ADOÇİM®

PORTLAND CEMENT CLINKER

SAFETY DATA SHEET

According to Annex II to REACH – Regulation 2020/878 and to Annex II to UK REACH

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Identification of the Substance/ Mixture

Product Name: PORTLAND CEMENT CLINKER
EINECS: 266-043-4
CAS: 65997-15-1

1.2. Use of the Substance / Application Area

Portland cement clinker is used for the production of common cements or other hydraulic binders in industrial installations. Cement and hydraulic binders are used in the production of building materials and in construction by professional users or consumers.

1.3. Identification of the Company

Manufacturer's
Name: Adoçim Çimento Beton San. ve Tic. A.Ş.
Address: Kızılca Mah. Keşliközü Mevkii Artova TOKAT
Telephone Number: + 90 356 611 25 00 **Fax:** + 90 356 611 22 32
E-mail: info@adocim.com **Web:** www.adocim.com

1.4.Emergency Telephone Number

Company Information: + 90 356 611 25 00/ Internal: 280-281
Working Hours: 08:00-18:00 (Weekdays)
Call the emergency telephone number of your town and provide the information contained in this sheet. If not available, call the National Toxicology Centre.

2. HAZARDS IDENTIFICATION

2.1. Classification

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.
Physico-chemical Hazard: Not relevant.
Health Hazard:
Skin Irritation 2; H315: Causes skin irritation.
Skin Sensitisation 1B; H317: May cause an allergic skin reaction.
Serious Eye Damage/Eye Irritation 1; H318: Causes serious eye damage.
STOT Single Exposure Respiratory Tract Irritation 3; H335: May cause respiratory irritation.
Environmental Hazard: Not relevant.

2.2. Label Elements

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

Signal Word: Danger

Hazard Classification and Statements:

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.

Precautionary Statements:

Measure

P102	Keep out of reach of children.
P261	Avoid breathing dust / füme / gas / mist / vapours / spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves / protective clothing / eye protection / face protection.

Response

P302+P352	IF ON SKIN: Wash with plenty of 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.
P312	Call a POISON CENTER / doctor if you feel unwell.
P321	Specific treatment (see on this label).
P332+P313	If skin irritation occurs: Get medical advice / attention.
P333+P313	If skin irritation or rash occurs: Get medical advice / attention.
P362	Take off contaminated clothing.
P363	Wash contaminated clothing before reuse.

Storage

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents / container in accordance with national regulations.

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.
The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Portland cement clinker is a substance of unknown or variable composition consisting of 4 main clinker phases, namely tri- and dicalcium-silicates ($3CaO.SiO_2$ and $2CaO.SiO_2$), tricalcium-aluminate ($3CaO.Al_2O_3$) and tetracalcium-aluminoferrite ($4CaO.Al_2O_3.Fe_2O_3$), usually together with some unreacted CaO (free lime), free MgO, potassium and sodium sulfate compounds. It is made by mineralogical transformation of raw materials that usage ratios is exactly known and formed by raw materials including oxides of calcium, silicon, aluminium and iron and small quantities of other elements.

IUPAC Name	EC Number	CAS Number	Molecule Formula	Typical Concentration % (weight)	Concentration Range % (weight)
Tricalcium silicate	235-336-9	12168-85-3	$3CaO.SiO_2$	60	55-65
Dicalcium silicate	233-107-8	10034-77-2	$2CaO.SiO_2$	13	10-18
Tetracalcium aluminoferrite	235-094-4	12068-35-8	$4CaO.Al_2O_3.Fe_2O_3$	10	9-12
Tricalcium aluminate	234-932-6	12042-78-3	$3CaO.Al_2O_3$	7.5	6.5-8.5
Calcium oxide (free lime)	215-138-9	1305-78-8	CaO	1.5	1-2.5
Magnesium oxide	215-171-9	1309-48-4	MgO	1.5	0-2

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 Portland cement clinker or wet Portland cement clinker.

