

According to REACH regulation No 1907/2006/EC – REACH – Article 31 and Annex II

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

1.1. Identification of the substance/preparation

Portland cement **CEM I 52,5N LST EN 197-1**
CEM I 42,5R LST EN 197-1
CEM I 42,5N LST EN 197-1

1.2. Use of the substance/ preparation

Common cement is used as a hydraulic binder for the production of concrete, mortars, grouts, etc.

1.3. Company identification

Manufacturer: Akmenės cementas AB
 Address: J. Dalinkevičiaus str. 2,
 LT-85118 Naujoji Akmenė
 Telephone number: +370 425 58323
 Fax: +370 425 56198
 E-mail : cementas@cementas.lt
 Distributor: Cemeka UAB
 Address: J. Dalinkevičiaus str. 2,
 LT-85118 Naujoji Akmenė
 Telephone number: +370 425 56563
 Fax: +370 425 56564
 +370 5 230 6404

1.4. Emergency telephone

Poisoning control and information bureau
 Telephone number: +370 5 236 20 52
 Fax: +370 5 236 21 42
 E-mail: info@tox.lt

Emergency telephone number available outside office hours: Yes

2. HAZARD IDENTIFICATION

When cement reacts with water a strong alkaline solution is produced.

2.1. Hazard characterisation

Xi Irritant
 R 36/37/38 Irritating to eyes, respiratory system and skin
 R 43 May cause sensitisation by skin contact

2.2. Primary route(s) of entry

Inhalation: Yes
Skin-eyes: Yes
Ingestion: No, except in accidental cases

2.3. Human health

Cement is irritating to eyes, respiratory system and skin. Inhalation – may cause cough, sore throat; frequent inhalation of large quantities of cement dust over a long period of time increases the risk of developing lung diseases. Skin- may cause redness, dry skin; prolonged skin contact with wet cement or fresh concrete may cause serious burns, dermatitis. Product contains soluble chromium (VI) that may cause allergic reaction. Eye contact with cement may cause irritation, pain, corneal damage by mechanical stress. Ingestion – may cause burning sensation, abdominal pain.

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2.4. Environment

Under normal use, the product is not expected to be hazardous to the environment.

2.5. Further information

Not combustible and not flammable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS	EINECS	Name	Concentration range (by weight in cement)	Symbol (C&L)	R- phrases
65997-15-1	266-043-4	Portland cement clinker	95-100	Xi	R36/37/38 R43
-	-	Soluble chromium (VI)	0,001 ÷ 0,002	Xi	R43

4. FIRST AID MEASURES

4.1. After significant accidental inhalation

Move to fresh air. Get rest. Contact a physician if coughing or other symptoms persist.

4.2. After contact with eyes

Do not rub eyes as additional cornea damage is possible by mechanical stress. Remove any contact lenses and open the eyelid(s) widely to flush eye(s) immediately by thoroughly rinsing with plenty of clean water for at least 45 minutes to remove all particles. Contact a specialist of occupational medicine or an eye specialist.

4.3. After skin contact

For dry cement, remove and rinse abundantly with water. For wet cement, wash skin with water. Remove contaminated clothing, footwear, watches, etc. And clean thoroughly before re-using them. Seek medical treatment in all cases of irritation or burns.

4.4. After significant accidental ingestion

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

5. FIRE-FIGHTING MEASURES

5.1. Flashpoint and method

Cements are non-combustible and non-explosive and will not facilitate nor support combustion of other materials.

5.2. Suitable extinguishing media

All types of extinguishing media are suitable

5.3. Extinguishing media which shall not be used for safety reasons

None

5.4. Combustion products

None

5.5. Flammable limits

Not applicable

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

Avoid contact with skin and eyes, as well as dust development, wear personal protective equipment as described under Heading 8.

6.2 Environmental precautions

Do not wash cement down sewage and drainage systems or into bodies of water.

