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| <b>SAFETY DATA SHEET</b><br><br><i>In accordance with Regulation (EU) no. 1907/2006<br/>Annex II of Regulation (EU) amendment no. 453/2010</i> | <b>CRUAS plant</b> |
| <b>HYDRAULIC LIME HL</b>   |                    |

**SECTION 1 : Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

Natural hydraulic lime with hydraulic admixtures, HL, stipulated by standard NF EN 459-1 :2012  
Trade name: "Chaux Blanche HL 3,5", "HL 5 TRADIFARGE PLUS" and "HL 5 TRADIBAT 85"

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

Uses: Render, colorwash, mortar, injection grout.  
Any use not specified above is advised against.

| PR OC | Identified uses – Description of uses  | Production/Product formulation | Professional/industrial use of the product |
|-------|--|--------------------------------|--|
| 1     | Use in closed processes, exposure unlikely   |                                |  |
| 2     | Use in closed, continuous process with occasional controlled exposure  |                                |  |
| 3     | Use in closed batch process (synthesis or formulation)   |                                |  |
| 5     | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) |                                |  |
| 8a    | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities   |                                |  |
| 8b    | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities       |                                |  |
| 9     | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)                    |                                |  |
| 19    | Hand-mixing with intimate contact and only PPE available   |                                |  |

**1.3 Details of the supplier of the safety data sheet**

Company name: LAFARGEHOLCIM CEMENTS  
Address: 2 Avenue du Général de Gaulle - 92140 CLAMART  
Telephone: 01 58 00 60 00  
Fax: 01 58 00 60 02

Email: crc@lafarge.com

**1.4 Emergency telephone**

**ORFILA (INRS) number: 01 45 42 59 59**  
European emergency telephone: 112  
Ambulance service: 15  
Fire service: 18

## SAFETY DATA SHEET

*In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010*

**CRUAS plant**

## HYDRAULIC LIME HL

### SECTION 2 : Hazards identification

#### 2.1 Classification of the substance or mixture

The mixture is classified according to 1272/2008/CE and directive 1999/45/EC

##### 2.1.1 Classification according to regulation 1272/2008/EC and its amendments

- H315 Causes skin irritation  
Corrosion/Skin irritation – category 2
- H 317 May cause an allergic skin reaction  
Skin sensitivity – category 1
- H 318 Causes serious eye damage  
Serious eye damage/eye irritation – category 1
- H 335 May cause irritation of the respiratory system  
Specific target organ systemic toxicity – Single exposure, category 3, irritation of the respiratory system

#### 2.2 Label elements

Labelling in accordance with CLP regulations

Hazard pictograms:



Signal word: **Danger**

Hazard statements:

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H318: Causes serious eye damage

H335: May cause irritation of the respiratory system

Precautionary statement:

P102: Keep out of reach of children

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.

P302+P352+P333+P313: IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: seek medical advice/attention.

P261+P304+P340+P312: Avoid breathing dust. IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician if you feel unwell.

P363: Wash contaminated clothing before reuse



|   |                    |
|---|--------------------|
| <b>SAFETY DATA SHEET</b><br><i>In accordance with Regulation (EU) no. 1907/2006<br/> Annex II of Regulation (EU) amendment no. 453/2010</i> | <b>CRUAS plant</b> |
| <b>HYDRAULIC LIME HL</b>  |                    |

P501: Dispose of the contents/packaging in a waste treatment center. Hydraulic lime must first be made inert by hardening with water and packaging must be completely emptied.

### 2.3 Other hazards

Not applicable: the substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of the REACH Regulation.  
No other hazards identified.

## SECTION 3 : Composition/information on ingredients

### 3.1 Mixtures

| Substance                              | Content | Registration no.      | EINECS    | CAS        | Classification under Regulation 1272/2008 |  |
|--|---------|-----------------------|-----------|------------|---|--|
|  |         |                       |           |            | Hazard category                           | Hazard statement                                     |
| Natural hydraulic lime                 | 50-95%  | 01-2119475523-36-0004 | 285-561-1 | 85117-09-5 | STOT SE 3                                 | H335: May cause irritation of the respiratory system |
|  |         |                       |           |            | Skin irritation 2                         | H315: Causes skin irritation                         |
|  |         |                       |           |            | Serious eye damage/eye irritation 1       | H318: Causes serious eye damage                      |
| Portland cement clinker                | 0-50%   | Not applicable        | 266-043-4 | 65997-15-1 | STOT SE 3                                 | H335: May cause irritation of the respiratory system |
|  |         |                       |           |            | Skin irritation 2                         | H315: Causes skin irritation                         |
|  |         |                       |           |            | Serious eye damage/eye irritation 1       | H318: Causes serious eye damage                      |
|  |         |                       |           |            | Skin sensitivity 1                        | H317: May cause an allergic skin reaction            |
| Dust from manufacturing cement clinker | 0-5%    | 01-2119486767-17-0003 | 270-659-9 | 68475-76-3 | STOT SE 3                                 | H335: May cause irritation of the respiratory system |
|  |         |                       |           |            | Skin irritation 2                         | H315: Causes skin irritation                         |
|  |         |                       |           |            | Serious eye damage/eye irritation 1       | H318: Causes serious eye damage                      |
|  |         |                       |           |            | Skin sensitivity 1                        | H317: May cause an allergic skin reaction            |



