HERACLES GROUP OF COMPANIES

HEALTH AND SAFETY DATA SHEET

According to regulation REACH EC 1907/2006

Version 6.00 / EN **Revision date: 13/02/2026**

Replaces all previous versions

CEM I 52.5R (WHITE CEMENT), CEM II/B-M (P-L) 32.5 N
CEM I 52.5N, CEM I 42.5R, CEM I 42.5N SR5
CEM II/A-L 52.5N, CEM II/A-L 42.5R, CEM II/B-M (P-L) 42.5 N
CEM II/B-M (P-W-L) 42.5N, CEM II/B-M (P-W-L) 42.5R
CEM II/B-M (P-W-L) 32.5N, CEM III/B 42.5N SR
CEM IV/B (P) 32,5N SR, MC 12.5
CEM II/C-M(P-L) 32.5 N

SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1. Product identifier

Product type:

Product name:

Cement Type according to EN 197-1	Unique Formula Identifier (UFI)
CEM I 52.5R (HERACLES ΕΝΙΣΧΥΜΕΝΟ WHITE)	G300-R0XT-600K-GFRA
CEM I 52.5N	E600-80N6-H002-5TAD
CEM I 42.5R	E800-S0AK-T00K-T4WF
CEM I 42.5N SR5	3C00-9010-4002-GGGH
CEM II/B-M (P-W-L) 32.5N ECOPlanet (HERACLES ΕΝΙΣΧΥΜΕΝΟ)	TM00-T036-100J-FH7Q
CEM III/B 42.5N SR ECOPlanet	KQ00-90SK-C001-4UTS
CEM II/A-L 42.5R	HV00-A05C-Y001-FHYW
CEM II/A-L 52.5N	G910-U0MC-G00H-R7W7
CEM II/B-M (P-W-L) 42.5N (BASIS ΕΝΙΣΧΥΜΕΝΟ)	A110-A0J5-K001-S751
CEM II/B-M (P-W-L) 42.5R	8000-808D-W003-U458
CEM IV/B (P) 32.5N SR ECOPlanet	N410-U07J-V00H-EJR3
CEM II/B-M (P-L) 32.5 N	TQK0-SDGA-CV12-RT82
CEM II/B-M (P-L) 42.5 N	ATK0-9D5Q-NV1K-E4U4
Cement Type according to EN 197-5	**Unique Formula Identifier (UFI)**
CEM II/C-M (P-L) 32.5 N	DNK0-8DSX-1V1K-3FP0
Cement Type according to EN 413-1	**Unique Formula Identifier (UFI)**
MC 12.5 ECOPlanet (LYSIS)	4S00-T0FY-N00J-S6DU

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

Identified uses:

Cements are used in industrial installations to manufacture/formulate hydraulic binders for building and construction work, such as ready-mixed concrete, mortars, renders, grouts, plasters as well as precast concrete.
Common cements and cement containing mixtures (hydraulic binders) are used industrially, by professionals as well as by consumers in building and construction work, indoor and outdoor. The identified uses of cements and cement containing mixtures cover the dry products and the products in a wet suspension (paste). See section 16.2 for more information regarding use descriptors and categories.

Identified uses advised against: Any uses not mentioned above, are advised against.

1.3. Details of the supplier of the safety data sheet

Company name: HERACLES GENERAL CEMENT COMPANY (LafargeHolcim Group)
Address: 32 D. Solomou Str, 14123 Likovrissi
Phone number: +30 210 2898111
Fax number: +30 210 2898111
E-mail of the responsible for the SDS: info.heracles@lafargehiolcim.com

1.4. Emergency telephone number

Emergency telephone number: 800 11 42 222
Operation: 09:00 - 17:00
Poison center phone number: 210 77 93 777
Operation: 24-hour

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the mixture

According to Regulation (EC) No 1272/2008

Hazard class	Hazard category	Classification procedure
Skin irritation	2	On the basis of test data
Serious eye damage/eye irritation	1	On the basis of test data
Skin sensitization	1B	On the basis of literature survey
Specific target organ toxicity single exposure respiratory tract irritation	3	On the basis of literature survey

2.2. Label elements

According to Regulation (EC) No 1272/2008

Danger

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

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: Get medical advice/attention
P261+P304+P340+P312: Avoid breathing dust/fume/gas/mist/vapours/spray. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
P501 Dispose of contents/container in accordance with local regulations

Supplemental information

Skin contact with wet cement, fresh concrete or mortar may cause irritation, dermatitis or burns.
May cause damage to products made of aluminum or other non-noble metals.

