PRODUCT SAFETY DATA SHEET

This generic SDS is provided by MGS Ltd to give information to assist with material handling of the products listed which are conforming to Regulation (EC) 1907/2006 and Regulation (EC) 453/2010

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SECTION 1: Identification of the substance / mixture and of the company / undertaking	
1.1 Product Identifier	
Product Name:	**Bentonite Cement Grout Mix 2 to 1**
Synonyms / Trade Name:	Bentonite / Portland Cement
1.2 Relevant identified uses of the substance or mixture and uses advised against	
Recommended Use:	Can be mixed with ballast, sand, and gravel for concreting or together with Bentonite for grouting
Restriction on Use:	For industrial purposes only
1.3 Details of the supplier of the Safety Data Sheet	
Name:	MGS Ltd
Address:	Rougham Industrial Estate, Bury St Edmunds, IP30 9ND
Country:	UK
Phone N°:	+44 1359 271167
E-mail:	info@mgs.co.uk
Website:	www.mgs.co.uk
1.4 Emergency telephone number	
Emergency telephone at the company	+44 7738 197 517
Available outside office hours:	Yes
Language of the phone service:	English
E-mail of competent person responsible	darren.portway@mgs.co.uk
National contact:	Darren Portway

SECTION 2: Hazard Identification

2.1 Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 (CLP)

Hazard Class	Hazard Category	Hazard Statements
Skin irritation	2	H315- Causes skin irritation
Serious eye damage / eye irritation	1	H318: Causes serious eye damage
Skin sensitization	1B	H317: May cause an allergic skin reaction
Specific target organ toxicity (single exposure)	3	H335: May cause respiratory irritation

2.2 Label elements

According to Directive (CE) 1272/2008 (CLP)



Signal word: Danger

Precautionary Statements	
P102	Keep out of reach of children
P280	Wear protective gloves/protective clothing/eye protection/face protection
P501	Dispose of contents/container to a suitable point waste collection
P305+P351+P338+P310	**If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
P302+P352+P333+P313	**If on skin:** Wash with plenty of soap and water. If skin irritation or rash occurs, Get medical advice/attention.
P261+P304+P340+P312	Avoid breathing dust/fume/gas/mist/vapours/spray. **If inhaled:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Supplementary information

Skin contact with wet cement, fresh concrete or mortar may cause irritation, dermatitis, or burns. May cause damage to products made of aluminium or other non-noble metals.

The cement contains, when required, reducing agents for chromium (VI), which determines a content of soluble chromium (VI) below 0,0002%, verified according to normative UNE EN 196-10:2008 to guarantee the legislation specified in European Directive 2003/53/EC, transcribed to OM PRE/1954/2004, and Regulation (EC) No 552/2009 of 22 June 2009 amending the Regulation (EC) no 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and restrictions of chemicals (REACH) as regards Annex XVII

Bags/delivery documents will contain the packaging date, storage conditions and storage period appropriate to keeping soluble chromium VI below **0.0002%** where a reducing agent is used.

2.3 Other hazards

This product may generate dust during handling and use. This product may contain quartz (crystalline silica). Long term overexposure to crystalline silica dust may cause silicosis.

Cement does not meet the criteria for PBT or vPvB in accordance with Annex XIII or REACH (Regulation (EC) No 1907/2006).

Cement is either naturally low in soluble chromium VI or reducing agents have been added to control to control the levels of sensitizing soluble chromium (VI) to below 2 mg/kg (0,0002%) of the total dry weight of the cement ready for use according to legislation specified under Section 15.

SECTION 3: Composition / Information on Ingredients

3.1 Substances

Bentonite is not listed as a dangerous substance in the Annex 1 of Directive 67/548/EEC as amended, not listed in Annex VI or Regulation (EC) 1272/2008. It is also an exemption from the obligation to register in compliance with Annex V of Regulation (EC) 1907/2006.

3.2 Mixtures

Bentonite

- CAS **1302-78-9**
- EC **215-108-5**
- quartz impurity **0–1%**.