## SAFETY DATA SHEET

*In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010*

**CRUAS plant**

## HYDRAULIC LIME HL

### SECTION 4 : First aid measures

#### 4.1 Description of first aid measures

##### General advice:

No known delayed effects. Contact a doctor/physician in all cases of severe exposure or if in doubt.

##### In the event of eye contact:

Do not rub eyes in order to avoid possible cornea damage as a result of mechanical stress.

Remove contact lenses if any. Incline head to injured eye, open the eyelid(s) widely and flush eye(s) immediately by thoroughly rinsing with plenty of clean water for at least 20 minutes to remove all particles. Avoid flushing particles into uninjured eye. If possible, use isotonic water (0.9% NaCl). Contact a specialist of occupational medicine or an eye specialist.

##### In the event of skin contact:

Remove all traces of product by gently and carefully brushing the affected areas of the body. Rinse the affected area abundantly with running water. Remove contaminated clothing, footwear, etc. and clean thoroughly before re-using them. Seek medical treatment in all cases of irritation or burns.

##### In the event of inhalation:

Move the person to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops or if discomfort, coughing or other symptoms persist.

##### In the event of ingestion:

Do not induce vomiting. If the person is conscious, wash out mouth with water and give plenty of water to drink. Get immediate medical attention or contact the anti-poison center.

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

Eyes: Eye contact with hydraulic lime (dry or wet) may cause serious and potentially irreversible eye damage.

Skin: Hydraulic lime may have an irritating effect on moist skin (due to sweat or humidity) after prolonged contact or may cause contact dermatitis after repeated contact.

Prolonged skin contact with wet hydraulic lime or wet mortar may cause serious burns because they develop without pain being felt (for example when kneeling in wet concrete even when wearing trousers).

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

No immediate medical attention or special treatment is currently indicated. Follow the advice given in Section 4.1

When contacting a physician, take this SDS with you.

### SECTION 5 : Firefighting measures

#### 5.1 Extinguishing media

Hydraulic lime is non-flammable.

#### 5.2 Special hazards arising from the substance or mixture

The product is non-combustible and non-explosive. It poses no special hazard in the event of fire

#### 5.3 Advice for firefighters

Avoid dispersion of dust. Use breathing apparatus. Use fire-fighting equipment suitable to the local circumstances and specific environment. Do not discharge extinguisher water into the local environment.



## SAFETY DATA SHEET

*In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010*

**CRUAS plant**

## HYDRAULIC LIME HL

### SECTION 6 : Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Wear protective equipment as described under Section 8 and follow the advice for safe handling and use given under Section 7.

##### 6.1.2. For emergency personnel

Emergency procedures are not required.

However, respiratory protection is needed in situations with high dust levels.

#### 6.2 Environmental precautions

Collect the spillage. Maintain the material in a dry state if possible. If possible, cover the area to prevent any unnecessary hazard caused by dust. Do not wash uncontrolled residues into groundwater networks or down drainage systems (increases pH). Any significant spillage into groundwater networks must be notified to the Environment Agency or any other competent body.

#### 6.3 Methods and material for containment and cleaning up

Collect the product and place in a suitably labeled emergency container.

Prevent or limit the formation and spreading of dust.

Maintain the material in a dry state if possible.

Collect the product mechanically, in a dry state. Use cleanup methods which do not cause airborne dispersion of the product, such as vacuum clean-up or vacuum extraction (portable industrial systems equipped with high-efficiency air filters - EPA and HEPA - according to standard NF EN 1822-1:2010 - or equivalent technique). Never use compressed air.

#### 6.4 Reference to other sections

See Sections 8 and 13 for more details on exposure controls/personal protection and disposal considerations.

### SECTION 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 advisable to have individual pocket eyewash.

Avoid the formation and spreading of dust. Close sources of dust and use extraction fans (dust collector at handling points). Also include transportation systems.

Comply with Directive 90/269/CEE when handling bags of hydraulic lime.

##### 7.1.2. Advice on general occupational hygiene

Avoid inhalation, ingestion, as well as contact with your skin and eyes.

Barrier creams may be used.

