

Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Code: **1704010017/1704010326**
Product name: **CEMENTO 32.5 R / CEMENTO 42.5 R**
UFI: **Y2H0-K0T5-C00A-C0NA**

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

Intended use: **Common cement, compliant with specific technical standards.**

Commercial Name	Standard Classification
CEMENTO 32.5 R	II/B-LL 32.5 R
CEMENTO 42.5 R	II/A-LL 42.5 R

Cement is used as a hydraulic binder for the manufacture of concrete, mortar, plaster and other products; Cement and mixtures containing cement are used in the industrial production of building materials and, in the construction sector, by professional users and end consumers.

Identified uses of cements and cement-containing mixtures (hydraulic binders) include dry products and wet suspension products (slurry).

Process categories (PROC) e Usage descriptors

PROC	Process categories - Identified uses	Producer / Formulation	Professional / Industrial Use
		of building materials	
2	Use in closed and continuous process, with occasional controlled exposure	X	X
3	Use in closed batch process (synthesis or formulation)	X	X
5	Mixing or blending in batch process for formulation of preparations (*) and articles (contact in various phases and/or significant contact)	X	X
7	Industrial spraying		X
8a	Transfer of substance or preparation (*) (filling/emptying) from/to vessels/large containers at non-dedicated facilities		X
8b	Transfer of substance or preparation (*) (filling/emptying) from/to vessels/large containers at dedicated facilities	X	X
9	Transfer of substance or preparation (*) into small containers (dedicated filling line, including weighing)	X	X
10	Roller application or brushing		X
11	Non-industrial spraying		X
13	Treatment of articles by dipping and pouring		X
14	Production of preparations (*) or articles by tableting, compression, extrusion, pelletization	X	X
19	Hand mixing with intimate contact, only using personal protective equipment (PPE)		X
22	Potentially closed processing operations with minerals/metals at high temperature Industrial setting		X
26	Handling of solid inorganic substances at room temperature	X	X

* In order to remain consistent with the descriptors system indicated in IUCLID 5.2, the term "preparation" was not replaced by the new definition of "mixture" in the table.

SECTION 1. Identification of the substance/mixture and of the company/undertaking**1.3. Details of the supplier of the safety data sheet**

Name	FORNACI CALCE GRIGOLIN S.P.A.
Full address	Via Foscarini, 2
District and Country	31040 Nervesa della Battaglia (TV) Italy
	tel. +39 0422 5261
	fax +39 0422 526299
e-mail address of the competent person responsible for the Safety Data Sheet	info@fornacigrigolin.it

1.4. Emergency telephone numberFor urgent inquiries refer to **HEALTH EMERGENCY - 112****SECTION 2. Hazards identification****2.1. Classification of the substance or mixture**

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Serious eye damage, category 1	H318	Causes serious eye damage.
Skin irritation, category 2	H315	Causes skin irritation.
Specific target organ toxicity - single exposure, category 3	H335	May cause respiratory irritation.
Skin sensitization, category 1	H317	May cause an allergic skin reaction.

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:

Signal words: **Danger**

Hazard statements:

H318	Causes serious eye damage.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.

Precautionary statements:

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P261	Avoid breathing dust.
P280	Wear protective gloves / face protection.
P302+P352	IF ON SKIN: Wash with plenty of sheets soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER / doctor / . . .
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Contains: PORTLAND CEMENT CLINKER

SECTION 2. Hazards identification**2.3. Other hazards**

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration \geq 0.1%.

Cement and mixtures containing cement, in the presence of water, for example in the production of concrete or mortar, or when they get wet, produce a highly alkaline solution (high pH due to the formation of calcium, sodium and potassium hydroxides).

Cement and mixtures containing cement can irritate the eyes, mucous membranes, throat and respiratory system and cause coughing.

Repeated inhalation of cement dust and cement-containing mixtures over a long period of time increases the risk of developing lung diseases.

Repeated and prolonged contact of cement on damp skin, due to perspiration or humidity, can cause irritation and/or dermatitis (Bibliography [4]).

In case of significant ingestion, cement can cause ulcerations of the digestive system.

