





Baunit DS 26 Flex

Safety Data Sheet

As per Directive (EU) no.1907/2006 as well as (EU) no. 453/2010

Revised on: 27/11/2014

1.1	Product Identifier	
1.0	Identification of the material or the mixture and the company	
	Commercial name:	Baunit DS 26 Flex
1.2	Relevant identified applications of the material or mixture and applications which are not recommended	
	Use of the material/mixture:	Dry powder mortar to be mixed with water to produce a universal and flexible sealer and crack bridging sealing layer. Do not use in any other way.
1.3	Details on the supplier which provides the safety data sheet	
	Manufacturer:	Baunit GmbH Reckenberg 12 D-87541 Bad Hindelang Tel. + 49 8324 921 1025 Fax + 49 8324 921 1029 eMail:(responsible Person): sdb@baunit.de
1.4	Emergency telephone number:	
		Poison information centre, Mainz +49 6131 19240

2.0	Possible hazards	
2.1	Classification of the material/mixture:	
	As per (EU) Directive no. 1272/2008	
	Hazard class and category:	Severe eye damage, Hazard category 1 Severe skin irritation, Hazard category 2 Specific target organ toxicity (single exposure), Hazard category 3
	Hazard advice:	
	H315	Causes skin irritation.
	H318	Causes severe eye damage.
	H335	Can cause irritation to airways.
2.1.2	As per 1999/45/EU Directive	
	Classification:	Xi, irritant.
	R 37/38	Irritates breathing organs and skin.
	R 41	Danger of severe eye damage.
2.2	Identification elements	
	As per (EU) Directive no. 1272/2008	
	Hazard pictogram:	 GHS07  GHS05
	Signal word:	Hazard

Hazard information:	
H315:	Causes skin irritation.
H318:	Causes severe eye damage.
H335:	Can irritate airways.
Safety information:	
P102	Keep away from children
P261	Avoid inhalation of dust.
P271	Only use outside or in well ventilated spaces.
P280	Wear protective gloves/clothing/eye & face protection.
P305+P351+P338+P310	IF EYE CONTACT: Wash well with water. Remove any contact lenses and wash again. Seek immediate medical advice or contact Poison information centre.
P302+P352+P332+P340	IF SKIN CONTACT: Wash with soap and water. If skin reaction, seek medical help.
P362	Remove contaminated clothing and wash before wearing again.
P501	Dispose of contents/container as per national waste disposal guidelines.
Additional information:	Store for a maximum of 6 months from manufacturing date in a dry place. Chromate poor.
2.3	Other hazards:
	<p>Dust from the dry mixture can irritate airways. There is increased risk of lung infection with repeated inhalation of larger quantities of dust. The product produces a strong alkaline reaction when moist. With longer contact with wet product (e.g kneeling in wet mortar), serious skin conditions can be caused.</p> <p>The mixture is chromate poor, due to the content of sensitizing chrome(VI) is reduced to under 0,0002% in the cement part of the product through addition of additives. So there is no danger of sensitivities from chromate. The product should be stored in a dry place and not exceed its maximum storage time to ensure the effectiveness of this chromate reduction.</p>
	Results of PBT and vPvB assessment:
	The criteria for identification of persistent, bio-accumulative and toxic materials (PBT) and very persistent and bio-accumulative materials (vPvB) as per Appendix XIII of directive (EU) No. 1907/2006 were not fulfilled.

3.0	Compound/Information about components								
3.1	Materials:	Not applicable as this product is a mixture (see section 3.2).							
3.2	Mixtures:	Mixture of chromate-poor cement as per RL 2003/53/EU, aggregates and additives.							
Table of hazardous contents:									
	Designation	EU-No.	CAS-No.	Registered number (REACH)	Content [M.-%]	Classified as per RL 67/548/EWG		Classified as per directive (EU) No. 1272/2008	
	Portland cement clinker	266-043-4	65997-15-1	Not applicable	>20	Xi irritant	R37/38 R41 R43	Skin Irrit. 2 Eye Dam. 1 STOT SE 3 Skin Sens. 1	H315 H318 H335 H317
For wording of H- and R-clauses, see section 16.									