Wash your hands after any handling.

General occupational hygiene measures are required to ensure a safe handling of the substance. These measures involve good personal and housekeeping practices, regular cleaning of the workplace, no eating, drinking or smoking in the workplace.

Shower and change clothes at the end of work. Do not wear contaminated clothes at home.

Separate work clothes from street clothes. Clean them separately.



|   |                    |
|---|--------------------|
| <b>SAFETY DATA SHEET</b><br><i>In accordance with Regulation (EU) no. 1907/2006<br/> Annex II of Regulation (EU) amendment no. 453/2010</i> | <b>CRUAS plant</b> |
| <b>HYDRAULIC LIME HL</b>  |                    |

## 7.2 Conditions for safe storage, including any incompatibilities

### Conditions for safe storage:

Keep out of reach of children.  
Store in a dry place.

Do not use aluminum for transportation and storage if there is a risk of contact with water.

Bulk storage must be in dedicated silos.

### Incompatible materials:

Strong acids and nitrogen compounds.

Organic materials.

Avoid contact with the air and humidity.

## 7.3 Specific end use(s)

No additional information for specific end uses (see sub-section 1.2).

# SECTION 8 : Exposure controls/personal protection

## 8.1 Control parameters

### 8.1.1. DNEL and PNEC

DNEL inhalation (8hr), cement: 3 mg/m<sup>3</sup> (respirable dust).

Recommendations of the scientific committee on occupational exposure limits (SCOEL [reference 8]):

- Acute effects: DNEL: 4 mg/m<sup>3</sup> (respirable dust),
- Long-term effects: DNEL: 1 mg/m<sup>3</sup> (respirable dust).

Calcium dihydroxide (CAS 1305-62-0):

- PNEC Aquatic environment: 490 µg/l
- PNEC Sun/groundwater: 1080 mg/l

### 8.1.2. Limit values for occupational exposure

France:

|  | Type of limit value     | VME | Unit              | Legal base                                 |
|--|-------------------------|-----|-------------------|--|
| Natural hydraulic lime                 | VLEP                    | 5   | mg/m <sup>3</sup> | Article R.4222-10 of the French Labor Code |
| Dust deemed to have no specific effect | VLEP<br>Total dust      | 10  | mg/m <sup>3</sup> | Article R.4222-10 of the French Labor Code |
| Dust deemed to have no specific effect | VLEP<br>Respirable dust | 5   | mg/m <sup>3</sup> | Article R.4222-10 of the French Labor Code |

## 8.2 Exposure controls

To control potential risks, generation of dust must be avoided. Appropriate protective equipment must be worn. Eye protection (e.g. goggles or visors) are required, unless all contact with eyes can be ruled out due to the nature and type of application (closed process). Where relevant, face protection, protective clothing and safety boots must be worn.



|  |                    |
|--|--------------------|
| <b>SAFETY DATA SHEET</b><br><i>In accordance with Regulation (EU) no. 1907/2006<br/>Annex II of Regulation (EU) amendment no. 453/2010</i> | <b>CRUAS plant</b> |
| <b>HYDRAULIC LIME HL</b>   |                    |

#### 8.2.1. Appropriate technical controls

If use of the product generates dust, use closed premises, local ventilation or other technical measures to maintain airborne dust levels below recommended exposure limits.

See table in paragraph 8.2.2.3 setting out the operational conditions to adhere to according to process categories.

#### 8.2.2. Individual protection measures, such as personal protective equipment

##### 8.2.2.1 Eye/face protection

Do not wear contact lenses.

Wear thick goggles fitted with side shields or wide vision goggles. It is also advisable to have individual pocket eyewash.

##### 8.2.2.2 Skin protection

Since hydraulic lime is classified as a skin irritant, skin exposure should be kept to a minimum whenever technically possible.

Wear protective gloves made out of nitrile rubber (break-up time (min) > 480). Gloves used must comply with directive 89/686/EEC and corresponding standard NF EN 374.

Use clothing fully covering skin (full length pants, long sleeved overalls, clothing with close fittings at openings) and footwear resistant to caustic products.