Cement

- Portland cement clinker CAS **65997-15-1**, concentration in the cement **5–100%**
- flue dust CAS **68475-76-3**, concentration in cement **0–5%**
- associated H315/H317/H318/H335 classifications.

SECTION 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.

Eye Contact:	Do not rub eyes in-order-to avoid possible cornea damage as a result of mechanical stress. Remove contact lenses if any. Incline head to injured eye, open the eyelid(s) 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 injured eye. If possible, use eyewash from sterile containers. If irritation continues seek medical help.
Skin Contact:	For dry product, remove and rinse abundantly with water. For wet cement, wash skin with plenty of water. Remove contaminating clothing, footwear, watches, etc. and clean thoroughly before re-using them. Seek medical attention in all cases of irritation or burns.
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.
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 help or contact a POISON centre.

4.2 Most important symptoms and effects, both acute and delayed

Eye Contact:	Eye contact with this product (dry or wet) may cause serious and potentially irreversible injuries.
Skin Contact:	This product 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 may cause irritation and contact sensitization.
Inhalation:	Repeated inhalation of dust over a long period of time increases the risk of developing lung diseases.
Ingestion:	Ingestion of this product may cause gastrointestinal irritation including, nausea and vomiting, abdominal pain, diarrhea and chemical burns to the mouth, throat, esophagus and stomach lining.

4.3 Indication of any immediate medical attention and special treatment needed

When contacting a physician, take this Safety Data Sheet with you.

SECTION 5: Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media:
Appropriate to the surrounding fire.

Unsuitable extinguishing media:
For safety reasons do not use full water jet.

5.2 Special hazards arising from the substance or mixture

This product is non-combustible and non-explosive and will not facilitate or sustain the combustion of other materials.

5.3 Advice for fire fighters

This product poses no fire-related hazards. No need for protective equipment for fire fighters.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment, and emergency procedures

For non-emergency personnel: Avoid dust formation. Avoid breathing dust and contact with eyes. Wear protective equipment as described under Section 8 and follow the advice for safe handling and use given under Section 7.

For emergency personnel: Emergency procedures not required. However, respiratory protection is needed in Situations with high dust level.

6.2 Environmental precautions

Do not discharge into any drains, surface waters or groundwaters.

6.3 Methods and material for containment and cleaning up

Collect the spillage in a dry state if possible:

Dry: Use clean-up methods such as vacuum clean-up or vacuum extraction (industrial portable units, equipped with high efficiency air filters (EPA and HEPA, UNE-EN 1822-1:2010) or equivalent Technique). Never use compressed air.

Alternatively, wipe up the dust 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 slurrying with water (see wet below).

Wet: Clean up wet materials and place in an appropriate container. Allow material to dry and solidify before disposal as described under Section 13.

Avoid inhalation of product and contact with skin. Place spilled materials in a container. Solidify before disposal as described under Section 13.

6.4 Reference to other sections

None.

SECTION 7: Handling & Storage

7.1 Precautions for safe handling

Follow the recommendations given under Section 8. To clean up dry cement, see Sub Section 6.3 Measures to prevent fire – not applicable

Measure to prevent aerosol and dust generation – Do not sweep. Use dry clean-up methods such as vacuum clean-up
and vacuum extraction, which do not cause airborne dispersion.

For more information consult the "guide of good practices" adopted by the European Social Dialogue Agreement " Agreement on the protection of worker's health for the proper handling and proper use of crystalline silica and products containing it by European trade unions and business associations, among them Cembureau.
These recommendations can be found on safe handling http://www.nepsi.eu/good-practice-guide.aspx

7.2 Conditions for safe storage, including any incompatibilities

Store in dry area
Keep away from incompatible materials (see Section 2.2)
Do not handle or store near food, beverages, and smoking materials.
To be stored in tightly sealed and preferably full containers in a cool, dry, and ventilated area See Section 8.2.2 for personal protective equipment to be worn.

Engulfment danger – this product can build-up or adhere to the walls of a confined space. It 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 this product without taking the proper security measures.