4.0	First aid measures	
4.1	Description of first aid measures	
	General instructions:	First aiders do not require any special personal protective equipment. They should however avoid contact with the wet mortar.
	Inhaling:	Remove dust source and ensure the affected person is taken outside into fresh air. Seek medical advice if feeling unwell or coughing or continued reaction.
	Skin contact:	Wash the affected area of skin and remove the rest of the product. Remove wet gloves, clothing, shoes, watches etc. and wash well before wearing again. If skin complaints persist, seek medical advice.

	Eye contact:	Do not rub eyes dry, as this can cause additional eye damage. Remove any contact lenses and wash eyes in running water for a further 20 minutes to remove any particles. If necessary, use isotonic eye wash (eg. 0,9% NaCl) Seek medical advice.
	Swallowing:	If conscious, wash mouth out and drink plenty of water. Do not Induce vomiting. Seek immediate medical advice.
4.2	Most important acute or delayed symptoms and effects	
	Eyes:	Eye contact with dry or wet product can cause serious and possibly permanent damage.
	Skin:	Even in its dry state, the product can cause irritation if in longer contact with moist skin (eg through sweating or air humidity). Contact with moist hands can cause skin irritation, dermatitis or other serious skin complaints.
	Additional advice:	Cement can worsen any existing eye, skin or breathing complaints, e.g. asthma, emphysema.
4.3	Information on emergency help or special handling:	
		If seeking medical advice, take safety data sheet with you.

5.0	Firefighting measures	
5.1	Suitable extinguishing media:	The mixture is not flammable, whether in its delivered or mixed state. Base extinguishing material and firefighting on the flammability of surroundings.
5.2	Special hazards from the mixture:	None. The product is neither explosive nor flammable and has no flammable effect on other materials.
5.3	Instructions for firefighting:	No special firefighting measures required. Do not allow extinguishing water to enter the water system. Cool any containers near the fire with water.

6.0	Measures for unintended release	
6.1	Personal precautionary measures:	
6.1.1	Staff not trained for emergencies:	Wear protective equipment as under section 8. Avoid build-up of dust and ensure good ventilation. Safe handling is as per section 7. Emergency plans are not required.
6.1.2	Deployment Forces:	If exposed to high levels of dust, wear protective equipment as per section 8.2.2.
6.2	Environmental protection measures:	Keep mixture dry and cover to reduce dust build-up. Do not allow to enter the water system or surface water or ground water (pH-Wert increase). If rivers, lakes or sewers are contaminated, inform the relevant local authorities.
6.3	Cleaning procedures:	Stop dropped material from drifting with scaffold nets and, if possible, use again. Note the wind direction and keep the height when working with product (e.g. with a shovel) to a minimum. To clean use an industrial vacuum cleaner that meets dust class M (DIN EN 60335-2-69). Do not sweep dry. Never use air pressure to clean. If dry cleaning is used to remove dust, always wear personal protective equipment. Avoid inhalation of dust or contact with eyes or skin. Leave leftover mixed mortar to dry and dispose of (see section 13.1).
6.4	Reference to other sections:	Check Sections 8 and 13 for further details.

7.0	Handling and storage	
7.1	Protective measures for safe handling:	Do not eat, drink or smoke in work areas. Avoid dust build up. When using bagged products and open mixers, first add water and then the dry product.