##### 8.2.2.3 Respiratory protection

When a person is potentially exposed to dust levels above Exposure Limits (see 8.1), use appropriate respiratory protection. The type of respiratory protection should be adapted to the dust level and conform to the relevant European standards. (NF EN 143, NF EN 149, NF EN 140 and NF EN 14387, NF EN 1827)

|   |                    |
|---|--------------------|
| <b>SAFETY DATA SHEET</b><br><i>In accordance with Regulation (EU) no. 1907/2006<br/> Annex II of Regulation (EU) amendment no. 453/2010</i> | <b>CRUAS plant</b> |
| <b>HYDRAULIC LIME HL</b>  |                    |

Depending on process categories, the following operational conditions and measures must be complied with:

| Use   | PROC(3)                      | Exposure       | Respiratory protection required | Effectiveness of respiratory protection - Assigned protection factor | Localized controls                         | Effectiveness |
|---|------------------------------|----------------|---------------------------------|--|--|---------------|
| Manufacturing and Industrial uses of dry hydraulic building materials               | 1                            | no restriction | not required                    | not required   | not required                               | not required  |
|   | 2, 3                         | no restriction | not required                    | not required   | general ventilation                        | 17%           |
|   | 5, 8b, 9,                    | no restriction | FFP2 mask                       | FPA = 10   | localized vacuum extraction system         | 78%           |
|   | 8a                           | <=240 min      | FFP2 mask                       | FPA = 10   | localized vacuum extraction system         | 78%           |
|   | 4                            | no restriction | FFP1 mask                       | FPA = 4  | localized vacuum extraction system         | 78%           |
|   | 19                           | <=240 min      | FFP3 mask                       | FPA = 20   | not required                               | not required  |
| Manufacturing and industrial uses of dry hydraulic building materials in suspension | 2, 3                         | no restriction | not required                    | not required   | general ventilation                        | 17%           |
|   | 5, 8b, 9                     | no restriction | FFP2 mask                       | FPA = 10   | generic localized vacuum extraction system | 78%           |
|   | 1, 4, 8a, 19                 | no restriction | not required                    | not required   | generic localized vacuum extraction system | 78%           |
| Professional uses of dry hydraulic building materials                               | 5, 4, 8a, 8b                 | <=240 min      | FFP2 mask                       | FPA = 10   | generic localized vacuum extraction system | 72%           |
|   | 9                            | <=240 min      | FFP1 mask                       | FPA = 4  | generic localized vacuum extraction system | 72%           |
|   | 19                           | <=240 min      | FFP3 mask                       | FPA = 20   | not required                               | not required  |
|   | 1, 2, 3                      | no restriction | FFP2 mask                       | FPA = 10   | not required                               | not required  |
| Professional uses of hydraulic building materials in suspension                     | 1, 2, 3, 4, 5, 8a, 8b, 9, 19 | no restriction | not required                    | not required   | not required                               | not required  |

(3) PROC: Categories of processes (uses) defined in sub-section 1.2.

#### 8.2.2.4 Thermal hazards

The product does not pose any thermal hazard.

#### 8.2.3. Appropriate environmental exposure control

Air from dust extraction or ventilation systems must be filtered before being discharged into the atmosphere.

Collect the discharge. Any significant discharge into bodies of water must be notified to the regulatory authority responsible for environmental protection.





## SAFETY DATA SHEET

In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010

CRUAS plant

## HYDRAULIC LIME HL

### SECTION 9 : Physical and chemical properties

#### 9.1 Information regarding essential physical and chemical properties

|  |  |
|--|--|
| Appearance                                   | : Physical state: Powder                 |
| Average size of particles                    | : 20-30%: < 5 µm                         |
| Color  | : white or gray                          |
| Odor   | : none                                   |
| Odor threshold                               | : None                                   |
| pH   | : 12-13                                  |
| Melting point/ freezing point                | : Melting point > 1000°C                 |
| Initial boiling point and boiling range      | : Not applicable                         |
| Flash point                                  | : Not applicable (non-flammable solid)   |
| Evaporation rate                             | : Not applicable (non-flammable solid)   |
| Flammability (solid, gas)                    | : Not applicable (non-flammable solid)   |
| Upper/lower flammability or explosive limits | : Not applicable (non-flammable solid)   |
| Vapor pressure                               | : Not applicable (non-flammable solid)   |
| Vapor density                                | : Not applicable (non-flammable solid)   |
| Bulk specific density                        | : 0.5 – 0.9 g/cm <sup>3</sup> at 20°C    |
| True specific density                        | : 2.4 – 2.8 g/cm <sup>3</sup> at 20°C    |
| Relative density                             | : 2.6                                    |
| Solubility                                   | : in water : 1.5 g/l at 20°C             |
| Partition coefficient: (n-octanol/water)     | : Not applicable                         |
| Auto-ignition temperature                    | : Not applicable (non-flammable solid)   |
| Decomposition temperature                    | : Not available                          |
| Viscosity                                    | : Not applicable (mineral solid)         |
| Explosive properties                         | : Not applicable (non-flammable solid)   |
| Oxidizing properties                         | : Not applicable (non-oxidizing mixture) |

#### 9.2 Other information

No data relating to the miscibility or fat solubility (oil solvency) of the mixture is available.

### SECTION 10 : Stability and reactivity

#### 10.1 Reactivity

No data is available for the mixture.