2.3. Other hazards

Cement does not meet the criteria for PBT or vPvB in accordance with Annex

XIII of REACH (Regulation (EC) No 1907/2006).
Cement dust may cause irritation of the respiratory system.
When cement reacts with water, for instance when making concrete or mortar, or when the cement becomes damp, a strong alkaline solution is produced. Due to the high alkalinity, wet cement may provoke skin and eye irritation.
It may also cause an allergic reaction in some individuals due to the soluble Cr(VI) content. Cement is either naturally low in soluble chromium VI or reducing agents have been added to control the levels of sensitizing soluble chromium (VI) to below 2mg/kg (0.0002%) of the total dry weight of the cement ready for use according to legislation specified under Section 15.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

3.2. Mixtures

Cement composition according to EN 197-1*							
Cement type	**Designation**	**Clinker (% w/w)**	**Blast Furnace Slag (% w/w)**	**Pozzolana (% w/w)**	**Calcareous fly ash (% w/w)**	**Limestone (% w/w)**	**Minor constituents (% w/w)**
CEM I	Portland	95 - 100	-	-	-	-	0 - 5
CEM II/A - L	Portland - Limestone	80 - 94	-	-	-	6-20	0 - 5
CEM II/B-M	Portland Composite	65 - 79	21 - 35				0 - 5
CEM III/B	Blast Furnace Slag Sulfate Resistant	20 - 34	66 - 80	-	-	-	0 - 5
CEM IV/B (P)	Pozzolanic	45-64	-	36-55		-	0 - 5

Cement composition according to EN 197-5*							
Cement type	**Designation**	**Clinker (% w/w)**	**Blast Furnace Slag (% w/w)**	**Pozzolana (% w/w)**	**Calcareous fly ash (% w/w)**	**Limestone (% w/w)**	**Minor constituents (% w/w)**
CEM II/C-M	Portland Composite	50-64	36-50				0 - 5

Cement composition according to EN 413-1*			
Cement type	**Designation**	**Clinker (% w/w)**	**Additives (% w/w)**
MC	Masonry	≥40	≤ 1[a]
[a]The amount of organic additives on a dry basis must not exceed 0.5% by mass of the masonry cement.			

* The proportions of the ingredients given in the table are expressed as percent by weight on a gypsum free basis

Substance	**Composition (% w/w)**	**Registration number**	**EINECS**	**CAS**	**Classification (EC) 1272/2008**	
					Hazard class, category	**H-phrase**
Clinker	40 - 100 (depending on the cement type)	Cement clinker is not subject to registration (REACH, section V, §7)	266-043-4	65997-15-1	Skin irritation, 2 Skin sensitization, 1B Serious eye damage/eye irritation, 1 Specific target organ toxicity single exposure respiratory tract irritation, 3	H315 H317 H318 H335
Fly ash	0 - 15 (depending on the cement type)	01-2119491179-27-0086	931-322-8	-	-	-

Ferrous sulphate	< 1.5	01-2119513203-57-0018	231-735-5	7720-78-7	Acute toxicity - oral, 4 Skin irritation, 2, eye irritation, 2	H302 H315 H319

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General notes

No personal protective equipment is needed for first aid responders. First aid workers should avoid contact with wet cement or wet cement containing mixtures.

Following contact with eyes

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.

Following skin contact

For dry cement, remove and rinse abundantly with water.

For wet cement, wash skin with plenty of water.

