Safety Data Sheet

In accordance with the Rulebook on the content of the safety data sheet- Official Gazette RS 11/2024

Date of preparation of the safety data sheet: 1.9.2024
Date from which the previous version of the safety data sheet is replaced: 1.12.2025
Version: 2

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

1.1 Product identifier

According to legislation of Republic Serbia:
Portland composite cement:
PC 20M(S-L) 42,5R
PC 35M(V-L) 42,5N LH
PC 50M(V-L) 42,5N
PC 35M(S-L-V) 42,5R

According to EU legislation:
Portland composite cement:
CEM II/A-M(S-L) 42,5R
CEM II/B-M(V-L) 42,5N
CEM II/C-M(V-L) 42,5N
CEM II/B-M (S-L-V) 42,5R

1.2 Relevant identified uses of the subsance or mixtures and uses advised against

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).

1.3 Details of the supplier of the safety data sheet

Company name: TITAN CEMENTARA KOSJERIĆ DOO
Full address: Živojina Mišića 50, 31260 Kosjerić
Telephone number: +381 31 590-303
E-mail address of competent person responsible for the SDS: keror@titan.rs

1.4 Emergency telephone number

Emergancy telephone number: +381 (0)31-590-420 (working days from 7 until 15h)
Poison Control Center: 011/3609640

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification of the substance is made in accordance with Regulation on classification, packing, marking and promoting of chemicals and certain products in accordance with globally harmonized system for classification and marking UN (”Official Gazette of RS”, No 105/2013, 52/2017).

Skin irritation, category 2, H315
Skin sensitization, category 1, H317

Serious eye damage, category 1, H318
Specific toxity for targeted organ- single exposure, category 3, H335

2.2 Label elements

Labelling of chemicals is made in accordance with Regulation on classification, packing, marking and promoting of chemicals and certain products in accordance with globally harmonized system for classification and marking UN ("Official Gazette of RS", No 105/2013, 52/2017).

Danger

H315 – Causes skin irritation
H317 - May cause alergic skin reactions
H318 – Causes serious eye damage
H335 – May cause respiratory irritation

P102 Keep out of reach of children
P280 Wear suitable protective clothing, gloves and eye/face protection
P305+P351+P388 IN CASE OF AN EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician
P302+P352 IN CASE OF SKIN CONTACT: Wash with plenty of water and soap
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P261 Avoid inhalation of dust/smoke/gas/fog/vapours/spray.
P304+P340 IF INHALED: Carry out injured person on fresh air and ensure to rest in a position which does not impede breathing
P333+P313 – If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations

2.3 Other hazards

The product does not contain components identified as PBT or vPvB in concentrations >0.1%.
The product does not contain substances of very high concern (SVHC) in concentrations >0.1%.
The product does not contain substances that may cause endocrine disruption.

The content of soluble Cr6+ is reduced by adding reducing agents to control the level of soluble Cr6+ below 2 mg/kg (0.0002%) of the total dry mass of cement ready for use – in accordance with legal regulations. The product may contain Cr6+, which, if placed on the market after the expiry date or after the reducing agent loses its effect, may cause an allergic reaction. The product delivered in bulk may contain soluble Cr6+, which, upon contact with skin, may cause an allergic reaction.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Information on substance ingredients

Not relevant.

3.2 Information on mixture ingredients

Substance	Conc. Range, %	CAS number	EC number	According to CLP/GHS
Portland cement clinker	50-88	65997-15-1	266-043-4	Serious eye damage 1, H318; Skin irritation 2, H315; Skin sens. 1, H317; TCOJ 3, H335

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 preparations.

Following contact with eyes
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). Contact a specialist of occupational medicine or an eye specialist.

Following skin contact
For dry cement, remove and rinse abundantly with water.
For wet/damp 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 dust (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 contact between cement dust and moist skin may cause irritation, dermatitis or burns.

***Inhalation*:** Repeated inhalation of cement dust over a long period of time increases the risk of developing lung diseases.
Swallowing: Do not swallow cement. Swallowing the small amount of cement does not have to be harmful, the introduction of large quantities may cause burns in mouth, throat and other digestive organs.