In case of doubt or in the presence of symptoms contact a doctor and show him this document. In case of more severe symptoms, ask for immediate medical aid.

Following Contact with Eyes

Remove, if present, contact lenses if the situation allows you to do so easily. Do not rub eyes in order to avoid possible corneal damage by mechanical stress. Remove contact lenses if any. Incline head to injured eye, open the eyelids 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). Get medical advice/attention.

Following Skin Contact

For dry Portland cement clinker, remove and rinse abundantly with water. For wet/damp Portland cement clinker, 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. Get medical advice/attention. Avoid further contact with contaminated clothing.

Following Ingestion

Do not induce vomiting. If the person is conscious, wash out mouth with water and give plenty of water to drink. Get medical advice/attention.

Following Inhalation

Remove 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. Get medical advice/attention.

Rescuer Protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is

recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

Eyes: Eye contact with Portland cement clinker (dry or wet) may cause serious and potentially irreversible injuries.

Skin: Portland cement clinker 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 clinker dust may cause serious irritation, dermatitis or burns.

Inhalation: Repeated inhalation of Portland cement clinker dust over a long period of time increases the risk of developing lung diseases.

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

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If symptoms occur, whether acute or delayed, consult a doctor. When contacting a doctor, take this SDS with you.

Means to Have Available in The Workplace for Specific and Immediate Treatment: Running water for skin and eye wash.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Equipment

Portland cement clinker is not flammable.

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

Do not breathe combustion products. Portland cement clinker is not flammable or explosive. It does not facilitate or sustain combustion of other materials.

5.3. Advice for Fire-Fighters

General Information

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

Special Protective Equipment For Fire-Fighters

Portland cement clinker does not cause fire-related damages. There is no need for special protective equipment for firefighters. In case of fire, commonly used protective equipment should be used. Normal fire fighting 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).

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1. Personal Protective Precautions 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. Personal Protective Precautions for Emergency Responders

Emergency procedures are not required. However, respiratory protection is needed in situations with high dust levels. Wear protective equipment as described under Section 8 and follow the advice for safe handling and use given under Section 7.

6.2. Environmental Precautions

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

6.3. Methods and Material for Containment and Cleaning Up

For dry clinker;

Collect the spilled material as mentioned below and use it.

Use dry 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) which do not cause airborne dispersion. Never use compressed air.

Alternatively, wipeup the dust by mopping, wet brushing or by using water sprays or hoses and remove slurry. 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 clinker and contact with skin. Place spilled materials into a container. Solidify before disposal as described under Section 13.

For wet clinker;

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

6.4. Reference to Other Sections

Any information on personal protection and disposal is given in sections 8 and 13.

7. HANDLING AND STORAGE

7.1. Precautions for Safe Handling

7.1.1. Protective Measures

Before handling the product, consult all the other sections of this material safety data sheet. Follow the recommendations as given under Section 8.

To clean up dry clinker, 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.

Measure 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.

7.2.Conditions for Safe Storage, Including Any Incompatibilities

Portland cement clinker should be stored under waterproof, dry conditions, clean and protected from contamination.

Engulfment Hazard: Portland cement clinker can build-up or adhere to the walls of a confined space. The clinker can release, collapse or fall unexpectedly. 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 clinker without taking the proper safety measures.

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

7.3. Specific End Use(s)

Clinker is used for the production of common cements or other hydraulic binders.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1. Control Paramaters

8.1.1. Exposure Limits

Portland Cement Clinker Dust
OEL inhalable: 10 mg/m3 (8h TWA)
OELalveolar fraction: 5 mg/m3 (8h TWA)

8.1.2. Exposure Limits in Handling Chemical Materials

According to Regulation on Health and Safety Measures in Handling Chemical Materials, there is no exposure limit and exposure threshold limit value for water soluble Cr VI component included by cement clinker.