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6.3. Methods for cleaning up

Dry cement

Use dry cleanup methods that do not cause airborne dispersion, e.g. Vacuum cleaner (industrial portable units, equipped with high efficiency particulate filters (HEPA filters) or equivalent technique).

Wipe up the dust by mopping, wet brushing or by using water sprays or hoses (fine mist to avoid the dust becoming airborne) and remove slurry (see Wet cement).

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

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

Wet cement

Clean up wet cement and place in a container. Allow material to dry and solidify before disposal as described under Heading 13. It is not recommended to use swept cement if it is contaminated.

7. HANDLING AND STORAGE

7.1. Handling

For cement used in open-ended mixers: first add the water and then carefully add the cement. Keep the height of the fall low. Start the mixing smoothly.

7.2. Storage

Bulk cement should be stored in silos that are waterproof, dry, clean and protected from contamination. Humidity during storage may cause loss of product quality.

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

Incompatibilities with other materials: Reacts with acids

7.3. Control of soluble Cr (VI)

Cement for controlled closed and totally automated processes only – must not be in contact with human skin because it may contain above 0.0002 % soluble chromium (VI).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values – Hygiene Norm 23:2007:

Chemical substance	Occupational exposure limit value (as 8 h Time Weighted Average)	Remarks
	mg/m ³	
General dust:		
- inhalable	10	
- alveolar fraction	5	*

* See HN 23:2007 point 46.

8.2. Exposure controls

8.2.1. Occupational exposure controls

General: During work avoid kneeling in fresh mortar or concrete wherever possible. If kneeling is absolutely necessary then appropriate waterproof personal protective equipment must be worn. Do not eat, drink or smoke when working with cement to avoid contact with skin or mouth. Immediately after working with cement or cement-containing materials, workers should wash or shower or use skin moisturisers. Remove contaminated clothing, footwear, etc, and clean thoroughly before re-using them.

Respiratory protection: When a person is exposed to dust above exposure limits, use appropriate respiratory protection e.g. respirators with P2 filter.

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

Skin protection: Use impervious, abrasion and alkali resistant gloves, internally lined with cotton, boots, closed long-sleeved protective clothing as well as skin care products (including barrier creams) to protect the skin from prolonged contact with wet cement. Particular care should be taken to ensure that wet cement does not enter the boots. In some circumstances such as when laying concrete or screed, waterproof trousers or kneepads are necessary.

8.2.2. Environmental exposure controls

Use closed systems if possible. Otherwise, use general or local exhaust ventilation. Ensure dust concentration in work area lower than highest permissible. Do not wash cement down sewage and drainage systems or into bodies of water.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Dry cement is a finely ground inorganic material (odourless, grey powder).

9.2. Physical data

Mean particle size: 5-30 µm

Solubility in water (T=20°C): slight (0,1-1,5 g/l)

Density: 2,75 –3,20 g/cm³

Apparent density: 0,9-1,5 g/cm³

pH (T=20°C in water): 11-13,5

Boiling/melting point: > 1250°C

Vapour pressure, vapour density, evaporation rate, freezing point, viscosity, partition coefficient (n-octanol/water), oxidising properties, flammability: not relevant

10. STABILITY AND REACTIVITY

10.1. Stability

Dry cements are stable as long as they are stored properly (see Heading 7). When mixed with water, cements will harden into a stable mass that is not reactive to normal environments.

10.2. Conditions to avoid

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

10.3. Materials to avoid

Uncontrolled use of aluminium powder in wet cement should be avoided as hydrogen produced.

10.4. Hazardous decomposition products

Cements will not decompose into other hazardous by-products and do not polymerise.

11. TOXICOLOGICAL INFORMATION

11.1. Acute effects

Eye contact:

Direct contact with cement may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact by larger amounts of dry cement or splashes of wet cement may cause effects ranging from moderate eye irritation (e.g. conjunctivitis or Blepharitis) to chemical burns and blindness.

Skin contact: Dry cement in contact with wet skin or exposure to moist or wet cement may cause thickening, cracking or fissuring of the skin. Prolonged contact in combination with abrasion can cause severe burns.