4.3 Indication of any immediate medical attention and special treatment needed

Clinical testing and medical monitoring of differed effects that chemicals can cause, antidote and contraindications: Not available.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Cement is not flammable. In cases of fire nearby the cement, take all necessary precautions against it. The usage of powder, CO2 and water is allowed.
Unfit materials for fire extinguishing: not available.

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 fire-fighters

Cement poses no fire-related hazards. Wear suitable protective clothing, gloves and eye/face protection, breathing apparatus.

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 Evironmental precautions

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

6.3 Methods and material for containment and cleaning up

In case of dispersion of portland cement, clean up the material and place it in a container. Use cleanup methodes which do not cause airborne dispersion of cement dust and contact with skin. Wear the appropriate personal protective equipment as described in Section 8. In case of setting of spilled material, scrape off and place it in a container.
Avoid entry of portland cement in sewage and drainage systems or into bodies of water.
If not contaminated by other materials, portland cement could be reused. Dispose of according to the local legislation.

6.4 Reference to other sections

See sections 8 and 13 for more details.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling of chemicals
Follow the recommendations as given under Subsection 8.2.
Measures to prevent spreading
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..

Measure to protect the environment

No particular measures.

Instructions on the general hygiene in the work place

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

Wash hands after use of materials.

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.

Cement in bags should be stored in a dry room, protected from moisture. If it has to be kept in the open, cement bags should be placed on the dry variety, properly covered to prevent atmospheric influences. In order to reduce soluble Cr^{6+} reducing agent is added. Upon the expiration date of the cement, it is possible to return it to the production where re-execution of the Cr^{6+} reduction can be done again in order to reuse material.

Do not use aluminum containers due to the incompatibility of the materials.

7.3 Specific end use(s)

In order to reduce dust accumulation during concrete mixing in open-end mixers, the order of adding of the chemicals is: Water first, then the product itself, mixing at low speed and with the minimum height.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

For cement dust the TLV (total inhalable dust) is:

5 mg/m^3 - for respirable dust

15 mg/m^3 - for total dust

For cement and cement mixtures defined TLV of soluble Cr(VI) can not be higher of 2mg/kg (0,0002%) calculated of the total mass of dry cement.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Measures to reduce the 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.

8.2.2 Individual protection measures such as personal protection equipment

General: Do not eat, drink or smoke when working with cement to avoid contact with skin or mouth. Remove contaminated clothing, footwear, watches, etc. and clean thoroughly before re-using them.

Eye/face protection

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

Skin protection

Use appropriate waterproof protecting gloves, clothing and shoes to protect the skin from direct contact with Portland cement. Do not use skin care products as a replacement for waterproof gloves. Remove contaminated clothing, protective equipment and clean thoroughly exposed skin with water.

Respiratory protection

When a person is potentially exposed to dust levels above exposure limits, use appropriate respiratory protection.

Thermal hazards

Not applicable.

Environmental Exposure Control

The control of environmental exposure for the emission of cement dust into the air must be in accordance with the available technologies and regulations for the emission of powdery substances.

No specific emission control measures are required for soil exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a	Physical state under standard conditions of pressure and temperature	Solid, powder form
b	odor	odourless
c	Odour threshold	no odour threshold, odourless
d	pH	(T = 20°C in water, water-solid ratio 1:2): 11-13.5
e	Melting point/freezing point	: not available
f	Initial boiling point and boiling range	Not applicable as under normal atmospheric conditions, melting point >1 250°C
g	Flash point	Not applicable as is not a liquid
h	Evaporation rate	Not applicable as is not a liquid
i	Flammability (solid, gas	Not applicable as is a solid which is non-combustible and does not cause or contribute to fire through friction
j	Upper/lower flammability or explosive limits	Not applicable as is not a flammable gas
k	Vapour pressure	Not applicable as melting point > 1250 °C
l	Vapour density	Not applicable as melting point > 1250 °C
m	Relative density	2.75-3.20; Apparent density - 0.9-1.5 g/cm³
n	Solubility(and) in water	not available
o	Partition coefficient: n-octanol/water	Not applicable as is inorganic substance
p	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)
q	Decomposition temperature	Not applicable as no organic peroxide present
r	Viscosity	Not applicable as not a liquid
s	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 causes damage to the surroundings. Not capable of self-sustaining exothermic chemical reaction.
t	Oxidising properties	Not applicable as does not cause or contribute to the combustion of other materials

9.2 Other information
Miscibility, conductivity, dissolution in oil, oxsido reduction potential: not applicable.

10. STABILITY AND REACTIVITY

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

10.2 Chemical stability
Cement 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 cement is alkaline and incompatible with acids, with ammonium salts, with aluminium or other non-noble metals. Cement dissolves in hydrofluoric acid to produce corrosive silicon tetrafluoride gas.