8.2. Exposure Controls

8.2.1. Appropriate Engineering Controls

Measures to reduce generation of dust and to avoid dust propagating in the environment such as dedusting, exhaust ventilation and dry clean-up methods which do not cause airborne dispersion.

Use	PROC*	Exposure	Localised controls	Efficiency
Industrial manufac-ture/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) general ventilation or B) generic local exhaust ventilation	17 % 78 %
Industrial uses of dry hydraulic building and construction materials (indoor, outdoor)	2		not required	-
	14, 26		A) not required or B) generic local exhaust ventilation	- 78 %
	5, 8b, 9		A) general ventilation or B) generic local exhaust ventilation	17 % 78 %
Industrial uses of wet suspension of hydraulic building and construc tion materials	2, 5, 8b, 9, 10, 13, 14		not required	-
Professional use of dry hydraulic building and construction material (indoor, outdoor)	2		not required	-
	9, 26		A) not required or B) generic local exhaust ventilation	- 72 %
	5, 8b, 14		A) not required or B) integrated local exhaust ventilation	- 87 %
Professional uses of wet suspensions of hydraulic building and construction materials	2, 5, 8b, 9, 14		not required	-

* PROC's are identified uses and defined in section 16.2.

8.2.2 Personal Protective Precautions

When choosing personal protective equipment, ask your chemical substance supplier for advice. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

General Precautions

Do not eat, drink or smoke when working with clinker to avoid contact with skin or mouth.

Before starting to work with clinker, apply a barrier creme and reapply it at regular intervals.

Immediately after working with clinker or clinker-containing materials, workers should wash or shower or use skin moisturisers. 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 clinker to prevent contact with eyes.

Skin Protection: Use watertight, wear- and alkali-resistant protective gloves (eg nitrile soaked cotton gloves with CE mark). Use boots, closed long-sleeved protective clothing as well as skin care products to protect the skin from prolonged contact with wet clinker. Particular care should be taken to ensure that wet clinker 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 EN 149 standard.

Thermal Hazards: Not applicable.

Use	PROC*	Exposure	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 APF = 4
Industrial uses of dry hydraulic building and construction materials (indoor, outdoor)	2		not required	-
	14, 26		A) FFP1 or B) not required	APF = 4 -
	5, 8b, 9		A) FFP2 or B) FFP1	APF = 10 APF = 4

Industrial uses of wet suspension of hydraulic building and construction materials	2, 5, 8b, 9, 14	Duration is not restricted (up to 480 minutes per shift, 5 shifts a week)	not required	-
Professional use of dry hydraulic building and construction material (indoor, outdoor)	2		FFP1	APF = 4
	9, 26		A) FFP2 or B) FFP1	APF = 10 APF = 4
	5, 8b, 14		A) FFP3 or B) FFP1	APF = 20 APF = 4
Professional uses of wet suspensions of hydraulic building and construction materials	2, 5, 8b, 9, 14		not required	-

* PROC's are identified uses and defined in section 16.2.

8.2.3 Environmental Exposure Controls

Air: Environmental exposure control for the emission of clinker particles into air has to be in accordance with the available technology and regulations for the emission of general dust particles.

Water: Do not wash clinker into sewage systems or into bodies of water, to avoid high pH. Above pH 9 negative ecotoxicological impacts are possible.

Soil: No special emission control measures are necessary for the exposure to the soil.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Portland cement clinker is a grey or white, granular inorganic solid material

Odour: Odourless.

Odour Threshold: no odour threshold, odourless.

pH: (T = 20°C in water, water-solid ratio 1:2): 11-13.5

Melting Point: > 1250 °C

Initial Boiling Point and Boiling Range: Not applicable as under normal atmospheric conditions, melting point >1250°C

Flash Point: Not applicable as is not a liquid.

Evaporation Rate: Not applicable as is not a liquid.