#### 10.2 Chemical stability

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

#### 10.3 Possibility of hazardous reactions

No data is available for the mixture.

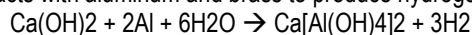
#### 10.4 Conditions to avoid

Minimize exposure to air and humidity to avoid deterioration.

#### 10.5 Incompatible materials

Hydraulic lime reacts exothermically with acids to form salts.

In the presence of humidity, hydraulic lime reacts with aluminum and brass to produce hydrogen, according to the reaction:



#### 10.6 Hazardous decomposition products

There is no hazardous decomposition product to our knowledge.

Additional information: Calcium dihydroxide reacts with carbon dioxide to form calcium carbonate, which is a common material in nature.

|  |                    |
|--|--------------------|
| <b>SAFETY DATA SHEET</b><br><br><i>In accordance with Regulation (EU) no. 1907/2006<br/>Annex II of Regulation (EU) amendment no. 453/2010</i> | <b>CRUAS plant</b> |
| <b>HYDRAULIC LIME HL</b>   |                    |

## SECTION 11 : Toxicological information

### 11.1 Information on toxicological effects

| Hazard category                   | Cat | Effect   | Reference                |
|-----------------------------------|-----|--|--------------------------|
| Acute toxicity - skin             | -   | Cement: Limit test, rabbit, 24 hours contact, 2,000 mg/kg body weight - no lethality.<br>Calcium dihydroxide: LD50 (rabbit) > 2500 mg/kg (test substance Ca(OH) <sub>2</sub> rabbit).<br>By cross-referencing, these results are applicable to natural hydraulic lime.<br>Based on available data, the classification criteria are not met.  | (2)                      |
| Acute toxicity - inhalation       | -   | No inhalation toxicity observed.<br>Based on available data, criteria justifying classification are not met.   | (9)                      |
| Acute toxicity – Oral             | -   | No indication of oral toxicity in tests carried out on cement kiln dust.<br>Calcium dihydroxide: LD50 (rat) > 2000 mg/kg (OCDE 425, substance tested Ca(OH) <sub>2</sub> , rat).<br>By cross-referencing, these results are applicable to natural hydraulic lime.<br>Based on available data, the classification criteria are not met.   | Bibliography             |
| Skin corrosion/irritation         | 2   | Cement in contact with wet skin may cause thickening, cracking or fissuring of the skin. Prolonged contact combined with abrasion may cause serious burns.<br>Calcium dihydroxide may cause irritation to the skin. By cross-referencing, these results are applicable to natural hydraulic lime.<br>On the basis of experimental tests on similar substances, natural hydraulic limes are classified as an irritant for the skin.<br>The mixture may cause irritation to the skin.  | (2)<br>Human observation |
| Serious eye damage/eye irritation | 1   | Portland cement clinker caused a mixed picture of corneal effects and the calculated irritation index was 128.<br>Direct contact with cement may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact by larger amounts of dry cement or splashes of wet cement may cause effects ranging from moderate eye irritation (e.g. conjunctivitis or blepharitis) to chemical burns and blindness.<br>Calcium dihydroxide has a risk of causing serious eye damage (in vivo eye irritation studies, rabbit).<br>By cross-referencing, these results are also applicable to natural hydraulic lime.   | (10), (11)               |
| Skin sensitivity                  | 1   | Some individuals may develop eczema upon exposure to wet cement dust, caused either by the high pH which induces irritant contact dermatitis after prolonged contact, or by an immunological reaction to soluble Cr (VI) which elicits allergic contact dermatitis.<br>The response may appear in a variety of forms ranging from a mild rash to severe dermatitis and is a combination of the two above mentioned mechanisms.   | (3), (4)                 |
| Respiratory sensitivity           | -   | There is no indication of sensitization of the respiratory system<br>Based on available data, the classification criteria are not met.   | (1)                      |
| Germ cell mutagenicity            | -   | Bacterial assay for gene mutation (Ca(OH) <sub>2</sub> and CaO, Ames tests, OCDE 471): negative.<br>Mammal chromosome aberration test (Ca(OH) <sub>2</sub> ): negative.<br>By cross-referencing, these results are applicable to natural hydraulic lime.<br>No constituents of natural hydraulic lime or cement are known to be genotoxic.<br>The pH effect of natural hydraulic lime does not present a mutagenic risk.<br>There is a complete lack of epidemiological data to show the mutagenic potential of natural hydraulic lime.<br>The classification "genotoxic" is not justifiable.  | (12), (13)               |
| Carcinogenicity                   | -   | No causal association has been established between Portland cement exposure and cancer.<br>The epidemiological literature does not support the designation of Portland cement as a suspected human carcinogen.<br>Portland cement is not classifiable as a human carcinogen (According to ACGIH A4: agents that cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data). In vitro or animal studies do not provide indications of carcinogenicity that are sufficient to classify the agent with one of the other notations).<br>Calcium (Ca administered as lactate) is not carcinogenic (experimental result on rats). The pH effect does not present a carcinogenic risk. There is a complete lack of epidemiological data to show the carcinogenic potential of natural hydraulic lime.<br>Based on available data, the classification criteria are not met. | (1)<br><br>(14)          |
| Reproductive toxicity             | -   | Calcium (Ca administered as lactate) is not toxic for reproduction (experimental result on mice).<br>The pH effect does not present a risk for reproduction.<br>There is a complete lack of epidemiological data to show the reproductive toxicity of natural hydraulic lime.<br>Clinical studies on animals and humans[2] with different calcium salts have not shown an effect on reproduction or development.<br>Natural hydraulic lime is not toxic for reproduction or development.<br>The definition "reproductive toxicity" in accordance with Regulation (CE)1272/2008 is not justified.   | No human observation     |