		<p>Keep pouring height to a minimum and slowly stir. Do not compress empty bags together. Avoid contact with eyes and skin by wearing personal protective equipment as per section 8.2.2. Ensure well ventilated and otherwise wear breathing apparatus as per section 8.2.2. Do not kneel in wet mortar.</p> <p>Dust build-up can be reduced with machine application (eg render machine or mixer) by carefully opening and emptying bags as well as wearing protective clothing. Do not use product if it has exceeded its storage date, as the effect of reducing agents eases up and the soluble chrome(VI) content can exceed the limit values as given in section 2.3. In such cases, if longer contact, allergic chromate dermatitis can be caused due to the soluble chromate in the material.</p> <p>With containers over 10 kg: Use mechanical help to lift and carry containers.</p>
7.2	Conditions for safe storage in regards to incompatibility:	<p>Keep dry and not with acids and foods. Avoid contact with water and moisture. Always store in original container. The effect of chromate reducers could be released if not stored correctly (entry of moisture) or exceeding the maximum storage time (see section 7.1).</p>
7.3	Specific end uses:	<p>This product is assigned to GISCODE ZP 1 (cementitious products, chromate poor) (see sections 15). Read GISCODE ZOP 1 for further information on safe handling, regulations and protective measures. It is part of the Hazard information system for building www.gisbau.de. Further advice on safe handling as per § 6 paragraph 7 of directive for protection from hazardous goods (Gefahrstoffverordnung – GefStoffV).</p>

8.0	Limitation and monitoring exposure / personal protective equipment							
8.1	Parameters to monitor:							
	Components to be monitored with work place limit values	CAS-No.	Type of assessment value	Assessment value [mg/m ³]	Highest limit [mg/m ³]	Origin	Monitoring method	
	General dust limit value	Not applicable	AGW	8h	1,25 (A) 10 (E)	2 (II) (15min) 2,5(A) 20 (E)	TRGS 900 ¹	TRGS 402
	A = respirable dust fraction E = inhalable dust fraction		TMW = daily average Mow = instantaneous value		KZW = short-term exposure a) frequency per shift			
8.2	Limitation and monitoring exposure:							
8.2.1	Additional instructions to structure technical equipment:	Use closed systems (e.g. silos), local dust extraction or other technical equipment, e.g. render machines or mixers with special dust collector attachments to reduce dust build up.						
8.2.2	General protective and hygiene measures:	<p>Do not eat, drink or smoke when working. Wash hands and face before breaks and when work is finished, and possibly shower. Avoid touching eyes or skin. Use skin lotion. Remove wet gloves, clothing, shoes, watch etc. and wash well before wearing again.</p> <p>General information on use of protective clothing can be found in rule BGR 189.</p>						
	Skin Protection:	<p>Wear abrasion and alkali resistant safety gloves with CE-marking. Leather Gloves are not suitable as not waterproof and can release chromate.</p> <p>Research has shown that nitrile soaked woollen gloves (thickness ca 0.15 mm).</p> <p>Can be used for a period of 480 minutes and offer protection. Change any wet gloves. Have replacement gloves ready. General information on use of protective gloves can be found under rule BGR 195. Wear long sleeved protective clothing and protective shoes. If contact with fresh mortar cannot be avoided, clothing should also be waterproof. Ensure that no fresh mortar drops into shoes or boots.</p> <p>Take note of the skin protection plan. Treat skin after work has finished.</p>						

	Face / eye protection:	Wear close fitting safety glasses if there is dust build up or danger of spray (EN 166) and have eye wash nearby. General information on use of eye/face protection can be found in rule BGR 192.
	Respiratory protection:	If there is a danger of exceeding the exposure limits, e.g. open handling with the dry powder product, then a protective face mask should be worn. Mix and transfer dry mortar in open systems, eg. Manual mixing, tipping contents of bag into render machine etc: ensure working limits are adhered to through effective dust measures or local dust extraction. If this is not possible, wear particle filtering half masks of type FFP2 (tested to EN 149). Manual application of ready-to-use mortar: No face/mouth protection required. Machine application of mortar: No face/mouth protection required. General information on how to protect face/mouth can be found in rule BGR/GUV Rule 190. Employees working with the product should be trained how to use and advised that PPE is necessary.
8.2.3	Limitation and monitoring environmental exposure:	
	Avoid release into the environment. Use leftovers or dispose of as per regulations.	
	Air:	Stick to dust emission limits as per technical guidance on how to keep air clean.
	Water:	Do not allow product to enter waterways as pH value can increase. Ecological toxicological effects can occur with a pH value higher than 9. Adhere to sewer and ground water regulations.
	Soil:	Adhere to soil protection regulation(BBodSchG) and (BBodSchV). No special control measures are required.