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 Flammability or Explosive Limits: Not applicable as is not a flammable gas

Vapour Pressure: Not applicable as melting point > 1250 °C

Vapour Density: Not applicable as melting point > 1250 °C

Relative Density: 2.75-3.20; Apparent density -: 0.9-1.5 g/cm³

Solubility(ies) in Water (T = 20 °C): Slight (0.1-1.5 g/l)

Partition Coefficient: n-octanol/water: Not applicable as is inorganic substance.

Auto-Ignition Temperature: Not applicable.

Decomposition Temperature: Not applicable as no organic peroxide present.

Viscosity: Not applicable as not a liquid.

Explosive Properties: Not applicable. Not explosive or pyrotechnic. Not in itself capable of producing gas by chemical reaction at temperature and pressure and at a speed as to cause damage to the surroundings. Not capable of a self-sustaining exothermic chemical reaction.

Oxidising Properties: Not applicable.

10. STABILITY AND REACTIVITY

10.1. Reactivity

When mixed with water, clinker will harden into a stable mass that is not reactive innormal environments.

10.2. Chemical Stability

Clinker is stable as long as it is properly stored (see Section 7). It should be kept dry.
Contact with incompatible materials should be avoided.
Wet clinker is alkaline and incompatible with acids, with ammonium salts, with aluminium or other non-noble metals. Clinker dissolves in hydrofluoric acid to produce corrosive silicon tetrafluoride gas. Clinker reacts with water to form silicates and calcium hydroxide. Silicates in clinker react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, managanese trifluoride, and oxygen difluoride.

10.3. Possibility of hazardous reactions

Clinkers 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, aluminium or other non-noble metals. Uncontrolled use of aluminium powder in wet clinker should be avoided as hydrogen is produced.

10.6. Hazardous decomposition products

Clinker will not decompose into any hazardous products.

11. TOXICOLOGICAL INFORMATION

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification. It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1.Information on Hazard Classes as Defined in Regulation (EC) No 1272/2008

Metabolism, toxicokinetics, mechanism of action and other information: Information not available.
Information on likely routes of exposure: Medical conditions aggravated by exposure
Inhaling clinker 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.
Contact of clinker with wet skin may cause skin thickening, cracks and irritation. In cases where prolonged contact and abrasion occur together, serious burns may occur.
Corneal damage may occur due to eye inflammation, irritation or mechanical stress as a result of direct contact with clinker. Exposure to large amounts of dry clinker or wet clinker splashes can cause effects ranging from eye irritation to chemical burns or blindness.
Exposure to wet clinker dust may lead to skin eczema due to irritation caused by high pH value after prolonged contact or due to the allergic effect of soluble chromium(VI) salts.
Exposure to clinker dust may cause irritation to the throat and respiratory tract. Exposure to clinker dust in amounts above the occupational exposure limit may cause cough and shortness of breath.
Clinker dust may cause progression of pre-existing respiratory system diseases such as asthma and emphysema, or skin and eye diseases.
Delayed and immediate effects as well as chronic effects from short and long-term exposure: Information not available
Interactive effects: Information not available
Acute Toxicity
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.

Acute toxicity- inhalation: No acute toxicity by inhalation observed. Based on available data, the classification criteria are not met.
Acute toxicity – oral: No indication of oral toxicity from studies with clinker dust. Based on available data, the classification criteria are not met.

Skin Corrosion / Irritation

Causes skin irritation.
Clinker in contact with wet skin may cause thickening, cracking or fissuring of the skin. Prolonged contact in combination with abrasion may cause severe burns.
Some individuals may develop eczema upon exposure to wet clinker dust caused by the high pH which induces irritant contact dermatitis after prolonged contact.

Serious Eye Damage / Irritation

Causes serious eye damage.
Portland cement clinker caused a mixed picture of corneal effects and the calculated irritation index was 128.
Direct contact with clinker may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact by larger amounts of dry clinker or splashes of wet clinker may cause effects ranging from moderate eye irritation (e.g. con- junctivitis or blepharitis) to chemical burns and blindness.