Both cement and mixtures containing cement and their mixtures, in case of prolonged contact with the skin, can cause sensitization (due to the presence in traces of chromium VI salts); where necessary, this effect is depressed by the addition of a specific reducing agent to maintain the water-soluble chromium VI content at concentrations lower than 0.0002% (2 ppm) on the total dry weight of the same cement, in compliance with the legislation referred to in point 15.

Cement and mixtures containing cement do not meet the PBT or vPvB criteria pursuant to Annex XIII of REACH (Regulation 1907/2006/EC).

Concrete may contain breathable crystalline free silica.

SECTION 3. Composition/information on ingredients**3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
PORTLAND CEMENT CLINKER		
INDEX -	$65 \leq x < 90$	Eye Dam. 1 H318, Skin Irrit. 2 H315, STOT SE 3 H335, Skin Sens. 1B H317
EC	266-043-4	
CAS	65997-15-1	
REACH Reg.	02-2119682167-31-0000	

The full wording of hazard (H) phrases is given in section 16 of the sheet.

Note:

- Clinker: C&L notification n°02-2119682167-31-0000 (Update notification dated 01/07/2013 – Presentation of Report n. QJ420702-40).

Cements and cement-containing mixtures are finely ground mixtures consisting of clinker, gypsum (or other forms of calcium sulphate) and other specific constituents (limestone, pozzolana, etc.).

For some types of cements and mixtures containing cement, other components can be used as secondary constituents, grinding additives and any reducing agents, which have toxicological characteristics and risk levels equal to or lower than those of the clinker.

SECTION 4. First aid measures**4.1. Description of first aid measures**

EYES: Do not rub your eyes to avoid possible corneal damage caused by rubbing. If present, remove contact lenses. Tilt your head in the direction of the affected eye, open the eyelids well and rinse with plenty of water for at least 20 minutes to remove all residues. If possible, use isotonic water (0.9% NaCl). Where necessary, contact an occupational health specialist or an ophthalmologist.

SKIN: For dry concrete, remove and rinse thoroughly with water. For wet/damp concrete, wash skin with plenty of water and pH-neutral soap or an appropriate light detergent. Remove contaminated clothing, shoes, glasses and clean them completely before reusing them. Consult a doctor in all cases of irritation or burn.

INHALATION: take the person to fresh air. Dust in the throat and nostrils should clear spontaneously. Contact a doctor if irritation persists, or if it occurs later, or if you have discomfort, cough or other symptoms persist.

INGESTION: do not induce vomiting. If the person is conscious, wash out mouth with water and give plenty of water to drink. Seek immediate medical attention or contact a Poison Control Center.

SECTION 4. First aid measuresRescuer protection

Personal protective equipment is not necessary for rescuers, who must avoid inhaling cement dust and contact with damp cement or preparations containing damp cement. If this is not possible, they must adopt the personal protective equipment described in Section 8.

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

EYES: Eye contact with cement dust (dry or wet) can cause serious and potentially irreversible injuries.

SKIN: Cement and its preparations may have an irritating effect on moist skin (due to sweating or humidity) after prolonged contact or may cause contact dermatitis after repeated contact. For further details see Bibliography (1).

INHALATION: repeated inhalation of cement dust or mixtures containing cement for a long period of time increases the risk of developing lung diseases.

INGESTION: in case of accidental ingestion the cement can cause ulcerations of the digestive system.

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

See what is indicated in point 4.1. When contacting a doctor, bring the SDS with you.

Means to have available in the workplace for specific and immediate treatment

Information not available

SECTION 5. Firefighting measures**5.1. Extinguishing media****SUITABLE EXTINGUISHING EQUIPMENT**

Choose the most appropriate extinguishing equipment for the specific case.

UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

5.2. Special hazards arising from the substance or mixture**HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE**

The product is neither flammable nor combustible.

5.3. Advice for firefighters**SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS**

Normal firefighting clothing i.e., fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

FOR THOSE WHO DO NOT INTERVENTION DIRECTLY: wear protective equipment as described in Section 8 and follow the advice on safe use and handling in Section 7.

FOR THOSE WHO INTERVENE DIRECTLY: no specific emergency procedures are necessary.

In any case it is necessary to use personal protective equipment (PPE) to protect the eyes, skin and respiratory tract in situations with high levels of dust.

6.2. Environmental precautions

Avoid discharging or dispersing cement into drainage and sewer systems or into bodies of water (e.g., surface watercourses).

