

MATERIAL SAFETY DATA SHEET

Prepared in accordance with the Regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (Official Gazette dated 23.06.2017, No. 30105) and its amendments dated 23.12.2023.

Release Date: 27 January 2022
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1- IDENTIFICATION OF SUBSTANCE/ MIXTURE AND OF THE COMPANY**1.1. Identification of the substance/mixture**

Calcium Aluminate DURO / EN 14647

UFI Code: C830-J0WK-G00R-6FWY

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

Calcium Aluminate Duro is a premelted material used in mostly iron-steel industry to purify the steel and decrease the melting point with its Duroing properties.

1.3. Company Identification

Company Name : Çimsa Çimento San. Ve Tic. A.Ş.
Address : Toroslar Mah. Tekke Cad. Yeni Taşkent 33013 Mersin /TURKEY
Telephone Number : +90 (0) 324 454 00 60
Fax Number : +90 (0) 324 454 00 75
Internet Address : www.cimsa.com.tr
E-mail : cimsa@cimsa.com.tr

1.4. Emergency Telephone Number

ÇİMSA : +90 (0) 324 454 00 60

Emergency telephone number is also available outside office hours.

2- HAZARD IDENTIFICATION**2.1 Classification of the substance or mixture**

Physical hazards Not Classified

Health hazards Not Classified

Envioiremental Hazards Not Classified

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2.2 Label Elements

Pictogram

-

Signal Word: -

Hazard Statements

-

Precautionary Statements

Prevention

-

Response

-

2.3 Others hazards

Calcium Aluminate Duro does not contain any soluble chromium VI. The chromium content (VI) controlled in accordance with the standard EN 196-10 (below 2 ppm). Chrome reducing agents are not used.

Does not contain free crystalline silica.

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3- COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances: Calcium Aluminate Duro according to the EN 14647

3.2. Mixtures: -

Substances which present a health or environmental hazard:

Substance	CAS No	EC No	Concentration (%)	Hazard Class	Hazard statements
Calcium Aluminate Duro	65997-16-2	266-045-5	100	-	-

CE Number of Calcium Aluminate Duro: CPC-CLN-003-

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 calcium aluminate Duro or wet containing mixtures.

After significant accidental inhalation

Move 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.

After contact with eyes

Don't rub eye as additional cornea damage is possible as a result of 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 20 minutes to remove all particles. Contact a specialist of occupational medicine or an eye specialist.

After skin contact

Rinse abundantly 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.

After significant accidental ingestion

Do not induce vomiting. If 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.

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4.2. Most important symptoms and effects, both acute and delayed

Eyes : Eye contact with dry or wet may cause serious and potentially irreversible injuries.

Skin : Calcium aluminate Duro 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 calcium aluminate Duro, may cause serious burns because they develop without pain being felt (for example when kneeling in wet concrete even when wearing trousers).
For more details see Reference (1).

Inhalation : Repeated inhalation of dust of calcium aluminate Duro over a long period of time increases the risk of developing lung diseases.

Environment : Under normal use, calcium aluminate Duro 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.

5- FIREFIGHTING MEASURES

Calcium Aluminate Duro is not a flammable and explosive mixture.

5.1 Extinguishing media

All fire fighting methods are suitable.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advise for fire-fighters

Calcium aluminate Duro poses no fire-related hazards. No need for specialist protective equipment for fire fighters. All equipment used for fire fighting is valid.

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 heading 8 and follow the advice for safe handling and use given under heading 7.

6.1.2 For emergency responders

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

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dust levels.

6.2 Environment precautions

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

6.3 Methods and material for containment and cleaning up

Recover the spillage in a dry state if possible.

Dry calcium aluminate Duro:

Use dry cleanup methods that do not cause airborne dispersion, e.g. :

- Vacuum cleaner (Industrial portable units, equipped with high efficiency particulate filters (HEPA filter) or equivalent technique).
- Wipe-up the dust by mopping, wet brushing or by using water sprays or hoses (fine mist to avoid that the dust becomes airborne) and remove slurry.

