



## Material Safety Data Sheet (MSDS) according to Regulation (EC) No. 1907/2006

Halfen GmbH – Liebigstraße 14 – 40764 Langenfeld

Trade name: HALFEN HLB Mix grout

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### 1. Identification of the substance/mixture and of the company/undertaking

#### Identification of the substance or mixture

HALFEN HLB Mix grout

#### Application of substance

Grout

#### Manufacturer / Supplier

Halfen GmbH

Liebigstraße 14

D-40764 Langenfeld

Internet: [www.halfen.com](http://www.halfen.com)

Informing department:

Tel.: +49 (0)2173 / 970-0

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Emergency telephone number: Germany, Giftnotfallzentrale Mainz: +49 - 6131 / 19240 (24 h)  
United Kingdom: +44 870 600 626 / 0870 600 6266

### 2. Hazards identification

#### Classification

Indications of danger: Xi - Irritant

R phrases:

Irritating to respiratory system and skin. Risk of serious damage to eyes.

May cause sensitization by skin contact.

GHS: Hazard categories:

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Dam. 1

Respiratory/skin sensitization: Skin Sens. 1

Specific target organ toxicity - single exposure: STOT SE 3

Hazard Statements: Causes skin irritation.

May cause an allergic skin reaction. Causes serious eye damage.

May cause respiratory irritation.

#### Explication of special hazards for human health and environment

As a result of the irritant properties of this product, repeated skin contact may adversely affect an existing dermatitis condition (or other existing skin condition).

The product contains chromate reducer, which results in a content of water-soluble chrome (VI) of less than 0.0002 %. In case of improper storage (moisture ingress) or storage exceeding the recommended storage time, however, the contained chromate reducer may lose its effect prematurely and a sensitising effect of the cement/binder can occur upon skin contact (R43 and/or H317 and EUH203).

### 3. Composition/information on ingredients

#### Chemical characterization ( Mixture )

Preparation / mixture of mineral binders, aggregates and additives

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**Hazardous components**

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
266-043-4	Portland cement	30 - 99 %
65997-15-1	Xi - Irritant R37/38-41-43	
	Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, STOT SE 3; H315 H318 H317 H335	
270-659-9	Portlandcement, Flue dust	0 - 5 %
68475-76-3	Xi - Irritant R37/38-41-43	
	Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1, STOT SE 3; H315 H318 H317 H335	
01-2119486767-17		

Full text of R-, H- and EUH-phrases: see section 16.

**Further Information**

The preparation is low in chromium. The content of soluble chromium (VI) compounds has been lowered with agent to below 2 ppm in the cement portion. Proper storage and compliance with the expiration date is a prerequisite for the effectiveness of the chromate reduction.

**4. First aid measures**

**General information**

If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance. If unconscious, place the person in the recovery position and seek medical advice immediately. Never give anything by mouth to an unconscious person. Protection is needed for the First Aider.

**After inhalation**

Fresh air supply. Upon irritation of the respiratory tract or mucous membranes (e.g. coughing), indisposition or prolonged exposure, consult a doctor.

Oxygen, if needed. Lay the affected person down, and keep her or him warm and calm. Large quantities: Call a physician immediately.

**After contact with skin**

Remove adhering matter immediately. Before washing use a dry brush to remove dust from skin. Wash contaminated skin areas thoroughly with soap and water. Rinse well with water. Take off contaminated clothing and shoes immediately. Remove and wash contaminated clothing before re-use. If skin irritation persists, call a physician.

No rings, watches or similar things should be worn. Product residues can remain and, therefore, can trigger skin reactions.

**After contact with eyes**

Rinse with plenty of water immediately, also under the eyelids, for at least 15 minutes. Remove contact lenses, if applicable. Keep eye wide open while rinsing. Do not rub eyes dry, because the mechanical stress can cause additional corneal injury. Consult an ophthalmologist immediately. Protect unharmed eye.

**After ingestion**

Do not induce vomiting. Rinse mouth. Liquid spit out! Drink 1 or 2 glasses of water. Call a physician immediately.

Lay the affected person down, and keep her or him warm and calm.

**Advice to doctor**

Symptomatic treatment (decontamination and vital functions).

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### 5. Fire-fighting measures

#### Suitable extinguishing media

The product is not flammable. Use extinguishing measures that are appropriate to the environment.

#### Extinguishing media which must not be used for safety reasons

High volume water jet.

#### Special exposure hazards arising from substance or mixture itself, combustion products, resulting gases

The product itself does not burn.

#### Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

#### Additional information

Prevent extinguishing water used by the fire department, or any other forms of the diluted product, from ending up in surface water or drinking water reservoirs. Contaminated extinguishing water and soil must be disposed of in accordance with official regulations.