## SAFETY DATA SHEET

*In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010*

**CRUAS plant**

## HYDRAULIC LIME HL

|                         |   |  |      |
|-------------------------|---|--|------|
| STOT- single exposure   | 3 | <p>The mixture is classified as toxic on some specific target organs following single exposure – category 3. It may cause irritation to the respiratory system</p> <p>Cement dust may irritate the throat and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of exposure limit values.</p> <p>Cement dust may irritate the throat and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of exposure limit values.</p> <p>Overall, the pattern of evidence clearly indicates that occupational exposure to cement dust has produced deficits in respiratory function. However, evidence available at the present time is insufficient to establish with any confidence the dose-response relationship for these effects.</p> <p>Based on human data for calcium oxide and calcium dihydroxide, cross-referencing indicates that natural hydraulic lime may cause irritation to the respiratory system.</p> <p>Based on data for humans (according to SCOEL recommendations) and by cross-referencing based on similar substances CaO and Ca(OH)<sub>2</sub>, natural hydraulic lime is classed as an irritant to the respiratory system.</p> | (1)  |
| STOT- repeated exposure | - | <p>There is an indication of Chronic Obstructive Pulmonary Disease (COPD). The effects are acute and due to high exposures. No chronic effects or effects at low concentration have been observed.</p> <p>Based on available data, criteria justifying classification are not met.</p> <p>The toxicity of Calcium ingested is specified by the maximum tolerable limit (UL) for adults: UL = 2500 mg of Ca per day for adults over their lifetime corresponding to 36 mg of Ca per kg of bodyweight for an adult weighing 70kg (Data from CSAH: Comité scientifique de l'Alimentation Humaine).</p> <p>The toxicity of natural hydraulic lime by skin absorption is not considered pertinent due to its insignificant absorption and the primary effect of local irritation (effect p H).</p> <p>The toxicity due to inhalation (localized effects, mucous irritation ) due to the CaO and the Ca(OH)<sub>2</sub> is determined by SCOEL as follows: DNEL = 1 mg/m<sup>3</sup> breathable dust (see section 8.1).</p> <p>The definition "toxic after repeated exposure" is not justified.</p>  | (15) |
| Aspiration hazard       | - | Not applicable (the mixture is not used in an aerosol).  |      |
| Ingestion hazard        |   | If large amounts are swallowed: burns to the mouth, the esophagus, the digestive tract, nausea and vomiting  |      |

## SECTION 12 : Ecological information

### 12.1 Toxicity

#### No data is available for the mixture

Cement is not hazardous to the environment. Ecotoxicological tests with Portland cement on *Daphnia magna* [Reference (4)] and *Selenastrum coli* [Reference (5)] have shown little toxicological impact. Therefore LC50 and EC50 values could not be determined [Reference (6)]. There is no indication of sediment phase toxicity [Reference (7)].

Calcium dihydroxide (CAS: 1305 – 62- 0):

By cross reference, these results are applicable to natural hydraulic lime.

#### Acute/chronic toxicity to fish

LC50 (96h) for fresh water fish: 50.6 mg/l

LC50 (96h) for salt water fish: 457 mg/l

#### Acute/chronic toxicity to aquatic invertebrates

EC50 (48h) for fresh water invertebrates: 49.1 mg/l

LC50 (96h) for salt water invertebrates: 158 mg/l

#### Acute/chronic toxicity to aquatic plants

EC50 (72h) for fresh water seaweed: 184.57 mg/l

NOEC (72h) for fresh water seaweed: 48 mg/l

#### Toxicity to micro-organisms such as bacteria

In high concentration because of increases in temperature and pH, calcium oxide is used for the disinfection of sewage sludges.