If not possible, remove by slurring with water.

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 calcium aluminate Duro dust and contact with skin. Place spilled materials into a container. Solidify before disposal as described under heading 13.

Wet calcium aluminate Duro:

Clean up wet calcium aluminate Duro and place in a container. Allow material to dry and solidify before disposal as described in heading 13.

6.4. Reference to other sections

See sections 8 and 13 for more details.

7- HANDLING AND STORAGE

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

7.1 Precautions for safe handling

Follow the recommendations as given under heading 8.

Avoid dust development:

To clean up dry calcium aluminate Duro See heading 6.3. Carrying calcium aluminate Duro bags may cause sprains and strains to the back, arms, shoulders and legs. Handle with care and use appropriate control measures.

7.2 Conditions for safe storage

Bulk calcium aluminate Duro should be stored in silos that are waterproof, dry (internal condensation minimised), clean and protected from contamination.

To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other

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storage container or vessel that stores or contains calcium aluminate Duro without taking the proper security measures. Calcium aluminate Duro can build-up or adhere to the walls of a confined space. The calcium aluminate Duro can release, collapse or fall unexpectedly.

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

Bags should be stacked in a stable manner.

7.3 Specific end use(s)

Calcium aluminate Duro does not contain any soluble chromium VI. Chrome reducing agents are not used.

8- EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits.

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.

8.2.2 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 calcium aluminate Duro to avoid contact with skin or mouth.

Immediately after working with calcium aluminate Duro containing materials, workers should wash or shower or use skin moisturisers. Remove contaminated clothing, footwear, watches, etc. And clean thoroughly before re-using them.

Respiratory Protection: When a person is exposed to dust levels above exposure limits, use appropriate respiratory protection. It should be adapted to the dust level and conform to the relevant EN standart. Avoid creating airborne dust conditons. Local exhaust ventillation is preferred since it prevents release of contaminants in to the work area by controlling it at the source. If local or general ventillation is not adequate to control dust levels below exposure limits, use OES approved respirators.



Eye Protection: Wear approved glasses or safety goggles according to EN 166 when handling dry or wet calcium aluminate Duro to prevent contact with eyes.

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Skin Protection: Use impervious, abrasion and alkali resistant gloves (made of low soluble Cr(VI) containing material) 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 calcium aluminate Duro. Particular care should be taken to ensure that wet calcium aluminate Duro does not enter the boots.

In some circumstances, such as when laying concrete or screed, waterproof trousers or kneepads are necessary.



Thermal hazards

Not applicable.

8.2.3 Enviromental exposure controls

Air : Environmental exposure control for the emission of calcium aluminate Duro 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 calcium aluminate Duro into sewage systems or into bodies of water, to avoid high pH. Above pH 9 negative ecotoxicological impacts are possible.

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

9- PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

(a) **Appearance:** Calcium aluminate Duro is a solid cream coloured granule with a maximum size of 40mm and has a particle size distribution between 0-35 mm

(b) **Odour:** Odourless

(c) **Odour threshold:** Odourless

(d) **pH:** (T = 20°C in water, water-solid ratio 1:2): 10-11

(e) **Melting point:** > 1350 °C

(f) **Initial boiling point and boiling range:** Not applicable

(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

(j) **Upper/lower flammability or explosive limits:** Not applicable as is not a flammable gas

(k) **Vapour pressure:** Not applicable.

(l) **Vapour density:** Not applicable.

(m) **Relative density:** 3,20-3,30; **Apparent density:** 1,55 -1,75 g/cm³

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- (n) **Solubility(ies) in water (T = 20 °C):** slight (0.1-1.5 g/l)
(o) **Partition coefficient: n-octanol/water:** Not applicable as is inorganic mixture
(p) **Auto-ignition temperature:** Not applicable
(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 capable of a 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

Not applicable.

10- STABILITY AND REACTIVITY**10.1 Reactivity**

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

10.2 Chemical stability

Dry calcium aluminate Duro are stable as long as they are stored properly (see Heading 7).