10.3 Possibility of hazardous reactions
Not applicable.

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
Cement will not decompose into any hazardous products.

11. TOXICOLOGICAL INFORMATION

11.1. Information regarding health hazard classes established by the regulation on classification, packaging, and labeling of chemicals
a) Acute toxicity: No data available
b) Skin corrosion/skin irritation: Causes skin irritation Cement in contact with moist skin may cause drying and cracking of the skin. In case of prolonged exposure and combined with its abrasive action, burns may occur. The cement used in the tests was Portland cement with more than 90% Portland cement clinker.
c) Serious eye damage/eye irritation: Causes serious eye damage Cement showed mixed effects on the cornea and the calculated irritation index was 128. Direct contact of cement with the cornea may cause mechanical injuries, immediate or delayed irritation, or eye inflammation. Direct contact with larger amounts of dry cement dust or splashing of wet cement may cause effects ranging from moderate eye irritation (e.g., conjunctivitis) to chemical burns and blindness.
d) Respiratory sensitization/skin sensitization: May cause allergic skin reactions In some individuals, exposure to wet cement may lead to eczema caused either by the high pH value leading to irritant contact dermatitis after prolonged exposure, or by an immune reaction to soluble Cr (VI), which causes allergic contact dermatitis.
e) Germ cell mutagenicity: Based on available data, the classification criteria are not met
f) Carcinogenicity: Based on available data, the classification criteria are not met
g) Reproductive toxicity: Based on available data, the classification criteria are not met
h) Specific target organ toxicity – single exposure: May cause respiratory tract irritation Cement dust may cause irritation of the throat and respiratory tract. After exposure to dust above occupational exposure limits, coughing, sneezing, and shallow breathing may occur. Evidence shows that workplace exposure to cement dust may cause impairment of respiratory function. However, available evidence at this time is insufficient to establish a dose-response relationship with sufficient confidence.

i) Specific target organ toxicity – repeated exposure: Based on available data, the classification criteria are not met
j) Aspiration hazard: Based on available data, the classification criteria are not met

11.2. Information on other hazards
The product does not contain substances that may cause endocrine disruption.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
The product is not hazardous to the environment.

12.2 Persistence and degradability
Not relevant as cement is an inorganic material. After hydration, cement lumps present no toxicity risks.

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

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

12.5 Results of PBT and vPvB asessment
Not relevant as cement is an inorganic material. After hydration, cement lumps present no toxicity risks.

12.6 Other adverse effects
Adding large amounts of cement to water, however, causes an increase in pH and can, under certain circumstances, be toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Treat the produced waste in the accordance with the applicable laws and regulations in waste management (Waste management Law (“Official Gazette of RS”, No 36/2009 and 88/2010)). Cement is treated as a waste material when it is contaminated with other materials, and if, as such, cannot still be used.

Do not dispose of into sewage systems or surface waters.
Product - unused residue or dry spillage
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” .

Product – slurries
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”.
Product - after addition of water, 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.

Dispose of the packaging in the same way as the product
Do not dispose of in sewage and the environment.
Regulation on Categories, Testing and Classification of Waste (Official Gazette of RS, No. 56/10, 93/19, 39/21)
10 13 14 Wastes from cement production — waste concrete and concrete sludge
17 01 01 Construction and demolition waste - concrete.
Packaging
Empty the packaging completely and handle it in accordance with the regulations of the Republic of Serbia.
15 01 01 paper and cardboard packaging.
15 01 05 Multi-layer (composite) packaging

14. TRANSPORT INFORMATION

Cement is not covered by the international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID); no classification is required.