#### Chronic toxicity to aquatic organisms



## SAFETY DATA SHEET

*In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010*

**CRUAS plant**

### HYDRAULIC LIME HL

NOEC (14d) for salt water invertebrates: 32 mg/l

#### Toxicity to organisms in the soil

EC10/LC10 or NOEC for macro organisms in the soil: 2000 mg/kg of dry soil

EC10/LC10 or NOEC for micro organisms in the soil: 12000 mg/kg of dry soil

#### Toxicity to terrestrial flora

NOEC (21d) terrestrial plants: 1080 mg/kg

#### **12.2 Persistence and degradability**

Not relevant (inorganic mixture).

#### **12.3 Potential bio-accumulation**

Not relevant (inorganic mixture).

#### **12.4 Mobility in soil**

Not relevant (inorganic mixture).

#### **12.5 Results of PBT and vPvB evaluations**

Not relevant (inorganic mixture).

#### **12.6 Other adverse effects**

Not applicable.

### **SECTION 13 : Disposal considerations**

#### **13.1 Waste treatment methods**

Dispose of unused bags and contents in accordance with applicable local and national legislation.

Bags are exclusively for containing the product and must not be utilized for any other use.

Dispose of the contents/packaging in a waste treatment center. Natural hydraulic lime must first be made inert by hardening with water and packaging must be completely emptied.

### **SECTION 14 : Transport information**

The product is not classified as hazardous by the international transport regulations ADR/RID (road), OMI/IMDG (sea) and OACI/IATA (air).

#### **14.1 United Nations Number**

Not regulated.

#### **14.2 United Nations Shipping name**

Not regulated.

#### **14.3 Transport hazards class(es)**

Not regulated.

#### **14.4 Packing group**

Not regulated.

#### **14.5 Environmental hazards**

Not regulated.

#### **14.6 Special precautions for user**

Avoid any external discharge of dust during transport.

#### **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not regulated.



## SAFETY DATA SHEET

In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010

CRUAS plant

## HYDRAULIC LIME HL

### SECTION 15 : Regulatory information

#### 15.1 Specific safety, health and environmental regulations/legislation for the substance or mixture

Hydraulic lime is a mixture in accordance with the REACH. As such it is not subject to registration.

Authorizations : Not required

Use restrictions : None

Other EU regulations : Hydraulic lime is not:

- a SEVESO substance,
- an ozone layer depleting substance,
- a persistent organic pollutant

National regulations (France): Labor Code: Articles L4411-1 et seq.

#### 15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

### SECTION 16 : Other information

All data is based on our current knowledge but does not constitute a guarantee for the properties of the product and does not form a contractual relationship.

Hazard and precautionary statements and risk phrases are set out in section 2.

#### 16.1 Reason for revision

Change of company name Lafarge Ciments in LafargeHolcim Ciments.

Replaces the version dated July 2019.

#### 16.2 Abbreviations and acronyms

|         |  |
|---------|--|
| ACGIH   | American Conference of Governmental Industrial Hygienists  |
| ADR/RID | European Agreements on the transport of Dangerous goods by Road/Railway  |
| APR     | Respiratory protection apparatus ( <i>Appareil de Protection Respiratoire</i> )  |
| COPD    | Chronic Obstructive Pulmonary Disease  |
| CAS     | Chemical Abstracts Service   |
| C&E     | Classification and Labeling ( <i>Classification &amp; Etiquetage</i> )   |
| CED     | European Waste Catalogue ( <i>Catalogue Européen des Déchets</i> )   |
| LD50    | Lethal dose: 50% of animals tested die   |
| DNEL    | Derived No-Effect Level  |
| EC50    | Effective Concentration at 50% (concentration of pollutant at which 50% of organisms exposed to tests present the tested effect, or concentration producing a maximum response among 50% of the population tested for a given exposure period)                             |
| EINECS  | European Inventory of Existing Commercial chemical Substances  |
| SDS     | Safety Data Sheet  |
| EPA     | Efficient Particulate Air filter   |
| FFP     | Filtering Facepiece Particles (filtration class P1 to P3)  |
| FFP     | Filtering Mask against Particles (filtration class P1 to P3)   |
| APF     | Assigned Protection Factor   |
| HEPA    | High Efficiency Particulate Air filter   |
| H&S     | Health and Safety  |
| IATA    | International Air Transport Association  |
| IMDG    | International agreement on the Maritime transport of Dangerous Goods   |
| LC50    | Lethal Concentration: 50% of animals tested die.   |
| LEP     | Limit value for occupational exposure ( <i>Limite d'Exposition Professionnelle</i> )   |
| m/m     | mass/mass  |
| MEASE   | Metals Estimation and Assessment of Substance Exposure, EBRC Consulting GmbH for Eurometaux.<br><a href="http://www.ebrc.de/ebrc/ebrc-mease.php">http://www.ebrc.de/ebrc/ebrc-mease.php</a><br>(Method for assessing risks of exposure to substances developed for metals) |
| PBT     | Persistent, Bioaccumulative and Toxic  |
| PNEC    | Predicted No-Effect Concentration  |
| PROC    | PROcess Category (uses)  |