10.3 Possibility of hazardous reactions

Calcium aluminate Duro don't cause hazardous reactions.

10.4 Conditions to avoid

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

10.5 Incompatible materials

Uncontrolled use of aluminium powder in wet calcium aluminate Duro should be avoided as hydrogen is produced.

10.6 Hazardous decomposition products

Calcium aluminate Duro will not decompose into other hazardous products and do not polymerise.

11- TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

- a) **Acute Toxicity:** Not applicable.
b) **Skin corrosion / irritation:** Dry calcium aluminate Duro in contact with wet skin or exposure to moist

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may cause thickening, cracking or fissuring of the skin. Prolonged contact in combination with abrasion can cause severe burns.

c) **Eye Damage/ irritation:** Direct contact with calcium aluminate Duro may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact by larger amounts of dry calcium aluminate Duro or splashes of wet Duro may cause effects ranging from moderate eye irritation (e.g. conjunctivitis or blepharitis) to chemical burns and blindness.

d) **Respiratory / skin sensitisation:** Calcium aluminate Duro dust may irritate the throat and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of occupational exposure limits.

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

Some individuals may exhibit eczema upon exposure to wet calcium aluminate Duro, caused either by the high pH which induces irritant contact dermatitis [Reference (4)]. The response may appear in a variety of forms ranging from a mild rash to severe dermatitis and is a combination of those two mechanisms. An exact diagnosis is often difficult to assess.

Swallowing large quantities may cause irritation to the gastrointestinal tract.

e) **Mutagenicity:** Not applicable.

f) **Carcinogenicity:** Not applicable.

g) **Toxic for reproduction:** Not applicable.

h) **Specific target organ toxicity (single exposure):** Not applicable.

i) **Specific target organ toxicity (repeated exposure):** Not applicable.

j) **Aspiration hazard:** Not applicable.

12- ECOLOGICAL INFORMATION

12.1 Toxicity

The product is not expected to be hazardous to the environment (LC50 aquatic toxicity not determined). The addition of large amounts of calcium aluminate Duro 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 applicable.

12.3 Bioaccumulative potential

Not applicable.

12.4 Mobility in soil

Not applicable.

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

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Not applicable.

13- DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Do not dispose of into sewage systems or surface waters.

Product- Calcium aluminate Duro that has exceeded its shelf life

EWC entry: 10 13 99 (wastes not otherwise specified)

Shall not be used/sold other than for use in controlled closed and totally automated processes or should be recycled or disposed of according to local legislation.

Product-unused residue or dry spillage

EWC entry: 10 13 06 (Other particulates and dust)

Pick up dry. 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 indicated in "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.

EWC entries: 10 13 14 or 17 01 01 (construction and demolition wastes-concrete).

Packaging

Completely empty the packaging and process it according to local legislation.

EWC entries: 15 01 01(waste paper and cardboard packaging).

14- TRANSPORT INFORMATION

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

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

14.1. UN number

Not relevant

14.2. UN proper shipping name

Not relevant

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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. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not relevant

15- REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

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) (as amended).

15.2 Chemical Safety Assessment

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

16- OTHER INFORMATION

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Abbreviations:

- IMDG : International Maritime Dangerous Goods
- IATA : International Air transport Association
- ADR/RID : Agreement on the transport of dangerous goods by road/Regulations on the international transport of dangerous goods by rail
- LC50 : Lethal Concentration where 50% of the test animals dies.
- VPvB : Very persistent, very bio-accumulative
- PBT : Persistent, bio-accumulative and toxic
- EWC : European Waste Catalogue
- REACH : Registration, Evaluation and Authorisation of Chemicals

References:

- (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) 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).
- (4) 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,



Calcium Aluminate DURO

EN 14647

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including the use of product in combination with any other product or any other process, is the responsibility of the user. It is implicit that the user is responsible for determining appropriate safety measures and for applying the legislation covering his/her own activities.

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