9.0	Physical and chemical properties	
9.1	General Information:	
a)	Appearance:	Solid
	Aggregate status:	Powdery, Grainy
	Colour:	Grey
b)	Odour	None
c)	Odour threshold	Not applicable
d)	pH level	at 20 °C, ready to use when mixed with water: 11,5-13,5
e)	Melting point:	Not applicable
f)	Boiling point, boiling range:	Not applicable
g)	Flashpoint:	Not applicable
	Explosion hazard:	None
h)	Vapour speed:	Not determined
i)	Flammability:	Not applicable as the mixture is non-flammable
j)	Upper/lower flammability or explosion limits:	Not applicable
k)	Vapour pressure:	Not determined
l)	Vapour density:	Not determined
m)	Relative density:	Not applicable
n)	Bulk density:	1100-1400 kg/m ³ (20 °C)
o)	Solubility in water:	Slight
p)	Distribution coefficient n-octanol/water:	Not applicable
q)	Self-ignition temperature:	Not applicable
r)	Decomposition temperature	Not applicable

s)	Viscosity	Not determined
t)	Explosive properties:	Non-explosive
u)	Oxidising properties	Non-oxidising
9.2	Other information:	None

10.0 Stability and reactivity		
10.1	Reactivity:	Alkaline in water. A deliberate reaction takes place in contact with water: the product hardens and builds a mass that does not react.
10.2	Chemical stability:	The product is stable when stored correctly and dry.
10.3	Possible hazardous reactions:	No hazardous reactions (see section 10.5).
10.4	Conditions to avoid:	Avoid water and moisture when stored (the mixture produces an alkali reaction when moist and hardens).
10.5	Incompatible materials:	Is exothermic with acids: the wet product produces an alkaline reaction and reacts with acids, ammonium salts and ignoble metals such as aluminium, zinc, copper. Hydrogen is produced when in contact with ignoble metals.
10.6	Hazardous decomposition products:	No known hazardous decomposition products for the mixture.
All information assumes use as intended		

11.0 Toxicological information			
Toxicity		The mixture was not toxicologically tested. The data on toxicological effects is the result of relevant data for cement, Portland cement (normal cement) and Portland cement clinker and it has the same toxicological and ecotoxicological properties.	
Hazard class	Cat	Effects	Reference
Acute toxicity - dermal	--	Limit Test, rabbits, 24 hour exposure, 2000 mg/kg body weight – no lethality. [Reference (4)]. Based upon the available data, the classification criteria was not fulfilled.	
Acute toxicity - inhaled	--	Limit Test, Rats with 5 g/m ³ , no acute toxicity. Studies were carried out with Portland cement clinker, the main component of cement.[Reference (10)] Based upon the available data, the classification criteria was not fulfilled.	
Acute toxicity - oral	--	No acute oral toxicity was found with animal tests with cement oven and cement dust. Based upon the available data, the classification criteria was not fulfilled.	
Irritation to the skin	--	Cement has an irritant effect on skin and mucous membrane. If dry cement comes into contact with wet skin or there is contact with moist or wet cement, various irritant and inflamed reactions can be caused to the skin. E.g reddening and cracks. Mechanical rubbing can lead to serious skin complaints [Reference (4)].	
Severe eye damage/irritation	--	In the in vitro test, Portland cement clinker (main component of cement) showed different strong effects on the cornea. The calculated 'irritation' index 128. Direct contact with cement can lead to damage of the cornea, through mechanical effect and through an immediate or delayed irritation or reaction. Direct contact with larger amounts of dry cement or spray from wet cement can lead to moderate eye irritation to severe eye damage and blindness [Reference (11) (12)].	

