting point > 450°C

Boiling Start Point and Boiling Range: Not applicable

Flash Point: Not applicable (non-flammable solid)

Evaporation Percentage: Not applicable (mineral solid)

Flammability (solid, gas): Not applicable (non-flammable substance)

Upper / lower flammability limits: Not applicable (non-flammable substance) or explosiveness:

Vapor Pressure: Not Applicable (Mineral Solid)

Vapor Density: Not applicable (solid mineral)

Bulk density: 0.5 - 0.76 g/cm3 at 20°C

Real density mass: 2.5 - 2.66 g/cm3 at 20°C

Relative Density: 2.66

Solubility: In water: 1.5 g/l at 20°C

Sharing coefficient (n-octanol/water): Not applicable

Self-flammability temperature: Not applicable (non-flammable solid)

Decomposition temperature: Data not available

Viscosity: Not applicable (solid)

Explosive properties: Not applicable (non-explosive substance)

Oxidizing properties: Not applicable (non-combustible substance)

9.2 Other information

No data are available on the miscibility or liposolubility (solvent-oil) of the mixture.

9.2.1 Information on the classification of physical hazard

Not applicable

9.2.2 Other Safety Features

Not applicable

10. STABILITY AND RESPONSIVENESS

10.1 Reactivity

In an aqueous environment, Ca(OH)2 dissociates, leading to the formation of calcium cations and hydroxyl anions (if below the solubility limit in water).

10.2 Chemical Stability

The product is stable at room temperature and under normal conditions of use and storage.

10.3 Possibility of dangerous reactions

Natural hydraulic lime reacts exothermic with acids. When heated to more than 580°C, calcium hydroxide decomposes to produce calcium oxide (CaO) and water (H2O): Ca(OH)2 -> CaO + H2O.
Calcium oxide reacts with water and generates heat; This can cause risks for flammable materials.

10.4 Conditions to avoid

Minimize exposure to air and moisture to avoid degradation.

10.5 Incompatible materials

Natural hydraulic lime reacts exothermistically with acids to form salts. In the presence of moisture, hydraulic lime reacts with aluminum and brass, producing hydrogen. $Ca(OH)_2 + 2Al + 6H2O \rightarrow Ca[Al(OH)_4]2 + 3H2$.

10.6 Hazardous decomposition products

No dangerous decomposition products to our knowledge. Additional information: Calcium hydroxide reacts with carbon dioxide to form calcium carbonate, which is a naturally occurring material.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

No cases of acute toxicity to natural hydraulic lime have been observed; therefore, an inhalation toxicity study with natural hydraulic lime is considered to be scientifically unjustified.
Oral: LD50 (rat) > 2000 mg/kg (OECD 425, test substance Ca(OH)2, rat). For cross-references, these results are also applicable to natural hydraulic lime.
Cutaneous: date not available
Inhalation: date not available
Classification for acute toxicity is not justified.
For respiratory irritating effects see below.

Skin corrosion / skin irritation:

Calcium hydroxide is irritating to the skin. For cross-references, these results are also applicable to natural hydraulic lime.
Based on experimental results of a similar substance, natural hydraulic lime is classified as a skin irritant [Skin Corrosion/Irritation, Category 2 (H315 – Causes Skin Irritation)].

Serious eye injury/eye irritation:

Calcium hydroxide carries a risk of serious eye damage (in vivo study of eye irritation in rabbits). For cross-

references, these results are also applicable to natural hydraulic lime.
Based on experimental results of a similar substance, natural hydraulic lime is classified as a severe eye irritant [Serious Eye Injury / Eye Irritation, Category 1 (H318 – Causes Serious Eye Damage)].

Respiratory or skin sensitization:

There are no data available.
Based on the nature of the effect (change in pH) and the essential need in calcium for human nutrition, hydraulic lime is considered to be non-sensitizing to the skin.
Some of the components that make up natural hydraulic lime, namely calcium carbonate, calcium silicate and calcined clay ores, are not known for any sensitization.
Classification as a sensitizer is not justified.

Mutagenicity on germ cells:

Bacterial reverse mutation test (Ca(OH)2 et CaO, Tests d'Ames, OECD 471): negative.
Mammalian test for chromosomal aberration (Ca(OH)2): negative.
For cross-reference, these results are applicable to natural hydraulic lime.
None of the components that make up natural hydraulic lime are known to be genotoxic.
The pH effect of natural hydraulic lime does not pose a mutagenic risk. There is also a lack of epidemiological data on the mutagenic potential of natural hydraulic lime.
Classification in genotoxicity is not justified.

Carcinogenicity:

Calcium (administered Ca of lactate) is not carcinogenic (experimental result in rats). The effect of pH does not give rise to a carcinogenic risk. There is also a lack of epidemiological data on the carcinogenic potential of natural hydraulic lime.
The classification as carcinogenic is not justified.

Reproductive toxicity:

Calcium (Ca administered in the form of carbonate) is not toxic to reproduction (experimental result on mice). The effect of pH does not give rise to a risk for reproduction.
There is also a lack of epidemiological data in terms of reproductive toxicity of natural hydraulic lime.
Clinical studies conducted on animals and humans [2], on different calcium salts, have found no effect on reproduction or development.
Natural hydraulic lime is not toxic to reproduction and/or development.
The classification as 'toxic' for reproduction in accordance with Regulation (EC) 1272/2008 is not justified.