Remove contaminated clothing, footwear, watches, etc. and clean thoroughly before re-using them.

Seek medical treatment in all cases of irritation or burns.

Following 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.

Following 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 cement (dry or wet) may cause serious and potentially irreversible injuries.

Skin: Cement 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 cement or wet concrete may cause serious burns because they develop without pain being felt (for example when kneeling in wet concrete even when wearing trousers).

For more details see Reference (1).

Inhalation: Repeated inhalation of dust of Common cements over a long period of time increases the risk of developing lung diseases.

Environment: Under normal use, Common cement is not hazardous to the environment.

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

When contacting a physician, take this SDS with you.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Common cements are not flammable.

5.2. Special hazards arising from the mixture

Cements are non-combustible and non-explosive and will not facilitate or sustain the combustion of other materials.

5.3. Advice for fire fighters

Cement poses no fire-related hazards. No need for special protective equipment for fire-fighters.

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 responders

Emergency procedures are not required. However, respiratory protection is needed in situations with high dust levels.

6.2. Environmental precautions

Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

6.3. Methods and materials for containment and cleaning up

Collect the spillage in a dry state if possible.

Dry cement

Use cleanup methods such as vacuum clean-up or vacuum extraction (industrial portable units, equipped with high efficiency air filters (EPA and HEPA filters, EN 1822-1:2009) or equivalent technique) which do not cause airborne dispersion. Never use compressed air. Alternatively, wipe up the dust by mopping, wet brushing or by using water sprays or hoses (fine mist to avoid that the dust becomes airborne) and remove slurry.

If not possible, remove by slurring with water (see wet cement).

When wet cleaning or vacuum cleaning is not possible and only dry cleaning with brushes can be done, ensure that the workers wear the appropriate personal protective equipment and prevent dust from spreading.

Avoid inhalation of cement and contact with skin. Place spilled materials into a container. Solidify before disposal as described under Section 13.

Wet cement

Clean up wet cement and place in a container. Allow material to dry and solidify before disposal as described under Section 13.

6.4. References to other sections

See sections 8 and 13 for more details.

SECTION 7: HANDLING AND STORAGE

Do not handle or store near food and beverages or smoking materials.

7.1. Precautions for safe handling

The so-called “Good practice guides” contain advice on safe handling practices and can be found in http://www.nepsi.eu/good-practice-guide.aspx. These good practices have been adopted under the Social Dialogue Agreement on Workers' Health Protection through the Good Handling and Use of Crystalline Silica and Products Containing it, by Employee and Employer European sectoral associations, among which CEMBUREAU.

7.1.1. Protective measures

Follow the recommendations as given under Section 8.

To clean up dry cement, see Subsection 6.3.

Measures to prevent fire

Not applicable.

Measures to prevent aerosol and dust generation

Do not sweep. Use dry cleanup methods such as vacuum clean-up or vacuum extraction, which do not cause airborne dispersion.

For more information, refer to the practice guidelines adopted under the Social Dialogue Agreement on Workers' Health Protection through the Good Handling and Use of Crystalline Silica and Products Containing it, by Employee and Employer European sectoral associations, among which CEMBUREAU. These safe handling practices It can be found via the following link: http://www.nepsi.eu/agreement-good-practice-guide/good-practice-guide.aspx.

Measures to protect the environment

No particular measures.

7.1.2. Information on general occupational hygiene

Do not handle or store near food and beverages or smoking materials.

In dusty environment, wear dust mask and protective goggles.

Use protective gloves to avoid skin contact.

7.2. Conditions for safe storage, including any incompatibilities

Bulk cement should be stored in silos that are waterproof, dry (i.e. with internal condensation minimised), clean and protected from contamination.

Engulfment hazard: To prevent engulfment or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains cement without taking the proper security measures. Cement can build up or adhere to the walls of a confined space. The cement can release, collapse or fall unexpectedly.

Packed products should be stored in unopened bags clear of the ground in cool, dry conditions and protected from excessive draught in order to avoid degradation of quality.

