SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

MFC Final 400

Creation date	01. January 2000		
Revision date	24. November 2017	Version	4.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier — MFC Final 400

Substance / mixture — mixture

Number — Final 410, 411, 412, 413, 420, 430, 440

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

mixture's intended use — Cement screed material modified with polymer, for indoor use in buildings according to ČSN EN 13813.

Disapproved uses of mixture — The product should not be used in ways other then those referred in Section 1.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Name or trade name	MFC - MORFICO s.r.o.
Address	Olbrachtova 1758, 666 03 Tišnov Czech Republic
Identification number (ID)	25507494
Phone	+420549410141

Competent person responsible for the safety data sheet

Name	Jindřich Vrbenský
E-mail	J.Vrbensky@email.cz

1.4. Emergency telephone number

National Health Service (NHS) 111
National poisoning information centre Scotland, NHS 24: 111

Emergency telephone number abroad

Toxikological Information Center Prag :+420 224 919 293 or +420 224 915 402 (24 h)

SECTION 2: Hazards identification

2.1. Substance or mixture classification

Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is classified as dangerous.

Skin Irrit. 2, H315
Skin Sens. 1B, H317
Eye Dam. 1, H318

Full text of all classifications and H-phrases is given in the section 16.

Most serious adverse physico-chemical effects

Not classified.

Most serious adverse effects on human health and the environment

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

2.2. Label elements

Hazard pictogram

Signal word

Danger

Hazardous substances

Cement, portland, chemicals
Flue dust, portland cement

Hazard statements

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

H318	Causes serious eye damage.

Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P261	Avoid breathing dust.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a doctor.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P501	Dispose of contents/container to according to the instructions of the manufacturer or person authorized to dispose of waste.

2.3. Other hazards

Mixture does not contain any substance meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No. 1907/2006 (REACH) as amended.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

A mixture of the substances listed below.
The calcium sulphate component is not classified as dangerous according to the supplier's statement. Contains as a component <5% of Portland cement and additives. Made from reduced cement, contains less than 0.0002% soluble chromium (VI).
For the cement component, the supplier states that it is a mixture of cement Portland clinker (CAS 65997-15-1, EINECS 266-043-4, registration number not allocated) in the amount of 5-100% and dust from clinker production (CAS 68475-76-3 , EINECS 270-659-9, registration number 01-2119486767-17) in an amount of 0-5%. Cements do not meet the criteria for PTB or vPvB in accordance with REACH Annex XIII (Regulation (EC) No 1907/2006).
Additionally, the mixture contains a vinyl acetate / ethylene copolymer component with mineral additives and a protective colloid (1-5% by weight) which is not classified by the manufacturer as hazardous but contains <1% of 2,4,7,9-tetramethyl-5-decyn- 7-diol, which may cause an allergic reaction. Repeated or prolonged skin contact may cause mild irritation. Dust causes respiratory tract irritation. Particles may scratch the eyes and cause mechanical irritation. Dust may be explosive in a critical mixture with air and in the presence of a source of ignition.
The Quartz (sand) component does not meet the criteria for classification as hazardous.Contains >98% quartz, is not classified by the supplier as hazardous. Contains less than 1% quartz (breathable), which is classified as STOT RE1. Depending on the type of processing and use (eg grinding, drying), airborne, respirable crystalline quartz (quartz) may be formed. Long-term or extensive inhalation of respirable crystalline silica dust can cause pulmonary fibrosis, commonly referred to as silicosis.
The slag component is not classified as hazardous, does not meet the criteria for PTB or vPvB in accordance with REACH Annex XIII (Regulation (EC) No 1907/2006).

Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note.
CAS: 14808-60-2	quartz (SiO_2)	40-60		
CAS: 65996-69-2 EC: 266-002-0 Registration number: 01-2119487456-25	Slags, ferrous metal, blast furnace	10-30		
CAS: 65997-15-1 EC: 266-043-4	Cement, portland, chemicals	5-15	Skin Irrit. 2, H315 Skin Sens. 1B, H317 Eye Dam. 1, H318 STOT SE 3, H335	
CAS: 7778-18-9 EC: 231-900-3	calcium sulfate	5-15		
CAS: 65997-16-2 EC: 266-045-5	cement, alumina, chemicals	5-15		
	Copolymer of vinyl acetate and ethylene	1-5		

