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

1.1 Product identifier
Substance name/ Trade name: **Portland cement according to ASTM C150 Typ 1**

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: Test dust
Uses advised against: -

1.3 Details of the supplier of the safety data sheet
Manufacturer/ Supplier: KSL staubtechnik gmbh
Address/ PO Box: Westendstrasse 11
Nat.-Ident./ Postcode/ city: DE - 89415 Lauingen
Telephone/ Fax/ E-mail: +49 (0) 9072 / 95 00-0 / Fax no: -50 / info@ksl-staubtechnik.de

1.4 Emergency telephone number
+49 (0) 9072 / 95 00–0 (Accessibility: Mon-Thu 8am to 4pm, Fri 8am to 12pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Cement dust may irritate the respiratory tract. When cement reacts with water 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.

2.1.1 Classification according to Regulation (EC) No. 1272/2008
Hazard class: Skin irrit. 2 / Irritant effect on the skin
Hazard category: 2
Hazard warnings: H315 Causes Skin corrosion/ irritation.

Hazard class: Eye dam. 1 / Serious eye damage / eye irritation
Hazard category: 1
Hazard warnings: H318 Causes serious eye damage/ irritation.

Hazard class: STOT Single 3 / Specific target organ toxicity (single exposure)
Hazard category: 3
Hazard warnings: H335 May cause respiratory tract irritation.

2.2 Label elements
2.2.1 Label elements according to Regulation (EC) No. 1272/2008


GHS05


GHS07

Signal word: Hazard

Hazards:
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May irritate the respiratory tract.
EUH203 Contains chromium (VI). May cause allergic reactions.

Safety precautions:
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+ IF IN EYES:
P351+ Rinse cautiously with water for severalminutes.
P338 Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a doctor.
P302+ IF ON SKIN:
P352 Wash with plenty of soap and water.
P333+ If skin irritation:
P313 Get medical advice/attention.
P261 Avoid breathing dust. Do not inhale dust / fume / gas / mist / vapour / aerosol.
P304+ IF INHALED:
P340 Remove person to fresh air and keep comfortable for breathing.
P312 Call a doctor if you feel unwell.

If product is accessible to everybody, additionally:
P102 Keep out of the reach of children.
P501 Dispose of contents/container to suitable waste collection points.

H317 May cause allergic skin reactions.
H373 May cause damage to organs (lungs) prolonged or repeated exposure.

When cement comes into contact with water or becomes moist, a strongly alkaline solution is formed. Due to this, skin and eye irritation as well as dermatitis or serious skin rashes can be caused.

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.

The product contains a chromate reducing agent, whereby the content of water-soluble chromium (VI) is less than 0.0002% (determined according to EN 196-10). In the event of improper storage (access of moisture) or superposition, the chromate reducing agent contained may lose its effectiveness prematurely and a sensitising effect of the cement cannot be excluded when in contact with skin. (H317 or EUH203)

When properly stored in a dry place, bagged goods remain low in chromate for at least 6 months from the date of filling, loose goods for at least 2 months from the date of shipment.

SECTION 3: Composition/ information on ingredients

3.1 Substances

The product is a mixture.

3.2 Mixtures

Composition/ information on ingredients

Description of the mixture: Standard cement in accordance with DIN EN 197-1 and DIN EN 197-4 or if necessary, approval document of the Deutsches Institut für Bautechnik.

Hazardous ingredients:

Product identifier	CAS No.	EC No.	Concentration range [M.-%]	Classification according to Regulation (EC) No. 1272/2008
Portland cement clinker	65997-15-1	266-043-4	5-100 %	- Skin irrit. 2 H315 - Sens. skin 1B H317 - Eye dam. 1 H318 - STOT-single 3 H335
Flue Dust, (b)	68475-76-3	270-659-9	0.1-5%	- Eye irrit. 1 H318 - STOT-single 3 H335 - Sens. skin 1B H317 - Skin irrit. 2 H315

(a) Portland cement clinker is exempted from the registration requirement in accordance with Article 2.7 (b) and Annex V.10 of Regulation (EC) No 1907/2006 (REACh).
(b) Flue Dust is a substance (UCVB) which is produced during cement clinker production; other common names are cement kiln dust, bypass dust, filter dust, EGR dust and clinker dust.