Packed product should be stored in un-opened bags clear of the ground in cool, dry conditions and protected from excessive draught in order to avoid degeneration of quality. Bags should be stacked in a stable manner. Do not use aluminium containers due to incompatibility of the materials.

7.3 Specific end use(s)

Can be mixed with ballast, sand, and gravel for concreting or together with Bentonite for grouting.

SECTION 8: Exposure Controls / Personal Protection

8.1 Control parameters

This product has no specific Occupational Exposure Limit (OEL). Respect regulatory provisions for dust (inhalable and respirable).

Cement

Name-Limit Value	Type of Limit Value	Value (at 8 h TWA)	Units
Portland Cement	VLA-ED Respirable faction	4	mg/m^3
Portland cement	VLA-ED Inhalable faction	10	mg/m^3

Bentonite

Name	CAS No.	Country	Limit value	ppm	mg/m^3
Quartz (SiO2)	14808-60-7	European Union [1]	Eight hours		0,1
			Short term		
		United Kingdom [2]	Eight hours		0,1
			Short term		
			Short term		

8.2 Exposure controls

8.2.1. Appropriate Engineering Controls

During work avoid kneeling in fresh product wherever possible. If kneeling is absolutely necessary, then appropriate waterproof personal protective equipment must be worn (waterproof knee). Do not eat, drink, or smoke when working with this product to avoid contact with skin or mouth. Immediately after working with this product, workers should wash or shower or use skin moisturisers. Remove contaminated clothing (footwear, watches etc) and clean thoroughly before reusing them.

8.2.2. Individual protection measures, such as personal protective equipment

Eye Contact Face Protection:	Wear approved glasses or safety goggles according to EN standard when handling dry or wet product to prevent contact with eyes.	
Skin Protection:	Use impervious abrasion and alkali resistant gloves, boots, closed long sleeved protective clothing as well as skin care products (including barrier creams to protect the skin from prolonged contact with wet product. Particular care should be taken to ensure the wet product does not enter the boots. In some circumstances, such as when laying the product, waterproof trousers or kneepads are necessary.	
Respiratory Protection:	When a person is potentially exposed to dust levels above exposure limits, use appropriate protection. The type of respiratory protection should be P2.	

Thermal Hazards:
Not applicable.

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

Water:
Do not pour this product or sewage systems or surface water systems to avoid raising The pH. A pH greater than 9 may cause adverse ecotoxicological impacts.
No special emission control measures are necessary for the exposure to the terrestrial environment.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Properties	Bentonite	Cement
Appearance	Cream to grey powder	Grey or white powder
Odour	Odourless	Odourless
pH	10.5 ± 0.5	Basic in between 11 y 13,5
Melting point	Not applicable	> 1250^{o}C
Boiling point	Not applicable	Not applicable
Flash point	Not applicable	Not applicable
Evaporation rate	Not applicable	Not applicable
Flammability (solid, gas)	Not applicable	Not applicable
Upper/lower flammability or exposure limits	Not applicable	No information available
Lower and upper explosive (flammable) limits	Not applicable	Not applicable
Vapor pressure at 20^{o}C	Not applicable	Not applicable
Vapor density	Not applicable	Not applicable
Relative density	2.7	2.75 – 3.20
Solubility(ies)	Insoluble in water	Insoluble in water
Partition coefficient: n-octanol/water	Not applicable	Not applicable
Auto-ignition temperature	Not applicable	Not applicable
Decomposition temperature	Not applicable	Not applicable
Viscosity	Not applicable	Not applicable
Explosive properties	Not applicable	Not applicable
Oxidising properties	Not applicable	Not applicable

9.2 Other information

None.

SECTION 10: Stability and Reactivity

10.1 Reactivity

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

10.2 Chemical stability

This product is stable in normal circumstances as long as it is properly stored, and it is compatible with most other building materials. They should be kept dry. Contact with incompatible materials should be avoided.

Wet cement is alkaline and incompatible with acids, with ammonium salts, with aluminium and other non-stable metals. Cement dissolves in hydrofluoric acid to produce corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates in cement react with Powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride and oxygen difluoride.