Identification numbers	Substance name	Content in % weight	Classification according to Regulation (EC) No 1272/2008	Note.
CAS: 68475-76-3 EC: 270-659-9 Registration number: 01-2119486767-17-0030	Flue dust, portland cement	<1	Skin Irrit. 2, H315 Skin Sens. 1B, H317 Eye Dam. 1, H318 STOT SE 3, H335	

Full text of all classifications and H-phrases is given in the section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Take care of your own safety. If any health problems are manifested or if in doubt, inform a doctor and show him information from this safety data sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

Inhalation

Terminate the exposure immediately; move the affected person to fresh air. When persistent breathing difficulties, call a doctor.

Skin contact

Remove contaminated clothes. Wash the affected area with plenty of water, lukewarm if possible. Soap, soap solution or shampoo should be used if there is no skin injury. Provide medical treatment if skin irritation persists.

Eye contact

Do not rub your eyes – it could lead to mechanical damage of the cornea. Rinse eyes immediately with a flow of running water, open the eyelids (also using force if needed); remove contact lenses immediately if worn by the affected person. No neutralization should be performed in any case! Rinsing should be continued for 10-30 minutes from the inner to the outer eye corner to make sure that the other eye is not involved. Depending on the situation, call medical rescue service or ensure medical treatment as promptly as possible. Everyone must be referred for treatment even if affected only a little.

Ingestion

DO NOT INDUCE VOMITING! Rinse out the mouth with water and provide 2-5 dL of water. Provide medical treatment if the person has any health problems.

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

Inhalation

Possible airway irritation with dust, cough. Long-term repeated inhalation of cement dust increases the risk of developing lung diseases.

Skin contact

Irritation, redness, itching. Allergic reactions. Mechanical dust irritation. When mixed with water, the mixture has a high pH and can be corrosive.

Eye contact

Irritation, lacrimation, pain. Damage to the eyes through dust. When mixed with water, the mixture has a high pH and can be corrosive.

Ingestion

Irritation, nausea, burning.

4.3. Indication of any immediate medical attention and special treatment needed

Troubleshoot symptoms and seek medical advice.

More information

They are not available.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

According to the surroundings of the fire.

Unsuitable extinguishing media

None.

5.2. Special hazards arising from the substance or mixture

The product is non-flammable. Contains polymer - a finely ground, flammable powder that poses a risk of fire. It contains organic components that can be released during fire. Fire produces heavy, black smoke, with potential development of carbon monoxide and dioxide and other toxic gases. Inhalation of hazardous degradation (pyrolysis) products may cause serious health damage.

5.3. Advice for firefighters

Cool the closed containers with water in the vicinity of the fire with water or move them to safety if this can be done without danger. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.Use self-contained breathing apparatus, full body protection and other protection according to valid regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid dust, remove sources of ignition and fire. Do not inhale dust. Ensure adequate ventilation. Avoid contact with the skin and eyes. Unprotected persons must leave the space. Use personal protective equipment for work. Follow the instructions in sections 7 and 8.

6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water.

6.3. Methods and material for containment and cleaning up

Gently harvest the product mechanically (by vacuuming / suction) and reuse if this can be done. Dispose of unused material in accordance with the instructions in section 13.

6.4. Reference to other sections

See the Section 7, 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ensure ventilation of the area. Avoid dust formation at flammable or explosive concentrations and concentrations exceeding the maximum allowable concentrations (NPK-P) for working atmosphere. Minimize airborne dust generation and prevent wind blowing during loading and unloading. The product should only be used in areas, where it is not in contact with open fire and other ignition sources. No smoking. An electrostatic charge may occur during use. All equipment must be properly grounded. Use of antistatic clothing and footwear is recommended. Use non-sparking tools. Do not inhale dust. Prevent contact with skin and eyes. Use personal protective equipment as per Section 8. Observe the valid legal regulations on safety and health protection. Do not drink, eat or smoke at work. At the end of the shift, take a shower and change your clothing.

7.2. Conditions for safe storage, including any incompatibilities

Store in original containers in cool, dry, well ventilated areas. Protect from moisture. Avoid dust, protect yourself from sources of ignition and fire. Observe the instructions on the label.

Content	25 kg
Type of packaging	bags

The specific requirements or rules relating to the substance/mixture

Handle the product according to the product data sheet.