6.3. Methods and material for containment and cleaning up

DRY CONCRETE: use dry cleaning methods such as vacuum cleaners or vacuum extractors (portable industrial units, equipped with high efficiency particulate filters or equivalent techniques), which do not disperse dust into the environment. Never use compressed air. Ensure that workers wear appropriate personal protective equipment and prevent the spread of cement dust (see section 8). Avoid inhaling cement dust and contact with skin and eyes. Place spilled material in containers for future use.

SECTION 6. Accidental release measures

WET CEMENT: Remove the wet concrete and place it in a container. Allow the material to dry and solidify before disposing of it as described in Section 13.

6.4. Reference to other sections

For further details, see Sections 8 and 13.

SECTION 7. Handling and storage**7.1. Precautions for safe handling****7.1.1 Protective measures**

Follow the recommendations given in Section 8. To remove dry cement, see point 6.3.

Fire prevention measures

Not applicable

Measures to prevent the generation of aerosols and dust

Do not sweep or use compressed air. Use dry cleaning methods (such as vacuum cleaners and extractors) that do not cause air dispersion.

For further information, refer to the guidelines adopted under the Agreement on the Protection of Workers' Health through the Correct Management and Use of Crystalline Silica and Products Containing it, by the European sector associations of workers and employers. The safe handling practices can be downloaded at the following link: <https://guide.nepsi.eu>.

Environmental protection measures

When handling the material, avoid dispersing it into the environment.

7.1.2 Information on hygiene in the workplace of a general nature

Do not handle or store near food and beverages or smoking materials. In dusty environments, wear dust masks and protective glasses. Use protective gloves to avoid contact with skin.

7.2. Conditions for safe storage, including any incompatibilities

Cement must be stored in impervious, dry (e.g., with minimal internal condensation), clean and protected from contamination conditions.

Risk of burial: Cement can thicken or stick to the walls of the confined space in which it is stored. Concrete can cave in, collapse or fall unexpectedly.

To prevent burial or suffocation, do not enter confined spaces, such as silos, containers, bulk transport trucks, or other storage containers or containers that store or contain cement without taking appropriate safety measures.

Do not use aluminium containers for the storage or transport of wet cement-containing mixtures due to the incompatibility of the materials.

Control of soluble chromium VI

The integrity of the packaging and compliance with the above-mentioned storage methods are essential conditions to guarantee the maintenance of the effectiveness of the reducing agent for the period of time reported on the DDT (both for bagged and loose products) and also on each individual sack.

This time limit concerns exclusively the effectiveness of the reducing agent in maintaining the level of water-soluble chromium VI, determined according to the EN 196-10 standard, below the limit of 0.0002% of the total dry weight of the cement ready for use, imposed by current legislation (see page 15), without prejudice to the limits of use of the mixture dictated by the general rules of conservation and use of the product itself.

7.3. Specific end use(s)

No further information (see Section 1.2).

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory references:

TLV-ACGIH

ACGIH 2023

CEMENTO 32.5 R / CEMENTO 42.5 R
PORTLAND CEMENT CLINKER

Threshold Limit Value					
Type	Country	TWA/8h		STEL/15min	Remarks / Observations
		mg/m3	ppm	mg/m3	ppm
TLV-ACGIH		1			RESP

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

In relation to the possible presence of free crystalline silica in the respirable fraction, for the professional user to respect the professional exposure limits to respirable crystalline silica in 8 working hours (OEL (EU) = 0.1 mg/m³ (respirable fraction, 8h) VLEP (IT) = 0.1 mg/m³ (respirable fraction, 8h) - Annex XLIII Legislative Decree 81/2008).

The American Conference of Governmental Industrial Hygienists (ACGIH) recommends a threshold value of 0.025 mg/m³.

8.2. Exposure controls

For each individual Process Category (PROC), the user can choose between options A) and B) shown in Table 8.2.1 below, based on what is most suitable for his specific situation. If an option is chosen, it must be selected in Table 8.2.2 of Section 8.2.2 "Individual protection measures, such as personal protective equipment – Specifications for respiratory protective equipment". Therefore, only combinations between A) – A) and B) – B) are possible.