## SAFETY DATA SHEET

In accordance with Regulation (EU) no. 1907/2006  
Annex II of Regulation (EU) amendment no. 453/2010

CRUAS plant

## HYDRAULIC LIME HL

|      |                                       |
|------|---------------------------------------|
| RCS  | Respirable Crystalline Silica         |
| ES   | Exposure Scenario                     |
| STOT | Specific Target Organ Toxicity        |
| RE:  | Repeated Exposure                     |
| SE   | Single Exposure                       |
| OELV | Occupational Exposure Limit Value     |
| TWA  | Time Weighted Average                 |
| vPvB | very Persistent, very Bioaccumulative |

### 16.3 Principal bibliography and Sources:

|      |  |
|------|--|
| INRS | French National research and Safety Institute ( <i>Institut National de Recherche et de Sécurité</i> ) |
| ECB  | European Chemicals Bureau  |
| ECHA | European Chemicals Agency  |

OCDE 425, substance tested Ca(OH)<sub>2</sub>, rat. By cross-referencing, these results are also applicable to natural hydraulic lime.

- (1) *Portland Cement Dust - Hazard assessment document EH75/7*, UK Health and Safety Executive, 2006. Available from: <http://www.hse.gov.uk/pubns/web/portlandcement.pdf>
- (2) *Observations on the effects of skin irritation caused by cement*, Kietzman et al, *Dermatosen*, 47, 5, 184-189 (1999).
- (3) *European Commission's Scientific Committee on Toxicology, Ecotoxicology and the Environment (SCTEE) opinion of the risks to health from Cr (VI) in cement* (European Commission, 2002). [http://ec.europa.eu/health/archive/ph\\_risk/committees/sct/documents/out158\\_en.pdf](http://ec.europa.eu/health/archive/ph_risk/committees/sct/documents/out158_en.pdf)
- (4) *Epidemiological assessment of the occurrence of allergic dermatitis in workers in the construction industry related to the content of Cr (VI) in cement*, NIOH, Page 11, 2003.
- (5) *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)
- (6) *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 5<sup>th</sup> ed. EPA-821-R-02-012, US EPA, office of water, Washington D.C. (2002)
- (7) *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.
- (8) *SCOEL : 2, 2008 Recommendation from the Scientific Committee on Occupational Exposure Limits (SCOEL) for calcium oxide (CaO) and calcium hydroxide (Ca(OH)<sub>2</sub>)*, European Commission, DG Employment, Social Affairs and Equal Opportunities, SCOEL/SUM/137 February 2008
- (9) *TNO report V8801/02, An acute (4-hour) inhalation toxicity study with Portland Cement Clinker CLP/GHS 03-2010-fine in rats, August 2010.*
- (10) *TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010*
- (11) *TNO report V8815/10, Evaluation of eye irritation potential of cement clinker W in vitro using the isolated chicken eye test, April 2010*
- (12) *Investigation of the cytotoxic and proinflammatory effects of cement dusts in rat alveolar macrophages*, Van Berlo et al, *Chem. Res. Toxicol.*, 2009 Sept; 22(9):1548-58.
- (13) *Cytotoxicity and genotoxicity of cement dusts in A549 human epithelial lung cells in vitro*; Gminski et al, Abstract DGPT conference Mainz, 2008
- (14) *Comments on a recommendation from the American Conference of governmental industrial Hygienists to change the threshold limit value for Portland cement*, Patrick A. Hessel and John F. Gamble, EpiLung Consulting, June 2008
- (15) *Prospective monitoring of exposure and lung function among cement workers, Interim report of the study after the data collection of Phase I-II 2006-2010*, Hilde Notø, Helge Kjuus, Marit Skogstad and Karl-Christian Nordby, National Institute of Occupational Health, Oslo, Norway, March 2010,

### 16.4 Training advice

In addition to health, safety and environmental training programs for their workers, companies must ensure that workers read, understand and apply the requirements of this SDS.

### 16.5 Further information

See Annex for the Exposure Scenario.

### 16.6 Disclaimer

The information on this data sheet reflects the currently available knowledge and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product, including the use of the product in combination with any other product or any other process, is the responsibility of the user. It is implicit that the user is responsible for determining appropriate safety measures and for applying the legislation covering his/her own activities.