Specific toxicity for some target organs – single exposure:

From human data on calcium oxide and calcium hydroxide, it was concluded, through cross-references, that natural hydraulic lime is irritating to the respiratory tract.
Based on human data (as recommended by SCOEL) and cross-referenced from similar substances (calcium oxide: CaO and calcium hydroxide: Ca(OH)2), hydraulic lime has been classified as a respiratory irritant (Specific toxicity for certain target organs – Unique exposure, category (H335 – May cause respiratory tract irritation)).

Specific toxicity for certain target organs – repeated exposure:

The toxicity of orally administered calcium is determined by the Tolerable Upper Intake (UL) for adults:
UL = 2500 mg Ca/day for adults throughout their lifetime, which corresponds to 36 mg calcium/kg body weight for a 70 kg adult (CSAH data: Scientific Committee on Food).
The toxicity of natural hydraulic lime via the dermal route is not considered relevant in view of the insignificant absorption by the skin and the primary effect of local irritation (pH change).

The toxicity of natural hydraulic lime by inhalation (local effect, irritation of the mucous membranes) is determined according to CaO and Ca(OH)2 by the Scientific Committee with regard to occupational exposure limits. (SCOEL): DNEL = 1 mg/m³ respirable dusts (cf. section 8.1) and VLEP (8 hours) = 1 mg/m3
Classification as 'toxic' following prolonged exposure is not justified.

Danger from inhalation:

Natural hydraulic lime does not present any danger by inhalation.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

In the aquatic environment and in the soil, exposure to natural hydraulic lime is reduced to exposure to calcium and hydroxide ions.

Acute/chronic toxicity on fish stocks

LC50 (96 hours) for freshwater fish: 50.6 mg/l (calcium hydroxide)
LC50 (96 hours) for saltwater fish: 457 mg/l (calcium hydroxide)

Acute/chronic toxicity on aquatic invertebrates

EC50 (48 hours) for freshwater invertebrates: 49.1 mg/l (calcium hydroxide)
LC50 (96 hours) for invertebrates living in the sea: 158 mg/l (calcium hydroxide)

Acute/chronic toxicity on aquatic plants

EC50 (72 hours) for fresh water: 184.57 mg/l (calcium hydroxide)
NOEC (72 hours) for fresh water: 48 mg/l (calcium hydroxide)

Toxicity to microorganisms such as bacteria

At high concentration, with the elevation of temperature and pH, calcium oxide is used for the disinfection of sewage sludge.

Chronic toxicity to aquatic organisms

NOEC (14d) for marine invertebrates: 32 mg/l (calcium hydroxide)

Toxicity on land-dwelling organisms

EC10/LC10 or NOEC for soil macroorganisms: 2000 mg/kg dry soil (calcium hydroxide)
EC10/LC10 or NOEC for soil microorganisms: 12000 mg/kg dry soil (calcium hydroxide)

Toxicity on terrestrial flora

NOEC (21d) for land plants: 1080 mg/kg (calcium hydroxide)

Generality

The product in its current state can be harmful to the aquatic environment due to a change in pH.
Although this product is useful for correcting the acidity of the water, an excess of more than 1 g/l can be harmful to the aquatic route. A pH > 12 decreases rapidly following dilution or carbonation

12.2 Persistence and degradability

Objectless (inorganic substance).

12.3 Bioaccumulation potential

Objectless (inorganic substance).

12.4 Mobility in soil

Calcium hydroxide reacts with moisture and/or carbon dioxide in the air to form calcium carbonate, which is poorly soluble and therefore has poor mobility in most soils.

12.5 PBT and vPvB assessment results

Objectless (inorganic substance).

12.6 Endocrine-disrupting properties

Data not available for the substance

12.7 Other adverse effects

Data not available for the substance

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Eliminate the container and the content used in accordance with the requirements of the applicable Member States and local states, in Italy Legislative Decree 152/2006 is in force. The packaging used is intended for packaging this product only, it should not be reused for other purposes. Discard the contents/receptacle at a waste collection point. Previously, the natural hydraulic lime must be made inert by hardening with water and the packages must be completely emptied.

14. TRANSPORT INFORMATION

The product is not subject to the requirements of the ADR/RID, OMI/IMDG and ICAO/IATA regulations for international transport.

Note: the regulatory requirements set out above are those in force on the day the data sheet is updated. However, taking into account the ever-changing regulations relating to the transport of dangerous materials, and in the event that the safety data sheet in your possession is more than 12 months old, it is advisable to check their validity with your sales agency.

14.1 UN number or ID number

Unregulated.

14.2 Official UN Transport Designation

Unregulated.

14.3 Transport-related hazard classes

Unregulated.

14.4 Packaging Assembly

Unregulated.

14.5 Hazards to the environment

Nobody.

14.6 Special precautions for users

Avoid any dust leakage during transport.

14.7 Bulk shipping in accordance with IMO acts

Unregulated.