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes:
If symptoms persist, it is advised to consult a doctor. Please specify substance/ product and measures taken to the doctor. No personal protective equipment is needed for first aid workers. First aid workers should avoid contact with wet cement.
After inhalation:
Ensure supply of fresh air. Any dust in the throat and nasal passages should be cleared promptly. Consult a doctor in case of symptoms such as discomfort, cough or persistent irritation.
After skin contact:
For dry cement, remove and rinse abundantly with water. For wet cement, wash with plenty of water. Remove contaminated clothing, footwear, watches, etc. Clean thoroughly before re-using them. Seek medical treatment if skin problems should arise.
After eye contact:
Do not rub eyes when dry, since additional cornea damage could occur due to mechanical stress. Remove contact lenses if any. Open the eyelid(s) widely and flush eye(s) immediately by thoroughly rinsing under running water for at least 20 minutes to remove all particles. If possible, use an isotonic eye rinsing solution (0.9 % NaCl). Always consult an occupational physician or ophthalmologist.
After 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 centre.

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 wet skin (due to sweat or humidity) after prolonged contact. Cement in contact with wet skin may cause skin irritation, dermatitis or serious skin damage. For further information see (1).
Inhalation:
Repeated inhalation of large amounts of cement dust over a long period of time increases the risk of developing lung diseases.
Environment:
Under normal use, 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: Firefighting measures

5.1 Extinguishing media
Suitable
Cement is not flammable.

5.2 Special hazards arising from the substance or mixture
Cements are non-combustible and non-explosive and will not facilitate or sustain the combustion of other materials.

5.3 Advice for firefighters
No special measures required, since cement does not pose any fire-related hazards.

5.4 Additional advice
None

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
6.1.1 For non-emergency personnel
Wear protective clothing as described under Section 8. Follow the instructions for safe use, as described under Section 7.
6.1.2 For emergency responders
Emergency plans are not necessary. With high dust levels, respiratory protection is however required.

6.2 Environmental precautions
Do not wash cement down sewage or into surface water or groundwater.

6.3 Methods and material for containment and cleaning up
6.3.1 Dry cement
Collect cement spillage and reuse it if possible.
For cleaning, use dry methods as far as possible, such as negative pressure suction (portable units with high-efficiency filter systems (EPA and HEPA filters, EN 1822-1:2009) or equivalent techniques) that do not generate dust. Never use compressed air for cleaning.
If dust is generated during dry cleaning, be sure to use personal protective equipment. Avoid inhalation of cement dust and skin contact. Pour spilled material back into container. It is possible to use the material at a later date.
6.3.2 Wet cement
Pick this up and place in a container. Allow the material to dry and solidify before disposing of it as described in section 13.
6.3.3 Advice on inappropriate containment and cleaning methods
Never use compressed air for cleaning.

6.4 Reference to other sections
See Section 13 for more details. Personal protective equipment is specified in section 8 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
7.1.1 Recommendations on safe handling
Follow the recommendations as given under Section 8. To clean up dry cement, see Subsection 6.3.
Measures to prevent fire and explosion
Not applicable.
Measures to prevent aerosol and dust generation
Do not sweep. For cleaning, use suitable methods as dry as possible - such as vacuum intake - that do not cause dust generation. Further information on dust prevention can be found at the DGUV: https://www.dguv.de/staub-info/zehn-goldene-regeln/index.jsp as well as on the NePSi platform: http://www.nepsi.eu/
Measures to protect the environment
No special measures required.
7.1.2 Advice on general occupational hygiene
During work do not drink, eat or smoke. Wash hands after use/ contact. In dusty atmosphere, use breathing masks and safety goggles. Use protective gloves to avoid skin contact.