Sensitivity of airways/skin	--	There are no signs of sensitivity of the airways. Insufficient data means that the classification criteria was not fulfilled [Reference (1)]. In a few cases, eczema can be caused by contact with wet cement. This can be caused by the high pH value (irritant contact dermatitis) or through immunological reactions with soluble chrome (VI) allergic contact dermatitis [Reference (5),(13)]	
Germ Cell mutation	--	No signs of germ cell mutation. On the basis of available data, the classification criteria was deemed not fulfilled [Reference (14), (15)]	
Carcinogenicity	--	No causal relationship was established between cement and cancer. Epidemiological studies showed no relationship between exposure to cement and cancer [Referenz (1)]. Portland cement is not classified as carcinogenic to humans as per ACGIH A4. "Material that could cause cancer in humans – could not be classified due to insufficient data. In vitro-Tests or animal tests give inconclusive evidence for Carcinogenicity, in order to give this material another classification." [Reference (16)]. Based upon available data, the classification criteria was deemed not fulfilled.	
Reproduction toxicity	--	Based upon available data for Portland cement, the classification criteria was not fulfilled.	
Specific target organ toxicity with single exposure	--	Exposure to cement dust can cause irritation of the airways(Throat, lungs). Coughing, sneezing and shortness of breath can occur if exposure exceeds the time limit for working with the product.[Reference (1)]. Exposure to cement dust during normal working can lead to difficulty in breathing. However, there is insufficient knowledge to give a causal relationship.	
Specific target organ toxicity with repeated exposure	--	Long exposure to cement dust above the working time limit, can lead to coughing, shortness of breath and chronic changes to the airways. At lower concentrations, no chronic effects were noted. [Reference (17)]. Based upon available data, the classification criteria was deemed not fulfilled.	
Aspiration hazard	--	Not applicable, as cement not an aerosol.	
Effects on health due to exposure			
The product is not subject to description due to the calculation procedure carried out as per the general guidelines to classify compounds in the EU in the current version. When used and handled in accordance with specifications, the product has no health-damaging effects in our experience and with the available information.			

12.0	Environmental information		
12.1	Toxicity:		
	Cement:	Ecotoxicological studies with Portland cement and Daphnia magna (U.S. EPA, 1994a) [Reference (6)] und Selenastrum Coli (U.S. EPA, 1993) [Reference (7)] showed only a slight toxic effect. So, the LC50 and EC50 values could not be established [Reference (8)]. Also, no toxic effects could be defined on sediments [Reference (9)]. The release of larger quantities of cement into water could however lead to an increase in pH values and therefore could, in extraordinary circumstances, be toxic for aquatic life.	
12.3	Persistence and degradability:	Not applicable.	
12.4	Bioaccumulation potential	No data available.	

12.5.	Soil mobility	No data available.
12.6	Results of the PBT and vPvP assessment	Not applicable.
12.7	Other hazardous effects	The mixture contains Portland cement clinker. The release of larger quantities in combination with water leads to an increase in pH-value. The pH-value rapidly reduces with dilution (anorganic mineralic building materials).