Table 8.2.1

Exposure scenario	PROC*	Exposure	Localized controls	Efficiency
Industrial production / Formulation of hydraulic building and construction materials	2, 3	Duration is not restricted (up to 480 minutes per shift, 5 shifts a week) (#) < 240 min	Not required	-
	14, 26		A) not required, or B) generic local exhaust ventilation	-
	5, 8b, 9		generic local exhaust ventilation	78%
Industrial uses of dry hydraulic building and construction materials (indoor and outdoor)	2		Not required	-
	14, 22, 26		A) not required, or B) generic local exhaust ventilation	-
	5, 8b, 9		generic local exhaust ventilation	78%
Industrial uses of wet suspensions of hydraulic building and construction materials	7		A) not required, or B) generic local exhaust ventilation	-
	2, 5, 8b, 9, 10, 13, 14		Not required	-
Professional uses of hydraulic building and construction materials (indoor and outdoor)	2		A) not required, or B) generic local exhaust ventilation	-
	9, 26		A) not required, or B) generic local exhaust ventilation	72%
	5, 8a, 8b, 14		generic local exhaust ventilation	72%
	19 (#)		Localized controls are not applicable. The processes may be carried out only in well-ventilated areas or outdoors	-
Professional uses of wet suspensions of hydraulic building and construction materials	11	A) not required, or B) generic local exhaust ventilation	-	
	2, 5, 8a, 8b, 9, 10, 13, 14, 19	Not required	72%	
				-

*PROCs are the identified uses, as defined under Subsection 1.2.

8.2.1 Suitable technical controls

In plants where cement is handled, transported, loaded and unloaded and stored, measures must be taken for the protection of workers and for the containment of dust emissions in the working environments as indicated in the table (DNEL = 1 mg/ m³). The localized controls will be defined in relation to the existing situations and consequently the corresponding specific respiratory protection equipment will be identified, indicated in the table in point 8.2.2.

SECTION 8. Exposure controls/personal protection
8.2.2 Individual protection measures, such as personal protective equipment

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for particulate not otherwise classified (PNOC respirable fraction: 3 mg/m³; PNOC inhalable fraction: 10 mg/m³). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment. The above values are not TLVs, but guide values, to be used for particles that do not have their own TLV and that are insoluble or poorly soluble in water and have low toxicity.

In plants where cement is handled, transported, loaded and unloaded and stored, suitable measures must be adopted for the protection of workers and for the containment of releases into the workplace. Do not eat, drink or smoke while working with the mixture to avoid contact with your skin or mouth. Immediately after handling/manipulating cement or products/preparations containing it, it is necessary to wash with neutral soap or a suitable light detergent or use moisturizing creams.

Dispose of contaminated clothing, footwear, glasses, etc. and clean them completely before reusing them.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Use gloves with mechanical resistance to abrasion according to EN ISO 388 with nitrile coating or alternatively neoprene, preferably ¾ or totally in case of more demanding activities. In the event of possible contact with a humid substance, use a glove with specific chemical protection according to EN ISO 374 with specific thickness and degree of permeation (in particular to alkalis) based on the type of use (immersion or possible accidental contact). Always change damaged or soaked gloves immediately.

SKIN PROTECTION

In some circumstances, such as when laying concrete or screed, waterproof trousers or knee pads are required.

EYE PROTECTION

Wear approved goggles or safety masks in accordance with EN 166 when handling dry or wet concrete to prevent contact with eyes.

RESPIRATORY PROTECTION

When a person is potentially exposed to dust levels above the exposure limits, use appropriate respiratory protection commensurate with the dust level and compliant with the relevant EN standards (e.g., filtering facepiece certified according to EN 149).

Personal protective equipment, defined according to localized controls and evaluated for a DNEL value = 1 mg/m³, is shown in the Table.