7.2 Conditions for safe storage, including any incompatibilities

Advice on storage conditions

Cement should be stored under dry, waterproof conditions (i.e. with internal condensation minimised), clean and protected from contamination. 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, which can collapse unexpectedly. Do not use aluminium containers due to incompatibility of the materials.
For cements containing chromate reducers, it must be borne in mind that in case of non-appropriate storage (moisture penetration) or too long storage, the contained chromate reducers can lose its efficacy prematurely so that a sensitizing effect of the cement in skin contact cannot be excluded (see Section 2.3).

This product is classified with GISCODE ZP 1 (cement-based products, low in chrome) (see Section 15). Further information on safe handling, protection measures and rules of conduct can be found in GISCODE ZP 1. It is available as part of the Hazardous Substance Information System of the Berufsgenossenschaft der Bauwirtschaft (German professional association for the building industry) on www.gisbau.de.

Requirements for storage rooms and vessels

Store in dry and sealed containers, possibly the original ones.

Storage class

VCI: 13 (non-flammable solids).

7.3 Specific end use(s)

Industry and sector specific guidance

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

SECTION 8: Exposure controls/ personal protection

8.1 Control parameters

Components with workplace-related limit values to be monitored:

Chemical identity		National limit value	Peak limitation	Exposure type	Comment/ Legal provision	Monitoring procedures, e.g.
General dust limit value	-8 h	1.25 (A) mg/m³ (respirable)	2 (II) 15 min. 20 (E)	inhalative	Workplace-related limit value TRGS 900	TRGS 402
General dust limit value	-8 h	10 (E) mg/m³ (inhalable)		inhalative	Workplace-related limit value TRGS 900	TRGS 402
Water-soluble Chromium VI		2 ppm in cement	not specified		Regulation (EC) No. 1907/2006	EN 196-10

Information on the Technical Rules for Hazardous Substances (TRGS) in (2)

8.2 Exposure controls and monitoring

Occupational exposure limits can often only be met by using technical and/or individual protective measures. If no suitable workplace measurements are available for exposure, an exposure estimate and suitable protective measures can be derived on the basis of the MEASE tool (Reference 3). For the identified uses in the professional field (section 16), technical control devices and individual protective measures (8.2.2) result. The tables should be read in such a way that only A-A combinations and B-B combinations are possible. Furthermore, it has to be taken into account that the data apply to a continuous exposure of 8h per day and 5 days per week.
For the private consumer, the products should only be used outdoors or in well-ventilated rooms and personal protective equipment should be worn (general information in 8.2.2)

8.2.1 Appropriate engineering controls

Measures to reduce generation of dust and to avoid dust propagating, such as suitable exhaust ventilation and clean-up methods, which do not raise dust.

8.2.2 Individual protection measures, such as personal protective equipment

General

Treat the product in compliance with the safety instructions. Do not eat, drink or smoke while working. Wash hands before breaks and at the end of work and shower if necessary to remove adhering cement. Avoid contact with eyes and skin. After working with cement, workers should wash or shower and use skin care products. Clean contaminated clothing, shoes, watches, etc. before reuse.

Eye/ face protection

In the case of dust generation or risk of splashing, wear safety goggles according to EN 166.

Skin/ hand protection
Wear waterproof, abrasion and alkali-resistant protective gloves. Leather gloves are not suitable due to their water permeability and may release chromate-containing compounds.
Chemical gloves (Cat. III) are not required when working with cement. For example, nitrile-impregnated cotton gloves (layer thickness approx. 0.15 mm) are suitable. Observe the maximum wearing time (480 min.). Change soaked gloves. Keep gloves ready for changing.
General information on skin protection can be found in DGUV regulation 112-195.