13. Instructions on disposal		
	Procedure for waste treatment disposal:	Cannot be removed as household waste. Do not allow to enter the water system. Store dry in marked containers. Take note of maximum storage time and use up leftover product. Dispose of leftover product by mixing with water (avoiding contact with skin and exposure to dust), letting it harden and then disposing of as per local authority regulations.
	Wet product and product sludges:	Allow wet product and sludges to dry out and avoid entering the water system. Dispose of as described in 'Dried out product'.
	Hardened product:	Dispose of hardened product as per local authority regulations. Do not allow to enter the water system. Dispose of as per AVV. 17 01 01 Concrete 17 09 04 Mixed building and demolition waste except those that fall under 17 09 01, 17 09 02 and 17 09 03
	Waste code as per AVV:	The given waste numbers are examples. The real waste code number is dependent on the origin and composition of the waste. Follow national and regional guidelines when disposing of waste.
	Packaging:	Empty packaging and recycle. Otherwise dispose of as per packaging guidelines as per AVV. 15 01 01 Paper and cardboard packaging 15 01 05 Composite packaging

14.0 Transport instructions

The mixture is subject to none of the international hazardous goods regulations (ADR, RID, ADN, IMDG- Code, ICAO-TI, IATA-DGR).

Thus no hazardous material classification is required.

14.1	UN number:	Not applicable.
14.2	Proper UN shipping name:	Not applicable.
14.3	Transport hazard class:	Not applicable.
14.4	Packaging group:	Not applicable.
14.5	Environmental hazards:	Not applicable.
14.6	Special precautionary measures for the user:	Not applicable
14.7	Bulk goods transport as per Appendix II of MARPOL Treaty 73/78 and as per the IBC code:	Not applicable

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15.0	Information on legislation	
15.1	Regulations for safety, health and environmental protection/specific legislation for the mixture	
	Relevant directives, regulations and rules:	Verordnung zum Schutz vor Gefahrstoffen (Gefahrstoffverordnung – Gef- StoffV) Chemikalienverbotsverordnung (ChemVerbotsV) Verordnung über das Europäische Abfallverzeichnis (Abfallverzeichnis-Verordnung - AVV) Bundes-Bodenschutzgesetz (BBodSchG) Bundes-Bodenschutz- und Altlastenverordnung (BBodSchV) Technische Anleitung zur Reinhaltung der Luft (TA Luft)
	Water hazard class (WGK):	WGK 1 (slightly hazardous to water), Self certification as per VwVwS, Appendix 4.
	Other legislation, limitations and restrictions:	REACH-directive (EU) No. 1907/2006, Appendix XVII, No. 47 (Chrome-VI-connections).
	Relevant TRGS:	TRGS 200, TRGS 402, TRGS 500, TRGS 510, TRGS 900
	Relevant rules (BGR) of legal accident insurance (GUV):	BGR/GUV R 190 (Use of breathing apparatus) BGR 192 (Use of eye/face protection) BGR 189 (Use of protective clothing) BGR 195 (Use of protective gloves)
	GISCODE:	ZP1 cementitious products, chromate poor.
	VCI-Storage class:	Storage class 13 (not flammable materials) as per TRGS 510.
15.2	Material safety assessment: No material safety assessment was performed.	

16.0	Other information	
16.1	Changes over the previous version Corrections P-clauses (new P304+P340), revised general dust limit value	
16.2	Abbreviations and acronyms	
	ACGIH	American Conference of Industrial Hygienists
	ADN	European agreement on the international transportation of hazardous goods on inland waterways.
	ADR/RID	European Agreements on the transport of Dangerous goods by Road/Railway
	APF	Assigned protection factor
	CAS	Chemical Abstracts Service
	CLP	Classification, labelling and packaging (Directive (EU) no. 1272/2008)
	DFG	Deutsche Forschungsgemeinschaft
	EC10	Effective concentration at 10% mortality rate
	EC50	Half maximal effective concentration
	ECHA	European Chemicals Agency
	EINECS	European Inventory of Existing Commercial Chemical Substances
	EN	European Norm
	EPA	Type of high efficiency air filter