### 6. Accidental release measures

#### Personal precautions

Do not breathe dust. Use personal protective equipment. When handling the product, follow hygiene and safety precautions. Protect leaked material with tarpaulins to prevent it blowing away. (See section 7.)

#### 6.2. Environmental precautions

Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

Avoid subsoil penetration.

Contact the responsible authority immediately if the product ends up in the soil, a body of water, or the sewer system.

#### Methods for cleaning up/taking up

- Mop up whilst dry. Use approved industrial vacuum cleaner for removal. (EPA / HEPA - filter, EN 1822 -1:2009)

Avoid dust formation. Use breathing apparatus. or

- Moisten and remove. Allow to solidify, use mechanical handling equipment. Dispose of as described in section 13.

#### Additional information

See section 8.

### 7. Handling and storage

#### Handling

##### Advice on safe handling

Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or take snuff at work. Keep away from food and drink. Do not allow product to come in contact with humid air before use.

For bagged goods and when using open mixing containers, first fill with water, then carefully add the dry cement. Maintain low drop height. Start stirrer slowly.

##### Advice on protection against fire and explosion

No special protective measures against fire required.

##### Further information on handling

When handling the product, follow hygiene and safety precautions. Handle, store and transport in compliance with local regulations and in labelled containers that are suitable for this product. When using do not eat or drink.

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## Storage

### Requirements for storage rooms and vessels

See information supplied by the manufacturer. Store only in the original container. Never allow product to come in contact with water during storage. Keep in a dry, cool place. Protect from contamination. Protect from humid air and water. Use only clean equipment.

### Further information on storage conditions

When not in use, the product must be stored in its original transport packing. Store product upright. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Proper storage and compliance with the expiration date is a prerequisite for the effectiveness of the chromate reduction.

Storage class (D): 10-13

### Specific use(s)/replacement product(s)

No data available.

## 8. Exposure controls/personal protection

### Exposure limit values

#### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
65997-15-1	Portland cement, respirable dust	-	4	-	TWA (8 h) STEL (15 min)	WEL WEL

### 8.2. Exposure controls

#### Occupational exposure controls

When the concentration in the air is over the maximum occupational exposure limit, an approved respiratory protection apparatus must be worn. In case of dust release use dust mask. Provide for appropriate exhaust ventilation and dust collection at machinery.

Literary reference (3) MEASE

#### Protective and hygiene measures

Avoid contact with skin and eyes.

Remove and wash contaminated clothing before re-use. Do not eat, drink, smoke or take snuff at work.

Wash hands before breaks and at the end of the workday. Shower or bathe at the end of working.

#### Respiratory protection

effective dust mask EN149, EN140, EN14387, EN1827 (Respirator with FFP1 or FFP2 filter).

In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.

#### Hand protection

Protective gloves, chemical-resistant. The manufacturer recommends the following glove materials: nitril-impregnated cotton gloves with CE Mark. Safety gloves should be selected for the actual conditions of use and in accordance with the instructions for use provided by the manufacturer. Use tested protective gloves.

Protective gloves should be replaced immediately if damaged or in case of signs of wear.

Please note that the daily use of a chemical glove in practice may be considerably shorter than the permeation time calculated in EN 374 as a result of many different factors (for example temperature).

Gloves made of the following materials are not suitable: leather gloves.

Wear gloves only with clean hands. Wash and dry one's hands after use of gloves. Preventive skin protection by skin protection cream.

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**Eye protection**

In case of risk of splashing, wear protective glasses. Tightly fitting safety goggles (EN 166).

**Skin protection**

Wear suitable protective clothing. Protect from water.

Impervious clothing, long sleeved clothing / closed work clothing, safety shoes / boots. Take off all contaminated clothing immediately.

Avoid contact of powder with neck and wrists due to possible skin irritation and / or dermatitis. No rings, watches or similar things should be worn. Product residues can remain and, therefore, can trigger skin reactions.

**Environmental exposure controls**

Should not be released into the environment. The official regulations are to be followed.

Product can be supplied in accordance with local authority requirements a biological treatment plant.

Water: Do not let the cement/binder get in the ground water or the waste water system. Exposure may result in an increase of the pH-value. Ecotoxic effects can occur at a pH-value of over 9.

**9. Physical and chemical properties**

**General information**

Physical state: powder  
Colour: grey / white  
Odour: odourless

**Important health, safety and environmental information**

Test method

pH-Value (at 20 °C): 11,0 - 13,5\*

**Changes in the physical state**

Melting point: > 1250 °C

Initial boiling point and boiling range: n.a.

Flash point: n.a.

**Flammability**

Solid: n.a.

Gas: n.a.

**Explosive properties**

The product is not explosive.

Lower explosion limits: n.a.