Wear closed, long-sleeved protective clothing and tight shoes. If contact with damp material cannot be avoided, the protective clothing should also be waterproof. Ensure that no wet cement runs into shoes or boots from above.
Follow the skin protection plan. Use skin care products, especially after work.

Respiratory protection
If the exposure limit values are exceeded (e.g. during open handling of powdery product), a suitable respiratory protection mask must be used.
General information on this subject can be found in DGUV Regulation 112-190.
If it is not possible to comply with the occupational exposure limits by means of dust control measures, e.g. local extraction systems, particle-filtering half masks of the FFP type (according to DIN EN 149) must be used.

Instruction of employees in the correct use of personal protective equipment is required to ensure the necessary effectiveness.

Occupational hygiene
During work do not eat, drink or smoke. Before breaks and after working, workers should wash hands and, if possible, shower to remove adhering cement. Avoid contact with eyes and skin. Immediately after working with cement, workers should wash or shower and use skin moisturisers. Clean contaminated clothing, shoes, watches, etc., before re-using.

8.2.3 Environmental exposure controls
Air
Compliance with dust emission limit values according to the Technical Instructions on Air Quality Control.
Water
Do not wash cement down sewage and drainage systems. Due to exposure, an increase in the pH value may occur. If pH is found to be above 9, ecotoxicological effects may arise. The water led or flowing into the drainage system or in surface water must therefore not result in a corresponding pH-value amount. Wastewater and groundwater regulations must be observed.
Soil
Compliance with the Federal Soil Protection Act (BBodSchG) and the Federal Soil Protection and Contaminated Sites Ordinance (BBodSchV). No special control measures required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a)	**Physical state**	Dry cement is a finely ground inorganic solid.
(b)	**Colour**	grey or white powder
(c)	**Odour**	odourless
(d)	**Melting point/freezing point**	Melting point > 1250 °C
(e)	**Boiling point or initial boiling point and boiling range**	not applicable, as under normal conditions the melting point is above 1250 °C.
(f)	**Flammability**	not applicable as material is not flammable.
(g)	**Lower and upper explosion limits**	do not apply to solids according to Regulation (EU) 2020/878.
(h)	**Flash point**	does not apply to gases, aerosols and solids according to Regulation (EU) 2020/878.
(i)	**Ignition temperature**	only applies to gases and liquids according to Regulation (EU) 2020/878.
(j)	**Decomposition temperature**	not applicable as not self-decomposing and does not contain inorganic peroxides.
(k)	**pH**	(T = 20 °C in water, water-solid ratio 1:2): 11-13.5.
(l)	**Kinematic viscosity**	applies only to liquids according to Regulation (EU) 2020/878.
(m)	**Solubility**	in water (T = 20 °C): low (0,1-1,5 g/l)
(n)	**Partition coefficient n-octanol/water (log value)**	not applicable, as inorganic.
(o)	**Vapour pressure**	not applicable, since melting point > 1250 °C
(p)	**Density and/or specific gravity**	2.75-3.20 g/cm3; bulk density: 0.9-1.5 g/cm3
(q)	**Relative vapour density**	applies only to gases and liquids according to Regulation (EU) 2020/878.
(r)	**Particle properties**	Typical mean particle size 5-30 µm.

9.2 Other information
Not applicable
9.2.1 Information on physical properties
Not applicable.
9.2.2 Other safety characteristics
Not applicable.

SECTION 10: Stability and reactivity

10.1 Reactivity
Cement is a hydraulic substance. When mixed with water, an intended reaction takes place. Cements will harden into a stable mass that is not reactive in normal environments.