10.3 Possibility of hazardous reactions

This product will 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 product should be avoided as hydrogen is produced.

10.6 Hazardous decomposition products

Will not de-compose into any hazardous products.

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

CEMENT

Hazard class	Cat	Effect	Reference
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.	(2)
Acute toxicity – Inhalation	-	No acute toxicity by inhalation observed. Based on available data, the classification criteria are not met.	(9)
Acute toxicity – oral	-	No indication of oral toxicity from studies with cement kiln dust. Based on available data, the classification criteria are not met.	Literature Survey
Skin corrosion/irritation	2	Cement in contact with wet skin may cause thickening, cracking, or fissuring of the skin. Prolonged contact in combination with abrasion may cause severe burns.	(2) Human Experience
Serious eye damage/irritation	1	Portland cement clinker caused a mixed picture of corneal effects, and the calculated irritation index was 128. Common cements contain varying quantities of Portland cement clinker, fly ash, blast furnace slag, gypsum, natural pozzolans, burnt shale, silica fume and limestone. 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 (for example conjunctivitis or blepharitis) to chemical burns and blindness.	(10), (11)
Skin sensitization	1	Some individuals develop eczema upon exposure to wet cement dust, caused either by the high pH which induces irritant contact dermatitis after prolonged contact, or 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 and is a combination of the two above mentioned mechanisms. If the cement contains a soluble Cr (VI) reducing agent and as long as the mentioned period of effectiveness of the chromate reduction is not exceeded, a sensitizing effect is not expected (Reference 3).	(3), (4)
Respiratory Sensitization	-	There is no indication of sensitization of the respiratory system. Based on available data, the classification criteria are not met.	(1)
Germ cell Mutagenity	-	No indication. Based on available data, the classification criteria are not met.	(12), (13)

Hazard class	Cat	Effect	Reference
Carcinogenicity	-	No casual association has been established between Portland cement exposure and cancer. The epidemiological literature does not support the designation of Portland cement as a suspected human carcinogen. Portland cement is not classifiable as a human carcinogen (according to ACGIH A4: Agents that cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity that are sufficient to classify the agent with one of the other notations). Based on available data, the classification criteria are not met.	(1) (14)
Reproductive Toxicity	-	Based on available data, the classification criteria are not met.	No evidence from human experience
STOT – single Exposure	3	Cement 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 cement 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.	(1)
STOT- repeated Exposure	-	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.	(15)
Aspiration hazard	-	Not applicable as cements are not used in an aerosol.	

BENTONITE		
Hazard Class	**Effect**	**Reference**
Acute Toxicity	May cause eye irritation if exposed to large amounts of dust Skin irritation may result from physical contact Inhalation of high concentrations may cause irritation.	
Chronical Toxicity	This product may contain quartz (crystalline silica). In 1997, IARC concluded that the respirable fraction of crystalline silica inhaled from occupational sources can cause lung cancer in humans. However, ii pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated In June 2003, the EU Scientific Commille on Occupational Exposure Limits (SCOEL) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis. Therefore, preventing the onset of silicosis will also reduce the cancer risk. ".	(IARC Monographs, Vol 68). (SCOEL SUM Doc 94-final, July 2003)
Other relevant information	No mutagenic, teratogenic, or developmental toxicity effects are known. There is body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis. Worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits.	

11.2 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.

SECTION 12: Ecological Information

12.1 Toxicity

The product is not hazardous to the environment. Ecotoxicological test with Portland cement on Daphnia magna (Reference (5)) and Selenastrum coli (Reference (6)) have shown little toxicological impact. Therefore, LC50 and EC50 values could not be determined (Reference (7)). There is no indication of sediment phase toxicity (Reference (8)). The addition of large amounts of cement to water may, however, cause a rise in pH and may, therefore, be toxic to aquatic life under certain circumstances. Bentonite – no specific adverse effects are known.

12.2 Persistence and degradability

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

12.3 Bio accumulative potential

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

12.4 Mobility in soil

Not relevant as cement is an inorganic material. After hardening, cement presents no toxicity risks. Bentonite – No information available.