Bags should be stacked in a stable manner.
Do not use aluminum containers for the storage or transport of wet cement containing mixtures due to incompatibility of the materials.

7.3. Specific end use(s)

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

7.4. Control of water-soluble Cr (VI)

For cements treated with a Cr (VI) reducing agent according to the regulations given in Section 15, the effectiveness of the reducing agent diminishes with time. Therefore, cement bags and/or delivery documents will contain information on the packaging date, the storage conditions and the storage period appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium VI below 0.0002% of the total dry weight of the cement ready for use, according to EN 196-10. They will also indicate the appropriate storage conditions for maintaining the effectiveness of the reducing agent.

SECTION 8: EXPOSURE CONTROL/ PERSONAL PROTECTION

8.1. Control parameters

Name / Limit value for	Limit value type	Value (as 8h TWA)	Unit	Reference
Cement/ Cement dust	OEL inhalable	10	mg/m^3	PD 77/93
	OEL alveolar fraction	5	mg/m^3	

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Use	PROC*	Exposure	Local controls	Efficiency
Industrial manufacture/formulation of hydraulic building and construction materials	2, 3	Duration is not restricted (up to 480 minutes per shift, 5 shifts a week)	not required	-
	14, 26		A) not required or B) generic local exhaust ventilation	- 78%
	5, 8b, 9		A) not required or B) generic local exhaust ventilation	- 82%
Industrial uses of dry hydraulic building and construction materials (indoor, outdoor)	2		not required	-
	14, 22, 26		A) not required or B) generic local exhaust ventilation	- 78%
	5, 8b, 9		A) not required or B) generic local exhaust ventilation	- 82%
Industrial uses of wet suspension of hydraulic building and construction materials	7		A) not required or B) generic local exhaust ventilation	- 78%
	2, 5, 8b, 9, 10, 13, 14		not required	-
Professional use of dry hydraulic building and construction material (indoor, outdoor)	2		A) not required or B) general ventilation	- 29%
	9, 26		A) not required or B) generic local exhaust ventilation	- 77%
	5, 8a, 8b, 14		A) not required or B) generic local exhaust ventilation	- 72%
	19		Localized controls are not applicable, process only in good ventilated rooms or outdoor	-
Professional uses of wet suspensions of hydraulic building and construction materials	11		A) not required or B) generic local exhaust ventilation	- 77%
	2, 5, 8a, 8b, 9, 10, 13, 14, 19		not required	-

8.2.2. Individual protection measured such as personal protection equipment

General:

During work avoid kneeling in fresh mortar or concrete wherever possible. If kneeling is absolutely necessary then appropriate waterproof personal

protective equipment must be worn.
Do not eat, drink or smoke when working with cement to avoid contact with skin or mouth.
Before starting to work with cement, apply a barrier cream and reapply it at regular intervals.
Immediately after working with cement or cement-containing materials, workers should wash or shower and use skin moisturizers.
Remove contaminated clothing, footwear, watches, etc. and clean thoroughly before re-using them.

Eye/face protection:

Wear approved glasses or safety goggles according to EN 166 when handling dry or wet cement to prevent contact with eyes.

Skin protection:

Use watertight, wear- and alkali-resistant protective gloves (e.g. nitrile soaked cotton gloves with CE marking) internally lined with cotton; boots; closed long-sleeved protective clothing as well as skin care products (e.g. barrier creams) to protect the skin from prolonged contact with wet cement. Particular care should be taken to ensure that wet cement does not enter the boots. For the gloves, respect the maximum wearing time to avoid skin problems.
In some circumstances, such as when laying concrete or screed, waterproof trousers or kneepads are necessary.

Respiratory protection:

When a person is potentially exposed to dust levels above exposure limits, use appropriate respiratory protection. The type of respiratory protection should be adapted to the dust level and conform to the relevant EN standard, (e.g. EN 149, EN 140, EN 14387, EN 1827) or national standard.

Thermal Hazards:
Not applicable.