10.2 Chemical stability
Cements are stable as long as they are properly stored dry (see Section 7). Contact with incompatible materials should be avoided. Wet cement is alkaline and incompatible with acids, ammonium salts, aluminium and other non-noble metals. Hydrogen can be produced in the process. Cement dissolves in hydrofluoric acid to produce corrosive silicon tetrafluoride gas. Contact with these incompatible materials should be avoided. Cement reacts with water to form calcium silicate hydrate, calcium aluminium hydrate and calcium hydroxide. Calcium silicates in cement may react with powerful oxidisers such as fluorides.

10.3 Possibility of hazardous reactions
Not applicable.

10.4 Conditions to avoid
Moisture during storage may cause lump formation and loss of product quality.

10.5 Incompatible materials
Acids, ammonium salts, aluminium or other base metals. The uncontrolled use of aluminium 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 hazard classes within the meaning of Regulation (EC) No 1272/2008

Hazard class		Cat.	Effect	Reference
a)	Acute toxicity – dermal	-	Limit test, rabbit, 24 hours contact, 2,000 mg/kg body weight – no lethality. Based on the available data, the classification criteria are not met.	(4)
	Acute toxicity – inhalation	-	Limit test, rat, with 5 g/m³, no acute toxicity. The study was conducted with Portland cement clinker, the main component of cement. Based on the available data, the classification criteria are not met.	(10)
	Acute toxicity – oral	-	No indication of acute oral toxicity from studies on animals with cement kiln dust and cement dust. Based on the available data, the classification criteria are not met.	Literature survey
b)	Skin corrosion/irritation	2	Cement has an irritant effect for the skin and mucous membranes. Dry cement in contact with moist skin or skin in contact with moist or wet cement may lead to different irritant and inflammatory reactions of the skin, e.g. redness and cracking. Prolonged contact in combination with mechanical abrasion may lead to serious skin damage.	(4) Human experience
c)	Serious eye damage/irritation	1	With in vitro studies, Portland cement clinker (main component of cement) showed different degrees of impact on the cornea. The calculated "irritation index" is 128. Direct contact with cement may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact with larger amounts of dry cement or splashes of wet cement may cause effects ranging from moderate eye irritation (e.g. conjunctivitis or blepharitis) to serious eye damage and blindness.	(11), (12) Human experience
d)	Respiratory sensitisation	-	There is no indication of sensitisation of the respiratory tract. Based on the available data, the classification criteria are not met.	(1)
	Skin sensitisation	1 B	Individuals may develop skin eczema after contact with wet cement, caused by an immunological reaction to water-soluble chromium(VI) (allergic contact dermatitis). The reaction can occur in a variety of forms ranging from a mild rash to severe dermatitis. As the cement contains chromate reducers and as long as the stated period of chromate reduction effectiveness is not exceeded, an aller-gic sensitising effect is not expected and labelling with H317 is not required.	(5), (13), (18), (19)
e)	Germ cell mutagenicity	-	No indication of germ cell mutagenicity. Based on the available data, the classification criteria are not met.	(14), (15)
f)	Carcinogenicity	-	No causal association has been established between cement exposure and cancer. The epidemiological literature does not support the designation of exposure to cement as a suspected human carcinogen.	(1)

Hazard class		Cat.	Effect	Reference
			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." Portland cement contains over 90% of Portland cement clinker. Based on the available data, the classification criteria are not met.	(16)
g)	Reproductive toxicity	-	Based on the available data, the classification criteria are not met.	No evidence based on human experience
h)	Specific target organ toxicity – single exposure	3	Cement dust exposure may cause irritation of the respiratory system (throat, neck, lung). Coughing, sneezing and shortness of breath may occur following exposure in excess of workplace-related limit values. 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)
i)	Specific target organ toxicity – repeated exposure	-	Coughing, shortness of breath and chronic obstructive changes in the respiratory tract may occur following long-term exposure exceeding workplace-related limit values. No chronic effects at low concentration have been observed. Based on the available data, the classification criteria are not met.	(17)
j)	Aspiration hazard	-	Not applicable as cements are not used as an aerosol.	-

Apart from skin sensitisation, cements (normal cements) and Portland cement clinkers have the same toxicological and ecotoxicological properties.