7.3. Specific end use(s)

See section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The mixture contains substances for which occupational exposure limits are set.

United Kingdom of Great Britain and Northern Ireland

Substance name (component)	Type	Time of exposure	Value	Note	Source
Cement, portland, chemicals (CAS: 65997-15-1)	WEL	8 hours	10 mg/m³	Inhalable aerosol	Gestis
	WEL	Short-term	4 ppm	Respirable aerosol	

Other information of limit values

DNEL inhalation (8 hours): 3 mg / m3 (cement). Exposure limit values for polymer binder from producer: Dust: 10 mg / m3, Vinyl acetate: 50 mg / m3 - upper limit, 30 mg / m3 TWA.

8.2. Exposure controls

Observe the usual precautions for the protection of health at work with chemicals and in particular good ventilation. Avoid contact with eyes and do not breathe dust. This can be achieved only by local suction or efficient general ventilation. If NPK-P can not be maintained, adequate respiratory protection must be used. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

Eye/face protection

Dustproof protective glasses (according to EN 166).

Skin protection

Hand protection: Protective gloves resistant to the product eg rubber, thickness 1 mm, leakage time 8 hours (according to EN 374). Observe the recommendations of a particular manufacturer of gloves when choosing the appropriate thickness, material and permeability, or take the test, the product is a mixture. For prolonged or repeated contact, use appropriate skin protection creams that come into direct contact with the mixture. Observe other recommendations of the manufacturer. Other protection: Protective clothing made of natural fibers, protective closed footwear. Contaminated skin should be thoroughly washed.

Respiratory protection

Ensure adequate ventilation according to the volumes that are being used. Use a dust filter mask, eventually. insulating breathing apparatus when exceeding NPK-P toxic substances or in poorly ventilated environment (according to EN 14387: 2004, 83 2220).

Thermal hazard

Under normal conditions of use and storage there is no risk.

Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

More information

None.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	powder
Physical state	solid at 20°C
color	grey
Odour	without fragrance
Odour threshold	data not available
pH	data not available
Melting point/freezing point	data not available
Initial boiling point and boiling range	data not available
Flash point	data not available
Evaporation rate	data not available
Flammability (solid, gas)	data not available
Upper/lower flammability or explosive limits	
flammability limits	data not available
explosive limits	data not available
Vapour pressure	data not available
Vapour density	data not available
Relative density	data not available

Solubility(ies)	
solubility in water	insoluble
solubility in fats	data not available
Partition coefficient: n-octanol/water	data not available
Auto-ignition temperature	data not available
Decomposition temperature	data not available
Viscosity	data not available
Explosive properties	data not available
Oxidising properties	data not available

9.2. Other information

Density	1.5 g/cm^3 at 20 °C
ignition temperature	data not available

pH of the mixture after mixing with water: 11-13.5.
See the product data sheet for further features.
Properties for polymer binder from manufacturer: white to beige powder, medium particle size 34 µm, odorless, pH approx. 8 at 20 ° C (100 g / l H2O), partially soluble in water, dispersion, 475 - 625 kg / m³ , lower explosion limit 50.0 g / m3, self ignition> 400 ° C, decomposition temperature> 250 ° C, ignition temperature 550 ° C, dust explosion class ST 1. Calcium sulphate: solid, light gray to beige, odorless , melting point ca.1.450 ° C, bulk density approx. 1300 kg / m³, water solubility 1.5 g / l at 20 ° C, pH ca. 12 at 50 g / l per l H2O at 20 ° C. Characteristics of the component Cements: gray or white powder, particles 5-30 µm, odorless, pH (water: solid ratio 1: 2) 11-13.5, melting point> 1250 ° C, apparent density 0.9-1, 5 g / cm3, solubility low 0.1 - 1.5 g / l at 20 ° C. Quartz properties: solid, grain shape, color gray / white, odorless, pH 5-8 (400 g / water), melting point 1710 ° C, density 2.65 g / cm3, insoluble. Aluminum cement: grayish-brown powder or dust, pH 11-11.5 10% solution in water, density 3.2-3.3 g / cm3, melting point 1300 ° C, bulk density 1100 - 1300 kg / m3. Characteristics of the component Slag: gray-yellow granulate 0-5 mm or powder, pH 9,0-12,5 10% solution at 20 ° C, non-flammable, density 2,4-3,0 g / cm3, Log Kow (Pow) 9 at 20 ° C.