Table 8.2.2

Exposure scenario	PROC*	Exposure	Specific respiratory protection equipment (RPE)	RPE efficiency – Assigned Protection Factor (APF)
Industrial production / Formulation of hydraulic building and construction materials	2, 3	Duration is not restricted (up to 480 minutes per shift, 5 shifts a week) (#) < 240 min	Not required	-
	14, 26		A) Mask P2 (FF) or B) Mask P1 (FF)	APF = 10 APF = 4
	5, 8b, 9		Mask P2 (FF)	APF = 10
Industrial uses of dry hydraulic building and construction materials (indoor and outdoor)	2		Not required	-
	14, 22, 26		A) Mask P2 (FF) or B) Mask P1 (FF)	APF = 10 APF = 4
	5, 8b, 9		Mask P2 (FF)	APF = 10
Industrial uses of wet suspensions of hydraulic building and construction materials	7		A) Mask P3 (FF) or B) Mask P2 (FF)	APF = 20 APF = 10
	2, 5, 8b, 9, 10, 13, 14		Not required	-
Professional uses of hydraulic building and construction materials (indoor and outdoor)	2		A) Mask P2 (FF) or B) Mask P1 (FF)	APF = 10 APF = 4
	9, 26		A) Mask P3 (FF) or B) Mask P2 (FF)	APF = 20 APF = 10
	5, 8a, 8b, 14	Mask P3 (FF)	APF = 20	
	19 (#)	Mask P3 (FF)	APF = 20	
Professional uses of wet suspensions of hydraulic building and construction materials	11	A) Mask P3 (FF) or B) Mask P2 (FF)	APF = 20 APF = 10	
	2, 5, 8a, 8b, 9, 10, 13, 14, 19	Not required	-	

*PROCs are the identified uses, as defined under Subsection 1.2.

SECTION 8. Exposure controls/personal protection

An example of the assigned protection factors (APF) for different respiratory protective equipment (RPE), according to EN 529:2005, can be found in the glossary of MEASE approach

8.2.3 Environmental exposure controls

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

See the technical control measures to avoid the dispersion of cement dust into the environment.

Take measures to ensure that the concrete does not reach water (sewer systems or ground or surface water).

In plants where cement is handled, transported, loaded and unloaded and stored, suitable measures must be adopted to contain the introduction of dust into the work environments. In particular, preventive measures must ensure the containment of the concentration of respirable particulate matter within the time-weighted threshold limit value (TLV-TWA) adopted by the Association of American Industrial Hygienists (ACGIH) for Portland cement. The control of environmental exposure for the emission of cement particles into the air must be carried out according to the available technology and the regulations regarding the emissions of dust particles in general.

Controlling environmental exposure is relevant to the aquatic environment as cement emissions at different stages of the life cycle (production and use) applied mainly to soil and wastewater. The aquatic effect and risk assessment covers the effect on organisms/ecosystems due to possible changes in pH related to the release of hydroxides. It is believed that the toxicity of other dissolved inorganic ions may be negligible compared to the potential effect of pH.

Any other effects that may occur during production and use are assumed to occur on a local scale. The pH of wastewater and surface water should not exceed 9. Otherwise, it could have an impact on municipal wastewater treatment plants (STPs) and industrial wastewater treatment plants (WWTPs). For such exposure assessment, a stepwise approach is recommended.

Level 1: Retrieve information on the pH of the waste and the contribution of the cement to the resulting pH. Should the pH be above 9 and predominantly attributable to the cement, then further action would be required to demonstrate safe use.

Level 2: Retrieve information on the pH of the water collected after the discharge point. The pH value must not exceed 9.

Level 3: Measure the pH in the water collected after the discharge point. If the pH is less than 9, safe use is reasonably demonstrated. If the pH is higher than 9, risk management measures must be implemented: the discharge must be subjected to neutralization, in order to make the use of the cement safe during the production or use phase.

No special emission control measures are required for exposure to the terrestrial environment.

For further details, see Section 6.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	powder	
Colour	grey	
Odour	odourless	
Melting point / freezing point	> 1250 °C	
Initial boiling point	not applicable	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Flash point	not applicable	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	12	Temperature: 20 °C
Kinematic viscosity	not available	
Solubility	slightly soluble	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	2,75-3,20 g/cm ³	
Relative vapour density	not available	
Particle characteristics	not available	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

SECTION 9. Physical and chemical properties

9.2.2. Other safety characteristics

Granulometry < 0.1 mm

SECTION 10. Stability and reactivity**10.1. Reactivity**

PORTLAND CEMENT CLINKER

When mixed with water, it hardens to form a stable mass.

10.2. Chemical stability

Concrete as it is is stable for longer the more it is stored appropriately (see Section 7). It must be kept dry. Contact with incompatible materials must be avoided.