Respiratory or Skin Sensitisation

Sensitising for the skin.
Some individuals may develop eczema upon exposure to wet clinker dust, caused 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.
If the clinker contains a soluble Cr (VI) reducing agent and as long as the mentioned period of effectiveness of the chromate reduction is not exceeded, an allergic sensitising effect is not expected.

Germ Cell Mutagenicity

Does not meet the classification criteria for this hazard class.

Carcinogenicity

Does not meet the classification criteria for this hazard class.
No causal association has been established between Portland cement clinker exposure and cancer.
The epidemiological literature does not support the designation of Portland cement clinker as a suspected human carcinogen.
Portland cement clinker is not classifiable as a human carcinogen.
Based on available data, the classification criteria are not met.

Reproductive Toxicity

Does not meet the classification criteria for this hazard class.

STOT - Single Exposure

May cause respiratory irritation.
Clinker 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 clinker 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.

STOT - Repeated Exposure

Does not meet the classification criteria for this hazard class.
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.

Aspiration Hazard

Does not meet the classification criteria for this hazard class.

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.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Portland cement clinker is not hazardous for ecosystem. The addition of large amounts of Portland cement clinker 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 Portland cement clinker is an inorganic material. As a result of hydration of Portland cement clinker, toxicity is not emerge.

12.3. Bioaccumulative Potential

Not relevant as Portland cement clinker is an inorganic material. As a result of hydration of Portland cement clinker, toxicity is not emerge.

12.4. Mobility in Soil

Not relevant as Portland cement clinker is an inorganic material. As a result of hydration of Portland cement clinker, toxicity is not emerge.

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 ≥ than 0,1%.
Not relevant as clinker is an inorganic material. As a result of hydration of cement, toxicity is not emerge.

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

Not relevant.

13. DISPOSAL CONSIDERATIONS

Cement clinker may always be reused. Therefore waste treatment methods do not apply. Cement clinker should not be disposed to sewage or drainage systems, surface or ground water. Used packages and waste materials should be disposed according to national and local regulations.

14. TRANSPORT INFORMATION

Portland cement clinker is not classified as dangerous by Regulation on Carriage of Dangerous Goods by Road, Regulation on Carriage of Dangerous Goods by Seaway and the international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN Number 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.

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 1907/2006: Contained substance, Point: 75, Limestone

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 ≥ 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.
German regulation on the classification of substances hazardous to water (AwSV, vom 18. April 2017): WGK 1: Low hazard to waters

15.2. Chemical Safety Assessment

Since Portland cement clinker is exempt from the registration obligation according to REACH Annex 5 Article 10, chemical safety assessment is not carried out.

16. OTHER INFORMATION

16.1.Information Source

This Safety Data Sheet has been prepared based on provided information by supplier/manufacturer of this product and according to Annex II to REACH - Regulation 2020/878 and to Annex II to UK REACH

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

16.2.PROC – Process Categories

Appropriate engineering controls

Industrial manufacture/formulation of hydraulic building and construction materials: 2, 3, 5, 8b, 9, 14, 26,
Industrial uses of dry hydraulic building and construction materials (indoor, outdoor): 2, 5, 8b, 9, 14, 26
Industrial uses of wet suspension of hydraulic building and construc- tion materials: 2, 5, 8b, 9, 14
Professional use of dry hydraulic building and construction material (indoor, outdoor): 2, 5, 8b,9, 14, 26
Professional uses of wet suspensions of hydraulic building and construction materials: 2, 5, 8b, 9, 14
The table below gives an overview of all relevant identified uses of clinker or clinker containing hydraulic binders. All the uses have been grouped in these identified uses because of the specific conditions of exposure for human health and environment. For each specific use, a set of risk management measures or localised controls has been derived (see section 8) which need to be put in place by the user of clinker or clinker containing hydraulic binders to bring the exposure to an acceptable level.