Medical conditions aggravated by exposure
Cement may aggravate existing respiratory tract disease(s) and/or medical conditions such as emphysema or asthma and/or existing skin and/ or eye conditions.

11.2 Information on other hazards
No endocrine disrupting properties or other adverse effects are known.

SECTION 12: Ecological information

12.1 Toxicity
The product is not hazardous to the environment. Ecotoxicological tests with Portland cement on Daphnia magna (U.S. EPA, 1994a) [Reference (6)] and Selenastrum Coli (U.S. EPA, 1993) [Reference (7)] have shown little toxicological impact. Therefore LC50 and EC50 values could not be determined [Reference (8)]. There is no indication of sediment phase toxicity [Reference (9)]. 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 as cement is an inorganic mineral material. After hydration, remaining cement residues present no toxicity risks.

12.3 Bioaccumulative potential
Not relevant as cement is an inorganic mineral material. After hydration, remaining cement residues present no toxicity risks.

12.4 Mobility in soil
Not relevant as cement is an inorganic mineral material. After hydration, remaining cement residues present no toxicity risks.

12.5 Results of PBT and vPvB assessment
Not relevant as cement is an inorganic mineral material. After hydration, remaining cement residues present no toxicity risks.

12.6 Endocrine disrupting properties
Not relevant.

12.7 Other adverse effects
Not relevant.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

It can be disposed of together with household waste in compliance with local regulations. Collect the product dry. Do not dispose of into drains or surface waters.

Recommendation

Agree on the correct waste code with the disposal company.

Product that has exceeded the shelf life of the reducing agent

(and when demonstrated that it contains more than 0.0002% soluble Chromium(VI)): the product shall no longer be used or placed on the market, other than for use in controlled closed and totally automated processes or if treated again with a chromate reducing agent.

Pick up dry unused product residue

Take up dry. Label container. Continue to use if possible, avoiding exposure to dust (observe expiry date). In case of disposal, cure with water and dispose of as described under "Products cured after addition of water". Waste code according to LoW: 10 13 06.

Wet products and product slurries

Allow moist products and product slurries to cure and do not allow them to enter drains or watercourses. Dispose of as described under "Products cured after addition of water".

Products hardened after addition of water

Dispose of according to local legislation. Avoid entry into the sewage. Dispose of the hardened product as concrete waste and concrete sludge. Waste code according to LoW depending on the origin: as 17 01 01 (concrete) or 10 13 14: (waste concrete and concrete sludge)

Packaging

Empty packaging completely and send for recycling. Otherwise, dispose of the completely empty packaging according to waste code LoW: 15 01 01 (paper and cardboard packaging) or LoW: 15 01 05 (composite packaging).

SECTION 14: Transport information

The product is not subject to international dangerous goods regulations (IMDG, IATA, ADR/RID). Therefore, no dangerous goods classification is required.

14.1 UN number or ID number

Not applicable

14.2 UN proper shipping name

Not applicable

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 Carriage in bulk by sea in accordance with IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environment regulations/legislation specific for the substance or mixture

Cement is a mixture and it is therefore not subject to registration according to the EC Regulation 1907/2006 (REACH). Portland cement clinker is exempted from registration according to Art. 2.7(b) and Annex V.10 of the EC Regulation 1907/2006 (REACH).

EU regulations

Restrictions on use:

According to Annex XVII paragraph 47 of the EC Regulation 1907/2006, cement and cement-containing mixtures shall not be placed on the market, or used,

1. Cement and cement-containing mixtures shall not be placed on the market, or used, if they contain, when hydrated, more than 2 mg/kg (0.0002 %) soluble chromium VI of the total dry weight of the cement.
2. If reducing agents are used, then without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of cement or cement-containing mixtures is visibly, legibly and indelibly marked with information on the packing date, as well as on 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 the limit indicated in paragraph 1.
3. By way of derogation, paragraphs 1 and 2 shall not apply to the placing on the market for, and use in, controlled closed and totally automated processes in which cement and cement-containing mixtures are handled solely by machines and in which there is no possibility of contact with the skin.