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

Avoid contamination of soil, groundwater, and surface water.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

Do not dispose of into sewage systems or surface waters.

Product – cement with a chrome reducer that has exceed its efficiency period (and when demonstrated that it contains more than 0,0002% soluble Cr(VI)): EWC entries: 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 or treated again with a reducing agent.

Product – unused residue or dry spillage
EWC entries: 10 13 06 (particles and dust)

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 (for example streams) and dispose of as explained below under "Product – after addition of water, hardened".

Product – after addition of water, hardened
EWC entries: 10 13 14 (waste from manufacturing of cement – waste concrete or concrete sludge) or 17 01 01 (construction and demolition wastes – concrete).

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 inertization, concrete waste is not a dangerous waste.

Packaging
EWC entry: 15 01 01 or 15 01 05 (waste paper and cardboard packaging). Completely empty the packaging and process it according to local legislation.

SECTION 14: Transportation Information

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 hazards

Do not let enter into watercourses or drains.

14.6 Special precaution for user

None.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant.

SECTION 15: Regulatory Information

15.1 Safety, health, and environmental regulations / legislation specific for the substance or mixture

Cement is a mixture according to REACH and is not subject to registration. Cement clinker is exempt from registration (Art. 2.7 (b) and Annex V.10 of REACH).

The marketing and use of cement is subject to a restriction on the content of soluble Cr (IV) (REACH Annex XVII point 47 Chromium VI compounds and Orden PRE/1954/20042):

1. "Cement and cement containing mixtures shall not be placed on the market, or used, if they contain, when hydrated, more than 2 mg/kg (0,0002%) soluble chromium VI of the total dry weight of the cement."

2. "If reducing agents are used, then without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of cement or cement-containing mixtures is visibly, legibly and indelibly marked with information on the packing date, as well as on the storage conditions and the storage period appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium VI below the limit indicated in paragraph 1."

3. "By way of derogation, paragraphs 1 and 2 shall not apply to the placing on the market for, and use in, controlled closed and totally automated processes in which cement and cement-containing mixtures are handled solely by machines and in which there is no possibility of contact with the skin."

15.2 Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other Information

This product is a mixture containing bentonite and Portland cement. Hazard classification and precautionary information are provided in Section 2.

Key literature references and sources 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	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
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.

5	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) and 4th ed. EPA-821- R-02-013, US EPA, office of water, Washington D.C. (2002).
6	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). and 5th ed. EPA-821-R-02-012, US EPA, office of water, Washington D.C. (2002).
7	Environmental Impact of Construction and Repair Materials on Surface and Ground Waters. Summary of Methodology, Laboratory Results, and Model Development. NCHRP report 448, National Academy Press, Washington, D.C., 2001.
8	Final report Sediment Phase Toxicity Test Results with Corophium volutator for Portland clinker prepared for Norcem A.S. by AnalyCen Ecotox AS, 2007.
9	TNO report V8801/02, An acute (4-hour) inhalation toxicity study with Portland Cement Clinker CLP/GHS 03-2010-fi ne in rats, July 2010 – unaudited draft approved.
10	TNO report V8815/09, Evaluation of eye irritation potential of cement clinker G in vitro using the isolated chicken eye test, April 2010.
11	TNO report V8815/10, Evaluation of eye irritation potential of cement clinker W in vitro using the isolated chicken eye test, April 2010.
12	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.
13	Cytotoxicity and genotoxicity of cement dusts in A549 human epithelial lung cells in vitro; Gminski et al, Abstract DGPT conference Mainz, 2008.
14	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.
15	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, Hilde Notø, Helge Kjuus, Marit Skogstad and Karl-Christian Nordby, National Institute of Occupational Health, Oslo, Norway, March 2010.
16	MEASE, Metals estimation and assessment of substance exposure, EBRC Consulting GmbH for Eurometaux, http://www.ebrc.de/ ebrc/ebrc-mease.php.
17	Occurrence of allergic contact dermatitis caused by chromium in cement. A review of epidemiological investigations, Kåre Lenvik, Helge Kjuus, NIOH, Oslo, December 2011.

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