SECTION 10: Stability and reactivity

10.1. Reactivity

Under normal use, the mixture is stable, no dangerous reactivity or polymerisation is known. Avoid dust, may be explosive.

10.2. Chemical stability

Za normálního způsobu použití a doporučeného skladování je směs chemicky stabilní.

10.3. Possibility of hazardous reactions

With humidity. Wet storage conditions can cause clumping and loss of product quality. Uncontrolled contact with water. Contact with acids.

10.4. Conditions to avoid

Protect from moisture. Water, humidity. Wet storage conditions can cause clumping and loss of product quality. Prevent dust from handling, may be explosive.

10.5. Incompatible materials

Strong acids, bases, ammonium salts. Damage to aluminum and other non-ferrous metals (cement) may occur.

10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous outcomes such as carbon monoxide and carbon dioxide are formed at high temperature and in fire. The copolymer releases acetic acid.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

There are no toxicological data available for the mixture for ingredients only. It is classified as irritating. In the form of dust even after mixing with water it irritates the eyes, the respiratory organs and the skin. For the polymer binder component, the manufacturer has low oral toxicity, does not irritate the skin or eyes, sensitization or mutagenicity is not expected. Cement: Due to the Cr (VI) content, sensitive people may cause an allergic reaction. Inhalation of cement dust can aggravate existing respiratory diseases or health conditions such as emphysema (asthma) or asthma or the current condition of the skin or eyes. Sand: Depending on the type of processing and use (eg grinding, drying), airborne breathable crystalline quartz (quartzite) may be formed. Long-term or extensive inhalation of respirable crystalline silica dust can cause pulmonary fibrosis, commonly referred to as silicosis. The main symptoms of silicosis are coughing and difficulty in breathing. Exposure of dust workers to respirable crystalline silica must be monitored and controlled. This product must be handled with care to avoid dust generation. Slag is slightly alkaline, the risk of dust irritation.

Acute toxicity

Based on available data the classification criteria are not met. Cement component: limit test, rabbit, dermal contact for 24 hours, 2000 mg / kg body weight - non-lethal. No acute inhalation effects were observed. There is no evidence of oral toxicity from dust-bed studies from portland clinker production. Slag component - no acute oral, dermal toxicity - determined on the basis of other types of slag or inhalation. substance, risk of dust irritation.

cement, alumina, chemicals

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex	Determining the value of
Oral	LD_{50}	OECD 401	>2000 mg/kg		Rat		

Cement, portland, chemicals

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex	Determining the value of
Dermal			2000 mg/kg bw	24 hour	Rabbit		

Copolymer of vinyl acetate and ethylene

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex	Determining the value of
Oral	LD_{50}	OECD 423	>2000 mg/kg		Rat		Analogous approach

Slags, ferrous metal, blast furnace

Route of exposure	Parameter	Method	Value	Time of exposure	Species	Sex	Determining the value of
Oral	LD_{50}	OECD 401	2000 mg/kg bw		Rat (Vistar rat)		
Inhalation	LC_{50}	OECD 403	5235 mg/m³		Rat (Vistar rat)		

Skin corrosion/irritation

Causes skin irritation. When contacting a cement with a wet skin, it can cause swelling, cracking or cracking of the skin. Longer contact with current friction can cause severe burns. The slag component is not irritating according to the OECD 404, New Zealand white rabbit test.

cement, alumina, chemicals

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of
Oral	No effect	OECD 404		Rabbit	

Cement, portland, chemicals

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of
	Irritating, Drying and cracking of the skin, Caustic			Human	Experimentally

Copolymer of vinyl acetate and ethylene

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of
Oral	Not irritating	OECD 404		Rabbit	Analogous approach

Slags, ferrous metal, blast furnace

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of
Oral	Not irritating	OECD 404		Rabbit (White rabbit)	

Serious eye damage/irritation

Causes serious eye damage. Component portland clinker caused a varied image of the effects on the cornea and the calculated irritancy index was ca. 128. Cements for general use contain different amounts of Portland clinker, fly ash, blast furnace slag and gypsum, natural pozzolan and calcined slate, siliceous dust and limestone. Direct contact with cement can cause corneal damage by mechanical stress, immediate or delayed irritation, or inflammation. Direct contact with more dry cement dust or wet / wet spraying can cause light irritation (eg conjunctivitis or eyelid inflammation) after chemical burns / burning and blindness. The slag component is not irritating to the eyes according to the OECD 405, New Zealand white rabbit test.