4. The Standard for the examination of the content of water-soluble chromium VI of cement and cement- containing mixtures is approved by the European Committee for Standardization (CEN) as the standard method for documentation compliance with the requirements of section 1.

The manufacturers of cement have committed themselves within the framework of the "Agreement on the Protection of the Health of Workers through the Good Handling and Use of Crystalline Silica and Products Containing it" to introduce so-called "Good Practices" for safe handling (http://www.nepsi.eu/).

National regulations
When handling this product, the following legal provisions are i. a. to be complied with

AwSV Water hazard class: 1 - slightly hazardous for water (Self-assessment in accordance with AwSV of 18 April 2017).
Hazardous Substances Ordinance (Gefahrstoffverordnung - GefStoffV)
Chemicals Prohibition Ordinance (Chemikalienverbotsverordnung - ChemVerbotsV)
GISCODE: ZP 1 (cement-based product, low in chrome)
TRGS 900 Work-place related limit values (Technical rule for hazardous substances)
TRGS 510 storage of hazardous substances in portable containers (Storage class 13 - non-flammable solids)
TRGS 402 Identification and assessment of the risks from activities involving hazardous substances: Inhalation exposure
TRGS 500 precautions
Ordinance on the European Waste Catalogue (European List of Waste LoW)
Regulation on occupational health care (Verordnung zur arbeitsmedizinischen Vorsorge - ArbMedVV)
Basic principles of the Institution for Statutory Accident Insurance and Prevention on occupational medical examinations
MuSchG Maternity Protection Act
JuSchG Youth Protection Act

15.2 Chemical safety assessment
A safety assessment has not been carried out.

SECTION 16: Other information

16.1 Changes to the previous version
Header updated; 2.1.1 + 2.2.1 updated (H+P sentences); 2.3 editorial changes + sentence inserted; 3.2 column "REACH" deleted; 6.3 + 6.4 new information inserted; Section 7: new references inserted; Section 8: completely revised; Section 9: adapted to Regulation (EU) 2020/878; 10. 3 + 10.5 added; Section 11: adapted to named regulation; 12.6 new inserted; 13.1 added; Section 14: adapted to named regulation; 15.1 updated (AwSV); Section 16: updated; 16.6 new inserted.

16.2 Abbreviations and acronyms
ACGIH	American Conference of Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
APF	Assigned protection factor (Schutzfaktor von Atemschutzmasken)
ArbMedVV	Verordnung zur arbeitsmedizinischen Vorsorge (Regulation on occupational health care)
AwSV	Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on Installations for Handling Substances Hazardous to Water)
BG	Berufsgenossenschaft (Institution for Statutory Accident Insurance and Prevention)
CAS	Chemical Abstracts Service
CLP	Classification, labelling and packaging (Regulation (EC) No. 1272/2008)
ECHA	European Chemicals Agency
EC50	Half maximal effective concentration
EINECS	European Inventory of Existing Commercial chemical Substances
EPA	Type of high efficiency air filter
GefStoffV	Gefahrstoffverordnung (Hazardous Substances Ordinance)
HEPA	Type of high efficiency air filter
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International agreement on the Maritime transport of Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
LC50	Median lethal dose
MEASE	Metals estimation and assessment of substance exposure
PBT	Persistent, bio-accumulative and toxic
PROC	Process category
REACH	Registration, Evaluation and Authorisation of Chemicals (Regulation (EC) 1907/2006)
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STOT	Specific target organ toxicity
TRGS	Technische Regeln für Gefahrstoffe (Technical rules for dangerous substances)
UVCB	Substances of Unknown or Variable composition, Complex reaction products or Biological materials
VCI	Verband der chemischen Industrie e.V. (Registered association of the chemical industry)
vPvB	Very persistent, very bioaccumulative