Wet cement is alkaline and incompatible with acids, ammonium salts, aluminium and other non-noble metals. Cement in contact with hydrofluoric acid decomposes producing corrosive silicon tetrafluoride gas. Cement reacts with water and forms silicates and calcium hydroxide. The silicates in cement react with powerful oxidants such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride and oxygen bifluoride.

The integrity of the package and compliance with the storage methods mentioned in point 7.2 (special closed containers, cool and dry place and absence of ventilation) are essential conditions for maintaining the effectiveness of the reducing agent in the storage period specified on the bag or on the DDT.

PORTLAND CEMENT CLINKER

The compound is stable in the conditions of use and storage, if kept dry.

When wet, it can react with acids, ammonium salts, aluminium and other non-noble metals.

10.3. Possibility of hazardous reactions

Cement does not cause dangerous reactions.

10.4. Conditions to avoid

PORTLAND CEMENT CLINKER

Moisture can cause lumps and quality loss.

10.5. Incompatible materials

The uncontrolled use of aluminium powder in wet concrete must be avoided as hydrogen is developed.

PORTLAND CEMENT CLINKER

Incompatible with acids, ammonium salts, aluminium, alkaline metals and alkaline earth metals.

10.6. Hazardous decomposition products

Cement does not decompose into any hazardous products.

PORTLAND CEMENT CLINKER

Develops hydrogen in contact with aluminium powder.

SECTION 11. Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**Metabolism, toxicokinetic, mechanism of action and other information

Except for skin sensitization, Portland cement clinker and cements have the same toxicological and eco-toxicological properties.

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Clinical conditions aggravated by exposure

SECTION 11. Toxicological information

Inhaling cement can aggravate existing respiratory system diseases and/or clinical conditions such as emphysema or asthma and/or existing skin and eye conditions.

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

Acute toxicity - dermal

Rabbit limit test, 24-hour contact, 2,000 mg/kg body weight – non-lethal. Based on available data, does not fall within the classification criteria (Bibliography (2))

Acute toxicity - inhalation

No acute inhalation toxicity observed. Based on available data, does not fall within the classification criteria (Bibliography (9))

Acute toxicity - oral

No indications of oral toxicity from studies with cement kiln dust. Based on available data, does not fall within the classification criteria (From bibliographic review)

SKIN CORROSION / IRRITATION

Causes skin irritation

Category 2. Cement in contact with moist skin can cause thickening, cracking and splitting of the skin. Prolonged contact in combination with existing abrasions can cause severe burns. Some individuals may develop eczema following exposure to moist cement dust, caused by the high pH which can induce irritant contact dermatitis after prolonged contact. (Bibliography (2) Human experiences)

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

Category 1. The clinker caused a set of heterogeneous effects on the cornea and the calculated irritation index was equal to 128.

Direct contact with the cement can cause corneal lesions due to mechanical stress, immediate or delayed irritation or inflammation. Direct contact with large quantities of dry concrete or splashes of wet concrete can cause effects ranging from moderate eye irritation (e.g., conjunctivitis or blepharitis) to chemical burns and blindness. (Bibliography (10), (11))

RESPIRATORY OR SKIN SENSITISATION

Sensitising for the skin

Respiratory sensitization

There are no indications of sensitization of the respiratory system. Based on available data, it does not meet the classification criteria. (Bibliography (1))

Skin sensitization

Category 1B. Some individuals may develop eczema following exposure to wet concrete dust, caused by an immunological reaction to soluble Cr(VI) causing allergic contact dermatitis. The response can appear in a variety of forms that can range from a mild rash to severe dermatitis. No sensitization effect is expected if the cement contains a water-soluble Cr(VI) reducing agent until the indicated period of effectiveness of such reducing agent is exceeded [reference (3)]. (Bibliography (3), (4), (17))

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

No indication.

Based on available data, it does not meet the classification criteria. (Bibliography (12), (13))

SECTION 11. Toxicological informationCARCINOGENICITY

Does not meet the classification criteria for this hazard class

No causal association has been established between exposure to Portland cement and cancer.

The epidemiological literature does not support the identification of Portland cement as a suspected human carcinogen.