cement, alumina, chemicals

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of	Source
Eye	Slightly irritating	OECD 405	72 hour	Rabbit		prach

Cement, portland, chemicals

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of	Source
	Irritating					

Copolymer of vinyl acetate and ethylene

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of	Source
Eye	Not irritating	OECD 405			Analogous approach	

Slags, ferrous metal, blast furnace

Route of exposure	Result	Method	Time of exposure	Species	Determining the value of	Source
Eye	Not irritating	OECD 405		Rabbit (New Zealand White rabbit)		

Sensitization

Slags, ferrous metal, blast furnace

Route of exposure	Result	Method	Time of exposure	Species	Sex
Oral	Not sensitizing	OECD 406		Rabbit (New Zealand White rabbit)	

Respiratory or skin sensitisation

May cause an allergic skin reaction.Some individuals may suffer from exposure to wet cement dust by eczema caused by either a high pH which causes contact dermatitis to be irritated after prolonged contact, or by an immunological response to soluble Cr (VI) that causes contact allergic dermatitis. The reaction may occur in various forms ranging from mild rash to severe dermatitis and is a combination of both of the above mechanisms. If the cement contains a reducing agent to reduce the soluble Cr (VI) content and if the limit for soluble Cr (VI) is not exceeded at the time of storage, the sensitizing effect is not expected. The slag component is not sensitizing according to OECD Test 406, New Zealand, white rabbit.

Cement, portland, chemicals

Route of exposure	Result	Method	Time of exposure	Species	Sex	Determining the value of	Source
Dermal	Sensitizing			Human		Experimentally	

Copolymer of vinyl acetate and ethylene

Route of exposure	Result	Method	Time of exposure	Species	Sex	Determining the value of	Source
Dermal	No effect	OECD 429		Mouse (lymphoma)		Analogous approach	LLNA (test lokální lymfatické uzliny)

Mutagenicity

Slags, ferrous metal, blast furnace

Result	Method	Time of exposure	Specific target organ	Species	Sex
No effect	EU B.13/14			Salmonella typhimurium	
No effect	EU B.17			Chinese hamster lung fibroblast (V79)	

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Copolymer of vinyl acetate and ethylene

Result	Method	Time of exposure	Specific target organ	Species	Sex	Determining the value of	Source
Negative	OECD 471			Bacteria		Analogous approach	test mutace (in vitro)

Carcinogenicity

Based on available data the classification criteria are not met. Epidemiological literature does not support the designation of Portland cement as a possible human carcinogen. Portland cement is not classified as a human carcinogen (according to ACGIH A4: Reagents that cause concern that it could be carcinogenic to humans but which can not be definitively assessed due to a lack of data. In vitro or animal studies do not provide evidence of carcinogenicity sufficient for the classification of the reagent by some of the other indications). Portland cement contains up to 5 % of dust.

Reproductive toxicity

Based on available data the classification criteria are not met. Slag component: NOAEC study is going on: 200 mg / m³ (subacute, rat).

Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met. Dust of portland cement can irritate the throat and the airways. Exposure to a person above the exposure limit in the workplace may result in coughing, sneezing and shortness of breath / breathlessness. Overall, the structure of evidence clearly indicates that exposure in the working environment by cement dust causes insufficient respiratory function. However, the available evidence is currently insufficient to establish certain certainty in relation to the size of the dose and these effects.

Cement, portland, chemicals

Route of exposure	Parameter	Value	Result	Species	Sex
Inhalation			Irritating		

Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met. U cementů nebyly pozorovány žádné chronické účinky nebo účinky při nižších koncentracích.

Slags, ferrous metal, blast furnace

Route of exposure	Parameter	Value	Result	Species	Sex	Source
Oral	NOAEC	200 mg/m³		Rat		studie probíhá

Aspiration hazard

Based on available data the classification criteria are not met. Cementy se nepoužívají jako aerosol. No chronic effects or effects at lower concentrations were observed for cements.