Upper explosion limits: n.a.

Ignition temperature: n.a.

Vapour pressure: n.a.

Density: 2,75 - 3,2 g/cm<sup>3</sup>

Water solubility:  
(at 20 °C) 0,1 - 1,5 g/L

Partition coefficient: n.a.

Viscosity / dynamic: n.a.

Viscosity / kinematic: n.a.

Evaporation rate: n.a.

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## 9.2. Other information

### Auto-ignition temperature

Solid: n.a.  
Gas: n.a.

\*pH (solid - water 2:1)

## 10. Stability and reactivity

### 10.4. Conditions to avoid

Stable at normal conditions.  
Protect from humid air and water.

### Materials to avoid

acids, aluminium, ammonium salts  
Corrodes base metals.

### 10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

### Further information

Never allow product to come in contact with water during storage.

## 11. Toxicological information

### Acute toxicity

No data is available on the product itself.

Long term exposure to concentrations over the maximum occupational exposure limit can lead to health problems. Product dust may be irritating to eyes, skin and respiratory system. Risk of infection of the lung after prolonged inhalation of dust particles. These may irritate eyes, nose and throat. Dust causes irritation to the eyes, skin and mucous membranes and may lead to toxic lung oedemas.

Swallowing large amounts can be detrimental to health. Ingestion causes irritation of upper respiratory system and gastrointestinal disturbance.

Toxicity after skin contact:

LD50/dermal/rabbit:2000mg/kg (24 h) (4)

### Irritation and corrosivity

The product causes irritation of eyes, skin and mucous membranes.

After eye contact:

Irritating to eyes. Resin particles, like other inert materials, are mechanically irritating to eyes. At high concentrations product causes severe inflammation of conjunctiva and cornea. May cause irreversible eye damage. Danger of blindness.

After skin contact:

Repeated or prolonged exposure

Product can cause local skin irritation especially in skin folds or when wearing of tight clothing. May cause: redness. May cause skin irritation and/or dermatitis.

In some individuals, eczema can form after contact with wet cement.

Literary reference (4, 11,12)

### Sensitising effects

The eczema is triggered either by the pH value (irritative contact dermatitis) or by immunological reactions with water-soluble chromium (VI) compounds (allergic contact dermatitis). (Literary reference 1, 5, 13)

### Severe effects after repeated or prolonged exposure

Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Repeated or continued skin contact can cause skin changes. This preparation is a skin irritant, and repeated contact can intensify the irritant effect. Repeated or prolonged contact causes sensitization,

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asthma and eczemas. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

**Carcinogenic/mutagenic/toxic effects for reproduction**

No data is available on the product itself.

Literary reference (1, 14, 15, 16)

**Empirical data on effects on humans**

When mixed with water, the product may produce serious eye for individuals and skin damage in case of extended contact. Mechanical skin stress at the same time is able to intensify such effects.

**12. Ecological information**

**Ecotoxicity**

Sight acute toxicity. – Daphnia magna (U.S. EPA, 1994a) (7); Algae (Selenastrum capricornutum) (U.S. EPA, 1993) (8).

The products is not considered to be hazardous to water organisms.

Aquatic toxicity:

Lager amounts: A possible toxic effect on aquatic life cannot be ruled out as a result of the change in pH value.

If the product is release it is primarily adsorbed by sediments and soil.

**Mobility**

Not applicable.

**12.2. Persistence and degradability**

Not applicable.

**12.3. Bio accumulative potential**

Not applicable.

**12.5. Results of PBT and vPvB assessment**

Not applicable.

**12.6. Other adverse effects**

None known.

**Further information**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Avoid subsoil penetration.

**13. Disposal considerations**

**Advice on disposal**

Hardened material : Disposal in accordance with the official regulations.

Do not flush into surface water or sanitary sewer system.

Waste from residues

Unhardened material - Mop up whilst dry. Mop up avoiding dust formation and proceed as set out in the Waste Law.

**Waste disposal number of waste from residues/unused products**

170101 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES); concrete, bricks, tiles and ceramics;  
concrete

**Waste disposal number of used product**

101314 WASTES FROM THERMAL PROCESSES; wastes from manufacture of cement, lime and plaster and articles and products made from them; waste concrete and concrete sludge

**Waste disposal number of contaminated packaging**

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150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances classified as hazardous waste

**Contaminated packaging**

Empty containers must be completely drained to the state of the art before being disposed of. Dispose according to the local regulations. After use recycling.

**14. Transport information**

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**Land transport (ADR/RID)**

**Other applicable information (land transport)**

Not classified as dangerous regarding transport regulations.

**Inland waterways transport (ADN)**

**Other applicable information (inland waterways transport)**

Not classified as dangerous regarding transport regulations.