Portland cement is not classifiable as a human carcinogen (according to ACGIH A4: Agents that cause concern about being carcinogenic to humans but cannot be definitively assessed due to lack of data. In vitro studies or on animals do not provide indications of carcinogenicity that are sufficient to classify the agent with one of the other notations). Based on available data, it does not meet the classification criteria. (Bibliography (1), (14))

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Based on available data, it does not meet the classification criteria. No evidence from human experience

STOT - SINGLE EXPOSURE

May cause respiratory irritation

Category 3. Cement dust can irritate the throat and respiratory system. Coughing, sneezing and shortness of breath may occur following exposures above the occupational exposure limits.

Overall, the evidence collected clearly indicates that occupational exposure to cement dust has produced deficits in respiratory function. However, the available evidence is currently insufficient to establish with certainty the dose-response relationship for these effects. (Bibliography (1)).

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Long-term exposure to respirable cement dust above the occupational exposure limit can lead to coughing, shortness of breath and chronic obstructive changes in the respiratory tract. No chronic effects were observed at low concentrations. Based on available data, the classification criteria are not met. (Bibliography (15))

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

Not applicable as cement is not used as an aerosol.

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. Toxicity

Cement is not dangerous for the environment. Ecotoxicity tests with Portland cement on *Daphnia magna* [Bibliography (5)] and *Selenastrum coli* [Bibliography (6)] demonstrated a small toxicological impact. Therefore, the LC50 and EC50 values cannot be determined [Bibliography (7)]. There are no indications of toxicity in the sedimentary phase [Bibliography (8)]. Adding large quantities of cement to water can, however, cause an increase in pH and can, therefore, be toxic to aquatic life in certain circumstances.

12.2. Persistence and degradability

Not relevant, since cement is an inorganic material. After hardening, the cement does not present any toxicity risks.

12.3. Bioaccumulative potential

Not relevant, since cement is an inorganic material. After hardening, the cement does not present any toxicity risks.

SECTION 12. Ecological information**12.4. Mobility in soil**

Not relevant, since cement is an inorganic material. After hardening, the cement does not present any toxicity risks.

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.

Not relevant, since cement is an inorganic material. After hardening, the cement does not present any toxicity risks.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations

Cement and any packaging intended for disposal must be managed according to the provisions of Part IV "Regulations on waste management" of Legislative Decree 152/2006 "Regulations on environmental matters" and subsequent amendments. and related implementing decrees.

13.1. Waste treatment methods

Do not dispose of into sewer systems or surface water.

Product - Cement that has exceeded its expiry date

When it is demonstrated that it contains more than 0.0002% soluble chromium VI: it must not be used/sold except for use in closed, controlled and fully automated processes or it must be recycled or managed in accordance with Legislative Decree 152/2006 and subsequent amendments or treated again with a reducing agent.

Product – unused residue or dry spill

Collect unused dry waste or dried spills as is. Possibly reuse based on shelf-life considerations and the requirement to avoid exposure to dust. In case of disposal, manage in accordance with Legislative Decree 152/2006 and subsequent amendments.

Product – sludge

Allow to harden, avoid entry into sewerage and drainage systems or bodies of water (e.g., watercourses) and dispose of as explained below under "Product - after addition of water, hardened".

Product - after adding water, hardened

Dispose of according to Legislative Decree 152/2006 and subsequent amendments. Prevent entry into sewage system.

Packaging

Empty the packaging and handle it in accordance with current regulations. The assignment of the EER code must be carried out in accordance with the Guidelines adopted pursuant to art. 184, co.4 of Legislative Decree 152/2006 and subsequent amendments.

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

Cement is not regulated by international regulations for the transport of dangerous goods: IMDG (by sea), ADR (by road), RID (by rail), IATA (by air), and therefore no classification is required.

No special precautions are necessary other than those mentioned in Section 8. During transport, avoid wind dispersion by using closed containers.