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity

No toxicological data is available for the mixture. No hazardous effects are expected in the aquatic environment. The cement component: The ecotoxicological tests of Portland cement on Daphnia magna and Selenastrum coli showed only low toxic effects. Therefore, the LC50 and EC50 values ☐☐could not be determined. There is no indication of sediment toxicity. However, the presence of large amounts of cement in water can cause an increase in pH, and therefore may be toxic in some circumstances for life in water (aquatic environment, aquatic organisms). For the slag component: LC50 for freshwater fish: 100 g / l, LC50 for marine fish: 10 g / l, EC50 / LC50 for freshwater invertebrates: 50 g / l, EC50 / LC50 for marine invertebrates: LC50 for freshwater algae: 80 g / l, EC50 / LC50 for marine algae: 8 g / l. The polymer component increases the biological oxygen demand in wastewater, and low toxicity to aquatic organisms is expected. According to current experience, negative effects are not expected in sewage treatment plants.

cement, alumina, chemicals

Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of
LC_{50}	OECD 203	>100 mg/kg	96 hour	Fishes (Oncorhynchus mykiss)		
LC_{50}	OECD 202	6.6 mg/kg	48 hour	Daphnia (Daphnia magna)		
ECr_{50}	OECD 201	>5.6 mg/l	72 hour	Algae (Pseudokirchneriella subcapitata)		

Copolymer of vinyl acetate and ethylene

Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of
LC_{50}	OECD 203	>100 mg/l	96 hour	Fishes (Kapr (Cyprinus carpio))		Analogous approach
EC10		>1000 mg/l	0,5 hour		Activated sludge	Analogous approach

Slags, ferrous metal, blast furnace

Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of
LC 0	OECD 203	>100 g/l	96 hour	Fishes (Leuciscus idus)		
LC_{50}	OECD 203	>100 g/l	96 hour	Fishes (Leuciscus idus)		
LC 0	OECD 202	>100 g/l	48 hour	Daphnia (Daphnia magna)		

Slags, ferrous metal, blast furnace

Parameter	Method	Value	Time of exposure	Species	Environment	Determining the value of
LC_{50}	OECD 202	>100 g/l	48 hour	Daphnia (Daphnia magna)		
IC 10	OECD 201	>100 g/l	72 hour	Algae (Selenastrum substicatus)		
IC_{50}	OECD 201	>100 g/l	72 hour	Algae (Selenastrum substicatus)		
EC10	OECD 209	10 g/l	3 hour	Microorganisms	Activated sludge	
EC_{50}	OECD 209	10 g/l	3 hour	Microorganisms	Activated sludge	

Chronic toxicity

Slags, ferrous metal, blast furnace

Parameter	Method	Value	Time of exposure	Species	Environment
EC10	OECD 211	5 g/l		Daphnia (Daphnia magna)	

12.2. Persistence and degradability

There is no data available for the mixture. The cement component is an inorganic material. Hardened cement does not pose a risk of toxicity. The polymer component is not readily biodegradable. Elimination of adsorption on recovered sludge. The separation can be done by flocculation.

12.3. Bioaccumulative potential

There is no data available for the mixture. For cement irrelevant, inorganic material. The polymer component has a low bioaccumulation potential. Slag - no evidence of bioaccumulation potential.

12.4. Mobility in soil

There is no data available for the mixture.The polymer component is miscible with water. The slag component is poorly soluble, exhibiting low mobility in most soils. Cement is insoluble.

12.5. Results of PBT and vPvB assessment

Product does not contain any substance meeting the criteria for PBT or vPvB in accordance with the Annex XIII of Regulation (EC) No 1907/2006 (REACH) as amended.

12.6. Other adverse effects

Ecotoxic effects can only occur if the product is inadvertently spilled in conjunction with water due to increased pH. Slag: slowing germination. This must be taken into account especially in areas with increased protection of fauna and flora. Risk of pH change in the environment (pH> 7). When used in slow-flowing or standing water, it is advisable to oxidize water and adjust the speed of the work so that the pH of the water does not have any adverse effects on fauna and flora.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazard of environmental contamination; dispose of the waste in accordance with the local and/or national regulations. Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to a person authorised for waste removal (a specialized company) that is entitled for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

Legislation of waste

Council Directive 75/442/EEC on waste, as amended. Decree No. 383/2001 Coll., on details regarding waste handling as amended. Decree No. 93/2016 Coll., (waste catalogue) as amended. Decision 2000/532/EC establishing a list of wastes, as amended.