PROC		Building and Construction Materials	
	Identified Uses - Use Description	Manufacture/ Formulation	Professional/ Industrial Use
2	Use in closed, continuous process with occasional controlled exposure, eg industrial or professional manufacture of hydraulic binders	X	X
3	Use in closed batch process, eg industrial or professional manufacture of ready-mix concrete	X	X
5	Mixing or blending in batch process for formulation of mixtures and articles, eg industrial or professional manu- facture of pre-cast concrete	X	X
8b	Transfer of substance or mixture from/to vessels/large containers a dedicated facilities, eg filling of silos, trucks or barges at cement plants	X	X
9	Transfer of substance or mixture into small containers, eg filling of cement bags in cement plants	X	X
14	Production of mixtures or articles by tabletting, compression extrusion, pelletisation, eg production of floor tiling	X	X
26	Handling of solid inorganic substances at ambient temperature, eg mixture of wet hydraulic binders	X	X

16.3.Abbreviations

1272/2008/EC: Regulation of the European Parliament and of the Council on Classification, Labelling and Packaging of Substances and Mixtures

ADR/RID: European Agreement Concerning the International Carriage of Dangerous Goods by Road/Railway

CAS: Chemical Abstracts Service

CLP: Regulation on Classification, Labelling and Packaging of Substances and Mixtures.

EC: European Commission

EINECS: European Inventory of Existing Commercial Chemical Substances

EWC: European Waste Catalogue

IATA: International Air Transport Association

IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk

IMDG: International Maritime Code for Dangerous Goods

IUPAC: The International Union of Pure and Applied Chemistry

mg / m³ : at 20^0C temperature and under 101,3 kPa (760 mm Hg) pressure miligram equivalent amount of substance in 1 m^3 of air.

PBT: Persistent, Bio-accumulative and Toxic

STOT: Specific Target Organ Toxicity

TWA/ZAOD: Time-weighed average

vPvB: Very Persistent, Very Bio-accumulative

WGK: Water hazard classes (German).

16.4.Key Literature References and Sources of Data

(1) Regulation (EC) 1907/2006 (REACH) of the European Parliament

(2) Regulation (EC) 1272/2008 (CLP) of the European Parliament

(3) Regulation (EU) 2020/878 (II Annex of REACH Regulation)

(4) Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament

(5) Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
(6) Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
(7) Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
(8) Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
(9) Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
(10) Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
(11) Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
(12) Regulation (EU) 2016/1179 (IX Atp. CLP)
(13) Regulation (EU) 2017/776 (X Atp. CLP)
(14) Regulation (EU) 2018/669 (XI Atp. CLP)
(15) Regulation (EU) 2019/521 (XII Atp. CLP)
(16) Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
(17) Regulation (EU) 2019/1148
(18) Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
(19) Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
(20) Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
(21) Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
(22) Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)
(23) Delegated Regulation (UE) 2023/707
(24) Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)
(25) Delegated Regulation (UE) 2023/1435 (XX Atp. CLP)
(26) The Merck Index. - 10th Edition
(27) Handling Chemical Safety
(28) INRS - Fiche Toxicologique (toxicological sheet)
(29) Patty - Industrial Hygiene and Toxicology
(30) N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
(31) IFA GESTIS Website
(32) ECHA Website
(33) Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

16.5.Training Advice

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

16.6.Revision

Prepared for the second time. This Safety Data Sheet has been prepared according to Annex II to REACH – Regulation 2020/878 and to Annex II to UK REACH.

16.7.Prepared by

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16.8.Additional Information

The Material Safety Data Sheet is prepared according to the information given by manufacturer and reliable literature references available on the date preparation. Although maximum effort expended for the accuracy of the information, the accuracy of information on this document is not guarenteed. The precautions and advices given in this document may not be applicable/sufficient to all individuals and/or cases. Using the product safely and following related laws/regulations is the responsibility of the user. Also, the manufacturer is not responsible from any damage and/or injury that might be a result of not following the precautions and/or advices given in this document.