**Marine transport (IMDG)**

**Other applicable information (marine transport)**

Not classified as dangerous regarding transport regulations.

**Air transport (ICAO)**

**Other applicable information (air transport)**

Not classified as dangerous regarding transport regulations.

**15. Regulatory information**

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**GHS labelling**

Signal word:

Danger

Pictograms:

corrosion; exclamation mark



**Hazard statements**

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

**Precautionary statements**

P102	Keep out of reach of children.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



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P310	Immediately call a POISON CENTER/doctor.
P261	Avoid breathing dust.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P501	Disposal in accordance with the official regulations.

### EU regulatory information

#### Additional information

No Substances of Very High Concern (SVHC) according REACH Article 57. Observe: : Directive 1907/2006 (REACH) ANNEX XVII, 47

In the scope of the "European Agreement on Workers Health Protection through the Good Handling and Use of Crystalline Silica and Products containing it (NePSi)", cement manufacturers undertook to introduce so-called "good practices" for safe handling (<http://www.nepsi.eu/good-practice-guide.aspx>).

#### National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

### 16. Other information

#### Relevant R-phrases (Number and full text)

- 37/38 Irritating to respiratory system and skin.
- 41 Risk of serious damage to eyes.
- 43 May cause sensitization by skin contact.

#### Relevant H- and EUH-phrases (Number and full text)

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

#### Further Information

The information is based on present levels of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.  
The product is to be used exclusively for the applications named in the technical data sheet or in the processing instructions.  
The receiver of our product is singularly responsible for adhering to existing laws and regulations.

#### Literary reference

- (1) Portland Cement Dust - Hazard assessment document EH75/7, UK Health and Safety Executive, 2006:  
<http://www.hse.gov.uk/pubns/web/portlandcement.pdf>.
  - (2) Technische Regel für Gefahrstoffe „Arbeitsplatzgrenzwerte“, 2009, GMBI Nr.29 S.605.
  - (3) MEASE 1.02.01 Exposure assessment tool for metals and inorganic substances, EBRC Consulting GmbH für Eurometaux, 2010: <http://www.ebrc.de/ebrc/ebrc-mease.php>.
  - (4) Observations on the effects of skin irritation caused by cement, Kietzman et al, Dermatosen, 47, 5, 184-189 (1999).
  - (5) Epidemiological assessment of the occurrence of allergic dermatitis in workers in the construction industry related to the content of Cr (VI) in cement, NIOH, Page 11, 2003.
  - (6) U.S. EPA, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 3rd ed. EPA/600/7-91/002, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1994a).
  - (7) U.S. EPA, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 4th ed. EPA/600/4-90/027F, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1993).
  - (8) Environmental Impact of Construction and Repair Materials on Surface and Ground Waters.
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Summary of Methodology, Laboratory Results, and Model Development. NCHRP report 448, National Academy Press, Washington, D.C., 2001.

(9) Final report Sediment Phase Toxicity Test Results with Corophium volutator for Portland clinker prepared for Norcem A.S. by AnalyCen Ecotox AS, 2007.

(10) TNO report V8801/02, An acute (4-hour) inhalation toxicity study with Portland Cement Clinker CLP/GHS 03-2010-fine in rats, August 2010.

(11) TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010.

(12) TNO report V8815/10, Evaluation of eye irritation potential of cement clinker W in vitro using the isolated chicken eye test, April 2010.

(13) European Commission's Scientific Committee on Toxicology, Ecotoxicology and the Environment (SCTEE) opinion of the risks to health from Cr (VI) in cement (Europäische Kommission, 2002):

[http://ec.europa.eu/health/archive/ph\\_risk/committees/sct/documents/out158\\_en.pdf](http://ec.europa.eu/health/archive/ph_risk/committees/sct/documents/out158_en.pdf).

(14) Investigation of the cytotoxic and proinflammatory effects of cement dusts in rat alveolar macrophages, Van Berlo et al, Chem. Res. Toxicol., 2009 Sept; 22(9):1548-58

(15) Cytotoxicity and genotoxicity of cement dusts in A549 human epithelial lung cells in vitro; Gminski et al, Abstract DGPT conference Mainz, 2008.

(16) Comments on a recommendation from the American Conference of governmental industrial Hygienists to change the threshold limit value for Portland cement, Patrick A. Hessel and John F. Gamble, EpiLung Consulting, June 2008.

(17) Prospective monitoring of exposure and lung function among cement workers, Interim report of the study after the data collection of Phase I-II 2006-2010, H. Notø, H. Kjuus, M. Skogstad and K.-C. Nordby, National Institute of Occupational Health, Oslo, Norway, March 2010.

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

n.a. = not applicable

n.d. = not determined

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*

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