Code of type of waste

17 01 01	concrete
10 13 14	waste concrete and concrete sludge

Packaging waste type code

15 01 10	packaging containing residues of or contaminated by dangerous substances
15 01 01	paper and cardboard packaging

SECTION 14: Transport information

14.1. UN number

Not subject to ADR.

14.2. UN proper shipping name

not available

14.3. Transport hazard class(es)

not available

14.4. Packing group

not available

14.5. Environmental hazards

not available

14.6. Special precautions for user

not available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not available

SECTION 15: Regulatory information

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

Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18th December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing the European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No. 793/93 and Commission Regulation (EC) No. 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16th December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006, as amended. The Act No. 350/2011 Coll., on Chemical Substances and Chemical Preparations as amended (the Chemical Act). The Act No. 350/2011 Coll., on Chemical Substances and Chemical Preparations as amended. The Act No. 258/2000 Coll., on Protection of Public Health as amended. Decree No. 361/2007 Coll., determining conditions of occupational health protection as amended. Decree No. 415/2012 Coll., on the permissible level of pollution and its determination and implementation of certain other provisions of the Air Protection Act as amended. The Act No. 185/2001 Coll., on Waste and the Amendment of Some Other Acts as amended. The Act No. 201/2012 Coll., on the Protection of Atmosphere – Clean Air Act as amended. Decree No. 432/2003 Coll., laying down conditions for assigning categories to individual jobs, limit values of indices from biological exposure tests, conditions for the sampling of biological materials for biological exposure and the particulars of the reports on work with asbestos and biological agents as amended.

15.2. Chemical safety assessment

Not available.

More information

Not available.

SECTION 16: Other information

A list of standard risk phrases used in the safety data sheet

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

Guidelines for safe handling used in the safety data sheet

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a doctor.
P501	Dispose of contents/container to according to the instructions of the manufacturer or person authorized to dispose of waste.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P261	Avoid breathing dust.

Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per the Section 1. The user is responsible for adherence to all related health protection regulations.

Key to abbreviations and acronyms used in the safety data sheet

ADR	European agreement concerning the international carriage of dangerous goods by road
BCF	Bioconcentration Factor
CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures
DNEL	Derived no-effect level
EC	Identification code for each substance listed in EINECS
EC_{50}	Concentration of a substance when it is affected 50% of the population
EINECS	European Inventory of Existing Commercial Chemical Substances
EmS	Emergency plan
EU	European Union
IATA	International Air Transport Association
IBC	International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals
IC_{50}	Concentration causing 50% blockade
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
INCI	International Nomenclature of Cosmetic Ingredients
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LC_{50}	Lethal concentration of a substance in which it can be expected death of 50% of the population
LD_{50}	Lethal dose of a substance in which it can be expected death of 50% of the population
LOAEC	Lowest observed adverse effect concentration
LOAEL	Lowest observed adverse effect level
log Kow	Octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEC	No observed adverse effect concentration
NOAEL	No observed adverse effect level
NOEC	No observed effect concentration
NOEL	No observed effect level
OEL	Occupational Exposure Limits
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted no-effect concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Agreement on the transport of dangerous goods by rail
UN	Four-figure identification number of the substance or article taken from the UN Model Regulations
UVCB	Substances of unknown or variable composition, complex reaction products or biological materials
VOC	Volatile organic compounds
vPvB	Very Persistent and very Bioaccumulative

Eye Dam.	Serious eye damage
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitization
STOT SE	Specific target organ toxicity - single exposure

Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

Recommended restrictions of use

Only use the manufacturer's recommendations.

Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No. 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended. REGULATION (EC) No. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended. The Act No. 350/2011 Coll., on Chemical Substances and Chemical Preparations as amended. First aid principles after the exposure to the chemicals (Zásady pro poskytování první pomoci při expozici chemickým látkám, doc. MUDr. Daniela Pelclová, CSc., MUDr. Alexandr Fuchs, CSc., MUDr. Miroslava Hornychová, CSc., MUDr. Zdeňka Trávníčková, CSc., Jiřina Fridrichovská, prom. chem.). Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

The changes (which information has been added, deleted or modified)

Version 4.0 replaces version from 04.08.2015. Changes were made in all sections according to the new revisions to the Safety Data Sheets of the components.

More information

None.

Statement

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.