Use	PROC*	Expo-sure	Specification of Respiratory Protective Equipment (RPE)	RPE efficiency – Assigned Protection Factor (APF)
Industrial manufacture/formulation of hydraulic building and construction materials	2, 3	Duration is not restricted (up to 480 minutes per shift, 5 shifts a week)	not required	-
	14, 26		A) FFP1 or B) not required	APF = 4 -
	5, 8b, 9		A) FFP2 or B) FFP1	APF = 10 -
Industrial uses of dry hydraulic building and construction materials (indoor, outdoor)	2		not required	-
	14, 22, 26		A) FFP1 or B) not required	APF = 4 -
	5, 8b, 9		A) FFP2 or B) FFP1	APF = 10 -
Industrial uses of wet suspension of hydraulic building and construction materials	7		A) FFP1 or B) not required	APF = 10 -
	2, 5, 8b, 9, 10, 13, 14		not required	-
Professional use of dry hydraulic building and construction material (indoor, outdoor)	2		A) FFP1 or B) not required	APF = 4 -
	9, 26		A) FFP2 or B) FFP1	APF = 10 -
	5, 8a, 8b, 14		A) FFP3 or B) FFP1	APF = 20 APF = 4
	19		FFP2	APF = 10
Professional uses of wet suspensions of hydraulic building and construction materials	11		A) FFP2 or B) FFP1	APF = 10 -
	2, 5, 8a, 8b, 9, 10, 13, 14, 19		not required	-

8.2.3. Environmental exposure controls
Air: Environmental exposure control for the emission of cement particles into air has to be in accordance with the available technology and regulations.
Water: Do not wash cement into sewage systems or into bodies of water, to avoid high pH. Above pH 9, negative Eco toxicological impacts are possible.

Soil and terrestrial environment: No special emission control measures are necessary for the exposure to the terrestrial environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state:	Dry cement is a finely ground solid inorganic material.
Colour:	Grey or white powder (dry cement)
Odour:	Odourless
Melting point/freezing point:	Melting point > 1 250°C
Boiling point or initial boiling point and boiling range:	Not applicable as under normal atmospheric conditions, melting point > 1250°C
Flammability (solid, gas):	Not applicable as is a solid which is non-combustible and does not cause or contribute to fire through friction
Upper/lower explosive limits:	Not applicable as is not a flammable gas
Flash point:	Not applicable as is not a liquid
Auto-ignition temperature:	Not applicable (no pyrophoricity – no organo-metallic, organo-metalloid or organo-phosphine bindings or of their derivatives, and no other pyrophoric constituent in the composition)
Decomposition temperature:	Not applicable, as no organic peroxide present
pH: (T = 20°C in water, water-solid ratio 1:2):	11-13.5
Kinematic viscosity:	Not applicable, as not a liquid
Solubility: in water (T = 20 °C):	slight (0.1-1.5 g/l)
Partition coefficient: n-octanol/water:	Not applicable as is inorganic mixture
Vapour pressure:	Not applicable as melting point > 1250 °
Density and/or relative density:	2.75-3.20; Apparent density: 0.9-1.5 g/cm³
Relative vapour density:	Not applicable as melting point > 1250 °C
Particle characteristics:	Typical particle size: 5-30 µm

9.2. Other information

Not applicable.

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

When mixed with water, cements will harden into a stable mass that is not reactive in normal environments.

10.2. Chemical stability

Dry cements are stable as long as they are properly stored (see Section 7) and compatible with most other building materials. They should be kept dry.
Contact with incompatible materials should be avoided.
Wet cement is alkaline and incompatible with acids, with ammonium salts, with aluminum or other non-noble metals. Cement dissolves in hydrofluoric acid to produce corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates in cement react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

10.3. Possibility of hazardous reactions

Cements do not cause hazardous reactions.

10.4. Conditions to avoid

Humid conditions during storage may cause lump formation and loss of product quality.