GHS	Globally Harmonized System of Classification, Labelling and Packaging of Chemicals
IBC-Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
HEPA	Type of high efficiency air filter
IATA-DGR	International Air Transport Association
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International agreement on the Maritime transport of Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
LC10	Lethal concentration at 10% mortality rate
LC50	Median lethal dose
MARPOL	Marine pollution(International Convention for the Prevention of Pollution From Ships)
MEASE	Metals estimation and assessment of substance exposure
NaCl	Natrium chloride
NOEC	No observed effect concentration
OECD	Organisation for Economic Cooperation and Development
OSHA	Occupational Safety & Health Administration
PBT	Persistent, bio-accumulative and toxic
PROC	Process category
REACH	Registration, Evaluation and Authorisation of Chemicals (Directive (EU) 1907/2006)
SDB	Safety Data Sheet
STOT	Specific target organ toxicity
TRGS	Technische Regeln für Gefahrstoffe [Technical Rules for Hazardous Materials]
UVCB	Technical Rules for Hazardous Materials
VCI	Verband der chemischen Industrie e.V. [German Chemical Association]
vPvB	Very persistent, very bioaccumulative
VwVwS	Verwaltungsvorschrift wassergefährdende Stoffe [Administrative Guidelines for Material Hazards to Water]

16.3 Literature data/sources of data:

- (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) TRGS 900, Technische Regel für Gefahrstoffe „Arbeitsplatzgrenzwerte“, 2014
- (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. 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.
 - (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.

Methods as per article 9 of directive (EU) 1272/2008 to evaluate information to enable classification

The evaluation was carried out as per article 6 paragraph 5 and Appendix I of directive (EU) No. 1272/2008.

Wording of R-clauses, Hazard information and health and safety advice

Designation of special hazards (R-clauses)

R 37/38	Irritates breathing and skin
R 41	Danger of serious eye damage
R 43	Skin sensitivity possible

Safety advice (S-clauses)

S 2	Keep away from children
S 22	Do not inhale dust
S 24/25	Avoid contact with skin and eyes.
S 26	If eye contact, wash well with water and seek medical advice.
S 36/37/39	Wear suitable protective clothing, gloves, glasses, face mask
S 46	If swallowed seek immediate medical advice and show packaging label.

Hazard information (H-data)

H 315	Causes skin irritation.
H 317	Can cause skin reactions
H 318	Causes severe eye damage.
H 335	Can irritate airways

Safety information (P-data)

P102	Keep away from children.
P261	Avoid inhalation of dust.
P271	Only use in fresh air or well ventilated spaces.
P280	Wear safety clothing, eye and face protection.
P305+P351+ P338+P310	IF EYE CONTACT: wash in water for several minutes. Remove any contact lenses. Wash again. Seek immediate medical advice or contact the Poison information centre.
P302+P352+ P332+P313	IF SKIN CONTACT: Wash with lots of soap and water. Seek medical advice if a skin reaction occurs
P304+P340	IF INHALED: Take affected person to fresh air and position in a quiet place so breathing can resume.
P362	Remove contaminated clothing and wash well before wearing again.
P501	Dispose of contents/container as per national waste disposal regulations.

16.4 Training recommendations

In addition to training programs for employees on the topics of health, safety and the environment, companies must ensure that their employees read the safety data sheet, understand and can implement the requirements.

16.5 Exclusion clause

The information in this safety data sheet describes the safety requirements for our product, and relies on the current status of our knowledge. It provides no assurance of product characteristics. The users of our products are responsible on their own to observe existing laws, regulations and rules, even those not named in this data sheet.

Our recommendations for applications which we give to support the purchasers/handlers from our experience, corresponds to current science and practice. The advice is non-binding, and forms no contractual, legal relationship and no additional obligations in the purchase contract. The advice does not release the purchaser from examining our products for their suitability for their foreseen uses. The general rules of construction equipment must be adhered to. We reserve the right to make changes which serve to provide technical progress and improve the product or its use. When such technical information appears, earlier information is no longer valid.

You can find the most current information on our Internet pages. Only our current sales and supply conditions as well as provisions for the placement and use of our silos and mixing facilities apply for all business cases.

Baunit Ltd

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