16.3 Literature references and sources of data

With regard to the sources of key data and technical information, we refer, among others, to the information provided by the raw material supplier

(1) *Portland Cement Dust - Hazard assessment document EH75/7,* UK Health and Safety Executive, 2006: http://www.hse.gov.uk/pubns/web/portlandcement.pdf.
(2) *Technische Regel für Gefahrstoffe: https://www.baua.de/DE/Angebote/Rechtstexte-und-Technische-Regeln/Regelwerk/TRGS/TRGS.html.*
(3) MEASE 1.02.01 Exposure assessment tool for metals and inorganic substances, EBRC Consulting GmbH für Eurometaux, 2010: http://www.ebrc.de/tools/mease.php
(4) *Observations on the effects of skin irritation caused by cement*, Kietzman et al, Dermatosen, 47, 5, 184- 189 (1999).
(5) *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.
(6) 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).
(7) 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).
(8) *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.
(9) *Final report Sediment Phase Toxicity Test Results with Corophium volutator for Portland clinker* prepared for Norcem A.S. by AnalyCen Ecotox AS, 2007.
(10) TNO report V8801/02, *An acute (4-hour) inhalation toxicity study with Portland Cement Clinker CLP/GHS 03-2010-fine in rats*, August 2010.
(11) TNO report V8815/09, *Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test*, April 2010.
(12) TNO report V8815/10, *Evaluation of eye irritation potential of cement clinker W in vitro using the isolated chicken eye test*, April 2010.
(13) *European Commission's Scientific Committee on Toxicology, Ecotoxicology and the Environment (SCTEE) opinion of the risks to health from Cr (VI) in cement* (Europäische Kommission, 2002): http://ec.europa.eu/health/archive/ph_risk/committees/sct/documents/out158_en.pdf.
(14) *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
(15) *Cytotoxicity and genotoxicity of cement dusts in A549 human epithelial lung cells in vitro*; Gminski et al, Abstract DGPT conference Mainz, 2008.
(16) *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.
(17) *Exposure to Thoracic Aerosol in a Prospective Lung Function Study of Cement Production Workers; Noto, H., et al; Ann. Occup. Hyg., 2015, Vol. 59, No. 1, 4-24.*
(18) Occurrence of allergic contact dermatitis caused by chromium in cement. A review of epidemiological investigations, Kåre Lenvik, Helge Kjuus, NIOH, Oslo, December 2011.
(19) ECHA Support Questions and answers agreed with National Helpdesks. ID1659 May 2020. https://echa.europa.eu/es/support/qas-support/qas-agreed-with-national-hepldesks

16.4 Methods in accordance with Article 9 of Regulation (EC) No. 1272/2008 to evaluate information for classification purposes

The information in this safety data sheet has been taken from the supplier's safety data sheet.

16.5 Training advice workers

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

16.6 Information on NANO

We do not use any nanotechnology processes and no synthetic nano-materials are used for production. However, we cannot exclude the presence of small amounts of nanoparticles in the material. In order to obtain the desired particle size distribution in our product, the product is crushed and then sieved. It could be that some nanoparticles are produced in such a comminution process. By the way, the same applies to products such as flour or sugar! It is therefore not possible to exclude NANO material.

16.7 Disclaimer

The information on this data sheet describes the safety requirements of our product and is based on our current level of knowledge. It implies no guarantee of the product properties and does not justify a contractual legal relationship. This safety data sheet serves the user as reference information. Although this safety data sheet has been drawn up with great care, no guarantee for data accuracy, and no liability for the consequences of printing, typeset or transcription errors can be accepted. The existing laws, regulations and rule systems, including those not mentioned in this data sheet, must be complied with by the recipient of our products under their own responsibility.