10.5. Incompatible materials

Acids, ammonium salts, aluminum or other non-noble metals. Uncontrolled use of aluminum powder in wet cement should be avoided as hydrogen is produced.

10.6. Hazardous decomposition products

Cements will not decompose into any hazardous products.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Hazard class	Category	Effect	Reference
Acute toxicity - dermal	-	Limit test, rabbit, 24 hours contact, 2,000 mg/kg body weight – no lethality. Based on available data, the classification criteria are not met.	(2)
Acute toxicity- inhalation	-	No acute toxicity by inhalation observed. Based on available data, the classification criteria are not met.	(9)
Acute toxicity - oral	-	No indication of oral toxicity from studies with cement kiln dust. Based on	Literature

		available data, the classification criteria are not met.	survey
Skin corrosion/ irritation	2	Cement in contact with wet skin may cause thickening, cracking or fissuring of the skin. Prolonged contact in combination with abrasion may cause severe burns.	(2), Human experience
Serious eye damage/irritation	1	Portland cement clinker caused a mixed picture of corneal effects and the calculated irritation index was 128. Common cements contain varying quantities of Portland cement clinker, fly ash, blast furnace slag, gypsum, natural pozzolans, burnt shale, silica fume and limestone. 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.	(10), (11)
Skin sensitization	1B	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. 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. If the cement contains a soluble Cr (VI) reducing agent and as long as the mentioned period of effectiveness of the chromate reduction is not exceeded, a sensitizing effect is not expected [Reference (3)].	(3), (4), (17), (18)
Respiratory sensitisation	-	There is no indication of sensitization of the respiratory system. Based on available data, the classification criteria are not met.	(1)
Germ cell mutagenicity	-	No indication. Based on available data, the classification criteria are not met.	(12), (13)
Carcinogenicity	-	No causal association has been established between Portland cement exposure and cancer. The epidemiological literature does not support the designation 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 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.). Based on available data, the classification criteria are not met.	(1), (14)
Reproductive toxicity	-	Based on available data, the classification criteria are not met.	No evidence from human experience
STOT-single exposure	3	Cement dust may irritate the throat and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of occupational exposure limits. 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.	(1)
STOT-repeated exposure	-	There is an indication of COPD. The effects are acute and due to high exposures. No chronic effects or effects at low concentration have been observed. Based on available data, the classification criteria are not met.	(15)
Aspiration hazard	-	Not applicable as cements are not used as an aerosol.	

Medical conditions aggravated by exposure

Inhaling cement dust may aggravate existing respiratory system disease(s) and/or medical conditions such as emphysema or asthma and/or existing skin and/or eye conditions.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

The product is not hazardous to the environment. Eco toxicological tests with Portland cement on Daphnia magna [Reference (5)] and Selenastrum coli [Reference (6)] have shown little toxicological impact. Therefore LC50 and EC50 values could not be determined [Reference (7)]. There is no indication of sediment phase toxicity [Reference (8)]. The addition of large amounts of cement to water may, however, cause a rise in pH and may, therefore, be toxic to aquatic life under certain circumstances.

12.2. Persistence and degradability

Not relevant. After hardening, cement presents no toxicity risks.

12.3. Bio accumulative potential

Not relevant. After hardening, cement presents no toxicity risks.

12.4. Mobility in soil

Not relevant. After hardening, cement presents no toxicity risks.

12.5. Results of PBT and vPvB assessment

Not relevant. After hardening, cement presents no toxicity risks.

12.6. Other adverse effects

Not relevant.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Do not dispose of into sewage systems or surface waters.

13.1.1. Product – cement that exceeded its self-life

EWC entry: 10 13 99 (wastes not otherwise specified)
(and when demonstrated that it contains more than 0.0002% soluble Cr (VI)): shall not be used/sold other than for use in controlled closed and totally automated processes or should be recycled or disposed of according to local legislation or treated again with a reducing agent.