15. REGULATORY INFORMATION

15.1 Health, safety and environmental laws and regulations specific to the substance or mixture

- Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Use of Chemicals (REACH) as amended.
- Regulation (EC) 1272/2008 on classification, labelling and packaging of substances and mixtures, with amendment and repeal of Directives 67/548/EEC and 1999/45/EC and Regulation 1907/2006/EC (CLP) as amended.
- Legislative Decree no. 81 of 9/04/2008 and subsequent amendments "Implementation of Article 1 of Law no. 123 of 3 August 2007, on the protection of health and safety in the workplace".
- Legislative Decree 152/2006 "Environmental regulations" and subsequent amendments
- Legislative Decree no. 44 of 1 June 2020 "Implementation of Directive (EU) 2017/2398 of the European Parliament and of the Council of 12 December 2017 amending Council Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work.
- Decree no. 47 of 9 August 2021 approving the "Guidelines on the classification of waste" referred to in the resolution of the Council of the National System for the Protection of the Environment of 18 May 2021, no. 105, as provided for by art. 184, paragraph 5 of Legislative Decree no. 152 of 2006, as amended by Legislative Decree no. no. 116 of 2020.

15.2 Chemical Safety Assessment

No chemical safety assessment is required.

16. OTHER INFORMATION

16.1 Indication of changes

This Safety Data Sheet has been revised pursuant to Regulation (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and to take into account the updated reference standards for Personal Protective Equipment.
The October 2024 revision is related to the addition of email.

16.2 Abbreviations and acronyms

ACGIH: American Conference of Industrial Hygienists
ADR/RID: Agreement on the transport of dangerous goods by road/Regulations on the international transport of dangerous goods by rail
APF: Assigned Protection Factor
CAS: Chemical Abstract Service
CLP: Classification, Labelling and Packaging (Regolamento 1272/2008)
COPD: Chronic Obstructive Pulmonary Disease
Transport document: transport document
DNEL: Derived no-effect level
PPE: Personal Protective Equipment
EC50: half maximale effective concentration
ECHA: European Chemical Health Agency
EPA: High Efficiency Air Filters (Particulate Matter)
FF P: Filtering Facepiece against Particles (monouso)
FM P: Filtering Mask against Particles with filter cartridge
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization
IMSBC: International Maritime Solid Bulk Cargoes

LC50: Median lethal dose
MEASE: Metal Exstimation and Assessment of Substance Exposure, EBRC Consulting GmbH for Eurometaux, http://www.ebrc.de/industrial-chemicals-reach/projects-and-references/mease.php
OEL: occupational exposure limit
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
PROC: Process Categories
RPE: Respiratory Protective Equipment
REACH: Registrazion, Evaluation and Authorization of Chemicals
SDS: Safety Data Sheet
STOT RE: Specific Target Organ Toxicity (Repeated Exposure)
STOT SE: Specific Target Organ Toxicity (Single Exposure)
TLV-TWA: Threshold Limit Value-Time Weighted Averages
vPvB: very persistent, very bioaccumulative

16.3 Bibliographic references and main data sources

1 U.S. EPA, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 3rd ed. EPA/600/7-91/002, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1994a) and 4th ed. EPA-821-R-02-013, US EPA, office of water, Washington D.C. (2002).

2 U.S. EPA, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 4th ed. EPA/600/4-90/027F, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1993) and 5th ed. EPA-821-R-02-012, US EPA, office of water, Washington D.C. (2002).

3 Environmental Impact of Construction and Repair Materials on Surface and Ground Waters. Summary of Methodology, Laboratory Results, and Model Development. NCHRP report 448, National Academy Press, Washington, D.C., 2001.

4 ECB: European Chemicals Bureau (Bureau Européen des substances Chimiques)

5 CIRC: International Centre for Research on Cancer (Centre International de Recherche sur le Cancer)

6 HSDB: (Hazardous Substances Data Bank) (National Library of Medicine)

7 INRS: (National Institute for Research and Security)

8 IUCLID: (International Uniform Chemical Information data Base)

9 RTECS: (Registry of Toxic effects of Chemical Substances)

10 [1] SCOEL: Anonymous, 2008: Recommendation from the Scientific Committee on Occupational Exposure Limits (SCOEL) for calcium oxide (CaO) and calcium dihydroxide (Ca(OH)2), European Commission, DG Employment, Social Affairs and Equal Opportunities, SCOEL/SUM/137 February 2008

11 [2] Anonymous, 2006: Tolerable upper intake levels for vitamins and minerals Scientific Committee on Food, European Food Safety Authority, ISBN: 92-9199-014-0 [SCF document]

16.4 Disclaimer

The information contained in this SDS reflects current available knowledge and it is reliable to expect that the product will be used under the prescribed conditions and in accordance with the indications provided on the packaging and/or in the technical literature. For any other use of the product, including the use of the product in combination with other products or in other processes, the responsibility lies with the user.
It is implicit that the user is responsible for the safety measures specifically identified and for the application of the appropriate operating procedures concerning the prevention of risks in his activities.
This SDS is also available in electronic format at: www.heidelbergmaterials.it