14.1 UN 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 hazard
Not relevant.

14.6 Special precautions for user
Not relevant.

14.7 Transport in bulk
Not relevant.

15. REGULATORY INFORMATION

15.1. Regulations relating to safety, health, and the environment specific to the chemical:
Law on Chemicals (“Official Gazette of RS” No. 36/09, 88/10, 92/11, 93/12, and 25/15) Rulebook on the List of Classified Substances (“Official Gazette of RS” No. 88/25) Rulebook on Restrictions and Prohibitions of Production, Placing on the Market, and Use of Chemicals (“Official Gazette” No. 90/13, 25/15, 2/16, 44/17, 36/18, 9/20, 57/22, 29/24, 90/25)

Chromium (VI) compounds:

1. It is prohibited to place on the market and use cement and mixtures containing it if, after hydration (wetting), they contain more than 2 mg/kg or 0.0002% (m/m) of soluble chromium (VI), calculated on the total mass of dry cement.
2. If reducing agents are added to cement, before placing on the market, the packaging must visibly, legibly, and indelibly indicate: the date of packaging, storage conditions, and the period during which the reducing agent remains active in maintaining the concentration of chromium (VI) below the limit value specified in point 1.
3. Points 1 and 2 do not apply to the placing on the market and use of cement in controlled closed systems that are fully automated, without the possibility of contact of cement or mixtures containing cement with the skin.

Rulebook on Cement Quality (“Official Gazette of RS” No. 34/2013 and 44/2014) SRPS EN 197-1 Cement – Part 1: Composition, specifications, and conformity criteria for common cements

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

16. OTHER INFORMATION

16.1 Indication of changes
With this latest edition of the Safety Data Sheet, all previous editions are no longer valid.

Data evaluation methods used for mixture classification:
Calculation method

16.2 Abbrevations and acronyms

ADR/RID European agreements on the international transport of dangerous goods by road/rail
CAS Chemical Abstracts Service
CLP Classification, labelling and packaging (Regulation (EC) No 1272/2008)
EINECS European INventory of Existing Commercial chemical Substances
IATA International Air Transport Association
IMDG International agreement on the Maritime transport of Dangerous Goods
MDK Maximum allowed concentration
PBT Persistent, bio-accumulative and toxic
vPvB Highly persistent, highly bio-accumulative
w/w Weight by weight

16.3. List of hazard statements used in Chapters 2 and 3:

H-code: ''Hazard Statement Code''
H302 – Harmful if swallowed
H315 – Causes skin irritation
H317 – May cause an allergic skin reaction
H318 – Causes serious eye damage
H335 – May cause respiratory irritation

Hazard classes
Ak.toks- Acute toxicity
Skin irritation - Skin irritation
Eye damage - Eye damage
Skin Sensitization - Skin sensitization
Spec.tox.-JI - Specific toxicity for the target organ - single exposure

16.4 Key literature references and source of data

(1) Portland Cement Dust - Hazard assessment document EH75/7, UK Health and Safety Executive, 2006. Available from: http://www.hse.gov.uk/pubns/web/portlandcement.pdf.
(2) Observations on the effects of skin irritation caused by cement, Kietzman et al, Dermatosen, 47, 5, 184-189 (1999).
(3) 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.
(4) TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010.
(5) TNO report V8815/10, Evaluation of eye irritation potential of cement clinker W in vitro using the isolated chicken eye test, April 2010.
(6) European Commission's Scientific Committee on Toxicology, Ecotoxicology and the Environment (SCTEE) opinion of the risks to health from Cr (VI) in cement (European Commission, 2002).
http://ec.europa.eu/health/archive/ph_risk/committees/sct/documents/out158_en.pdf.
(7) Investigation of the cytotoxic and proinflammatory effects of cement dust in rat alveolar macrophages, Van Berlo et al, Chem. Res. Toxicol., 2009 Sept; 22(9):1548-58
(8) Cytotoxicity and genotoxicity of cement dusts in A549 human epithelial lung cells in vitro; Gminski et al, Abstract DGPT conference Mainz, 2008.
(9) ECHA (European Chemicals agency) website

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 SDS.

16.6 Disclaimer

The information in this safety data sheet is intended for anyone who uses, handles, sells or transports this product. The information contained herein is based on the current state of our knowledge and is subject to change, and may be used solely as a guideline for use.