13.1.2. Product – unused residue or dry spillage

EWC entry: 10 13 06 (Other particulates and dust)
Pick up dry unused residue or dry spillage as is. Mark the containers. Possibly reuse depending upon shelf life considerations and the requirement to avoid dust exposure. In case of disposal, harden with water and dispose according to “Product – after addition of water, hardened".

13.1.3. Product – wet mortar

Allow to harden, avoid entry in sewage and drainage systems or into bodies of water (e.g. streams) and dispose of as explained below under “Product - after addition of water, hardened”.

13.1.4. Product – after water addition, hardened

Dispose of according to the local legislation. Avoid entry into the sewage water system. Dispose of the hardened product as concrete waste. Due to the inertisation, concrete waste is not a dangerous waste.
EWC entries: 10 13 14 (waste from manufacturing of cement – waste concrete or concrete sludge) or 17 01 01 (construction and demolition wastes - concrete).

13.1.5. Packaging

Completely empty the packaging and process it according to local legislation.
EWC entry*:* 15 01 01 (waste paper and cardboard packaging).

SECTION 14: TRANSPORTATION INFORMATION

Cement is not covered by the international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID), therefore no classification is required. No special precautions are needed apart from those mentioned under Section 8.

14.1. UN or ID number

Not relevant.

14.2. UN proper shipping name

Not relevant.

14.3. Transport hazard class(es)

Not relevant.

14.4. Packing group

Not relevant.

14.5. Environmental hazards

Not relevant.

14.6. Special precautions for user

Not relevant.

14.7. Maritime transport in bulk according to IMO instruments

Not relevant.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/ legislation specific for the mixture

EU regulatory information

Cement is a mixture according to REACH and is not subject to registration. Cement clinker is exempt from registration (Art 2.7 (b) and Annex V.10 of REACH).

The marketing and use of cement is subject to a restriction on the content of soluble Cr (VI) (REACH Annex XVII point 47 Chromium VI compounds)

1. Cements and cement preparations shall not be marketed or used if they contain, when hydrated, water-soluble chromium (VI) in excess of 2 mg / Kg (0.0002%) of the total weight of dry cement.
2. If reducing agents are used, subject to the application of other Community provisions relating to the classification, packaging and labeling of dangerous substances and mixtures, cement packaging or mixtures containing cement should include a visible, legible and indelible information on the packing date, the conditions and the storage period, which are appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium (VI) below the limit indicated in point 1.
3. Notwithstanding, paragraphs 1 and 2 shall not apply to the placing on the market and use of controlled closed and totally automated processes in which the handling of cement and cement-containing mixtures are made solely by machines and there is no possibility of contact with the skin.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for this mixture by the supplier.

SECTION 16: OTHER INFORMATION

16.1. SDS changes

Main changes introduced in this SDS version:

Section 1&3: Updated cement types

The current version 6.00 / EN replaces all previous versions.

16.2. Identified uses and use descriptors and categories

PROC	Identified Uses - Use Description	Manufacture/ Formulation of building and construction materials	Professional / Industrial use of building and construction materials
2	Use in closed, continuous process with occasional controlled exposure, e.g. industrial or professional manufacture of hydraulic binders	**X**	**X**
3	Use in closed batch process, e.g. industrial or professional manufacture of ready-mix concrete	**X**	**X**
5	Mixing or blending in batch process for formulation of mixtures and articles, e.g. industrial or professional manufacture of pre-cast concrete	**X**	**X**
7	Industrial spraying, e.g. industrial use of wet suspensions of hydraulic binders by spraying		**X**
8a	Transfer of substance or mixture from/to vessels/large containers at non-dedicated facilities, e.g. use of cement in bags to prepare mortar		**X**
8b	Transfer of substance or mixture from/to vessels/large containers a dedicated facilities, e.g. filling of silos, trucks or barges at cement plants	**X**	**X**
9	Transfer of substance or mixture into small containers, e.g. filling of cement bags in cement plants	**X**	**X**
10	Roller application or brushing, e.g. products to improve adherence between building surfaces and finishing products		**X**
11	Non-Industrial spraying, e.g. professional use of wet suspensions of hydraulic binders by spraying		**X**
13	Treatment of articles by dipping and pouring, e.g. covering of construction products with a layer to improve the performance of the product		**X**
14	Production of mixtures or articles by tableting, compression extrusion, pelletisation, e.g. production of floor tiling	**X**	**X**