Acute dermal toxicity: Limit test, rabbit, 24 hours contact, 2 000 mg/kg body weight – no lethality [Reference (4)].

Ingestion: Swallowing large quantities may cause irritation to the gastrointestinal tract.

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Inhalation: Cement may irritate the throat and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of occupational exposure limits.

11.2. Chronic effects

Inhalation: Chronic exposure to respirable dust in excess of occupational exposure limits may cause coughing, shortness of breath and may cause chronic obstructive lung disease.

Carcinogenicity: a causal association between cement exposure and cancer has not been established [Reference (5)].

Contact dermatitis/Sensitising effect:

Some individuals may exhibit eczema upon exposure to wet cement, caused either by the high pH which induces irritant contact dermatitis, or by an immunological reaction to soluble Cr (VI) which elicits allergic contact dermatitis [Reference (6)]. The response may appear in a variety of forms ranging from a mild rash to severe dermatitis. An exact diagnosis is often difficult to assess.

11.3. Medical conditions aggravated by exposure

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

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Cement is not expected to be hazardous to the environment. The addition of large amounts of cement to water may cause a rise in pH.

12.2. Mobility

Dry cement is not volatile but might become airborne during handling operations.

12.3 Persistence and degradability/ Bio accumulative potential/Results of PBT assessment/ Other adverse effect

Not relevant as cement is an inorganic material. After hardening, cement presents no toxicity risks.

13. DISPOSAL CONSIDERATIONS

13.1. Cement, that contains more than 0.0002% soluble Cr (VI)

Cement for controlled closed and totally automated processes only – must not be in contact with human skin because it may contain above 0.0002 % soluble chromium (VI)

13.2. Unused residue or dry spillage

Pick up dry. Mark the containers. Possibly reuse depending upon shelf life considerations. In case of disposal, harden with water and dispose according to 13.4.

13.3. Slurries

Allow to harden, avoid entry in sewage and drainage systems or into bodies of water and dispose of as indicated in 13.4.

13.4. Cement after addition of water, hardened

Dispose of according to the local legislation. Avoid entry into sewage water system. Dispose of the hardened product as concrete waste. Concrete waste is not a dangerous waste.

EWC entries: Cement waste (code 10 13 14 – waste concrete or concrete sludge) or construction and demolition waste (code 17 01 01 - concrete).

14. TRANSPORT INFORMATION

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

No special precautions are needed apart from those mentioned under Heading 8.

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15. REGULATORY INFORMATION

15.1. Classification and labelling of cement according to 1999/45/EC



Xi Irritant

R 36/37/38	Irritating to eyes, respiratory system and skin
R 43	May cause sensitisation by skin contact
S 2	Keep out of reach of children
S 22	Do not breath dust
S 24/25	Avoid contact with skin and eyes
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S46	If swallowed, seek medical advice immediately and show this container or label

15.2. The marketing and use of cement is subject to restriction on the content of soluble Cr (VI)

Cement for controlled closed and totally automated processes only – must not be in contact with human skin because it may contain above 0.0002 % soluble chromium (VI).

15.3. Legislation/requirements:

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directive 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

16. OTHER INFORMATION

Abbreviations:

CAS – Chemical Abstracts Service.

EINECS – European Inventory of Existing Chemical Substances.

References:

- (1) The European Cement Association CEMBUREAU
- (2) European Chemicals Bureau (ECB)
- (3) International Labour Organisation (ILO)
- (4) Observations on the effects of skin irritation caused by cement, Kietzman et al, *Dermatosen*, **47**, 5, 184-189 (1999)
- (5) Portland Cement Dust - Hazard assessment document EH75/7, UK Health and Safety Executive, 2006: <http://www.hse.gov.uk/pubns/web/portlandcement.pdf>
- (6) 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

The information on this data sheet reflects the currently available knowledge and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product, including the use of the product in combination with any other product or any other process, is the responsibility of the user. It is implicate that the user is responsible for determining appropriate safety measures and for applying the legislation covering his own activities.