14.1. UN number or ID number

not applicable

14.2. UN proper shipping name

not applicable

SECTION 14. Transport information**14.3. Transport hazard class(es)**

not applicable

14.4. Packing group

not applicable

14.5. Environmental hazards

not applicable

14.6. Special precautions for user

not applicable

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

SECTION 15. Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Seveso Category - Directive 2012/18/EU: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006Contained substance

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Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

not applicable

Substances in Candidate List (Art. 59 REACH)On the basis of available data, the product does not contain any SVHC in percentage \geq than 0,1%.Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

- Regulation (EC) 1907/2006 concerning the registration, evaluation, authorization and restriction of the use of chemical substances (REACH) and subsequent amendments.
- Regulation (EC) 1272/2008 relating to the 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) and s.m.i.
- Legislative Decree 9/04/2008 n. 81 and subsequent amendments. "Implementation of article 1 of law 3 August 2007, n. 123, regarding the protection of health and safety in the workplace".
- EN 196/10 - "Test methods for cement – Part 10: Determination of the water-soluble chromium VI content of cement"
- EN 197/1 – "Cement – Composition, specifications and conformity criteria for common cements"
- EN 15368 Hydraulic binder for non-structural applications - Definition, specifications and compliance criteria
- EN 413-1 Masonry cement - Part 1: Composition, specifications and conformity criteria

SECTION 15. Regulatory information

- EN 14216 Cement - Composition, specifications and conformity criteria for special heat-of-hydration cements
- Legislative Decree 152/2006 "Regulations on environmental matters" and subsequent amendments.
- Regulation 2020/1677/EU amending Regulation (EC) no. 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures with a view to improving the practicability of information requirements for emergency health responses
- Legislative Decree 1 June 2020, n. 44 "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 against the risks arising from exposure to agents carcinogenic or mutagenic at work.
- Decree no. 47 of 9 August 2021 approving the "Guidelines on waste classification" pursuant to the resolution of the Council of the National System for Environmental Protection of 18 May 2021, n.105, as required by art. 184, paragraph 5 of Legislative Decree no. 152 of 2006, as amended by Legislative Decree no. 116 of 2020.

Regulation (EC) no. 1907/2006 (REACH), in Annex XVII, point 47, as amended by Regulation no. 552/2009, imposes a ban on the marketing and use of cement and its preparations if they contain, once mixed with water, more than 0.0002% (2 ppm) of water-soluble chromium VI on the total dry weight of the cement itself. Compliance with this limit threshold is ensured through the addition of a reducing agent to the cement, the effectiveness of which is guaranteed for a predefined period of time and with the constant observance of adequate storage methods (reported in points 7.2 and 10.2).

Pursuant to the aforementioned Regulation, the use of the reducing agent involves the publication of the following information:

PACKAGING DATE: Reported on the bag or on the transport document

STORAGE CONDITIONS (*): In special closed containers in a cool, dry place and without ventilation, with a guarantee of maintaining the integrity of the package

STORAGE PERIOD (*): According to what is reported on the DDT (both for bagged and loose product) and on each individual bag
(*) to maintain the effectiveness of the reducing agent

This time limit concerns exclusively the effectiveness of the reducing agent towards chromium VI salts, without prejudice to the limits of use of the product dictated by the general rules of conservation and use of the product itself.

Since cement is a mixture, as such it is not subject to the registration obligation required by REACH which instead concerns substances. Cement clinker is a substance exempted from registration, based on art. 2.7 (b) and Annex V.10 of REACH, but subject to notification (Notification n° 02-2119682167-31-0000 - Notification update dated 7/1/2013 – Report submission n. QJ420702-40).

15.2. Chemical safety assessment

A chemical safety assessment has not been performed for the preparation/for the substances indicated in section 3.

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Eye Dam. 1	Serious eye damage, category 1
Skin Irrit. 2	Skin irritation, category 2
STOT SE 3	Specific target organ toxicity - single exposure, category 3
Skin Sens. 1	Skin sensitization, category 1
Skin Sens. 1B	Skin sensitization, category 1B
H318	Causes serious eye damage.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H317	May cause an allergic skin reaction.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- Ems: Emergency Schedule
- GHS: Globally Harmonized System of classification and labelling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%

SECTION 16. Other information

- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very persistent and very bioaccumulative
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

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 - Handling Chemical Safety
 - INRS - Fiche Toxicologique (toxicological sheet)
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 - IFA GESTIS website
 - ECHA website
 - Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

SECTION 16. Other information

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.

Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.

Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.

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<http://www.hse.gov.uk/pubns/web/portlandcement.pdf>.

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(13) Cytotoxicity and genotoxicity of cement dusts in A549 human epithelial lung cells in vitro; Gminski et al, Abstract DGPT conference Mainz, 2008.

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