19	Hand-mixing with intimate contact and only PPE available, e.g. mixture of wet hydraulic binder on a construction site		**X**
22	Potentially closed processing operations with minerals/metals at elevated temperature in industrial setting, e.g. production of bricks		**X**
26	Handling of solid inorganic substances at ambient temperature, e.g. mixture of wet hydraulic binders	**X**	**X**

16.3. Abbreviations and Acronyms

ACGIH: American Conference of Industrial Hygienists
ADR: European agreement concerning the international transit of dangerous goods
RID: Regulations concerning the international railway transport of dangerous goods
APF: Assigned protection factor
BOELV: Binding Occupational Exposure Limit Value
CAS: **C**hemical **A**bstracts **S**ervice
CLP: Classification, labelling and packaging (Regulation (EC) No 1272/2008)
COPD: Chronic Obstructive Pulmonary Disease
DNEL: Derived no-effect level
EC50: Median biologically active dose
ECHA: European Chemicals Agency
EINECS: European **IN**ventory of **E**xisting commercial **C**hemical **S**ubstances
EPA: Type of air filter
ES: Exposure scenario
EWC: **E**uropean **W**aste **C**atalogue
FF P: Filtering face piece against particles (disposable)
FM P: Filtering mask against particles with filter cartridge
GefStoffV: Gefahrstoffverordnung
HEPA: Type of high efficiency air filter
H&S: Health and Safety
IATA: **I**nternational **A**ir **T**ransport **A**ssociation
IMDG: **I**nternational agreement on the **M**aritime transport of **D**angerous **G**oods
LC50: Median lethal dose
MEASE: Metals estimation and assessment of substance exposure, EBRC Consulting GmbH for Eurometaux, http://www.ebrc.de/industrialchemicals-reach/projects-and-references/mease.php
MS: Member State
OELV: **O**ccupational **E**xposure **L**imit value
PBT: **P**ersistent, **B**io-accumulative and **T**oxic
PNEC: Predicted no-effect concentration
PPE: **P**ersonal **P**rotective **E**quipment
PROC: **PRO**cess **C**ategory
REACH: **R**egistration, **E**valuation and **A**uthorization of **C**hemicals
RPE: **R**espiratory **P**rotective **E**quipment
SCOEL: Scientific Committee on Occupational Exposure Limit Values
SDS: **S**afety **D**ata **S**heet
SE: Single exposure
STP: Sewage treatment plant
STOT: **S**pecific **T**arget **O**rgan **T**oxicity
TLV-TWA: Threshold Limit Value-Time-Weighted Average
TRGS: Technische Regeln für Gefahrstoffe
UFI: Unique Formula Identifier
VLE-MP: Exposure limit value-weighted average in mg by cubic meter of air
vPvB: **V**ery **P**ersistent, **V**ery **B**io-accumulative
w/w: **W**eight by **W**eight
WWTP: Waste water treatment plant

16.4. Key literature references and sources of data

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(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.

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(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.

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(17) *Occurrence of allergic contact dermatitis caused by chromium in cement. A review of epidemiological investigations*, Kåre Lenvik, Helge Kjuus, NIOH, Oslo, December 2011.

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DISCLAIMER

This product health and safety data sheet was prepared in compliance with Annex I of Regulation (EC) No 453/2010. All information and instructions provided in this data sheet are based on the current state of scientific and technical knowledge at the date indicated on the present data sheet.
The information on this data sheet 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 or of the persons in receipt of this data sheet, as the case may be. It is the responsibility of persons in receipt of this data sheet to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces a formulation containing the product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from the present Product Health and Safety Data Sheet to their own product data sheet in compliance with Regulation (EC) No 1907/2006.

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