1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

Product denomination: NovoCrete®
Kind of Product/Use: Cement Additive Lubricant
Article number: Unidentified Restrictions of use: Unidentified

Company name:
OPiS AG, Emmersbergstrasse 33 CH 8200
E-mail address: info@opis.ch
Contact details:
Telephone number: +41 52 511 79 20
Schaffhausen, Switzerland Region: Switzerland

IDH number: Unidentified

Article number: Unidentified

MEDICAL EMERGENCY
Emergency number: 1-800-222-1222 (24/7)

Product description:

NovoCrete® is a white powder made from 100 % mineral components containing alkaline and earth alkaline constituents. NovoCrete® used as a cement additive mixture in “type 1, type 2” Portland cement. NovoCrete® combined with Portland cement and an optimal water content increases the crystalline formations during the cement hydration process, resulting in greater tensile strength and an improved modulus of elasticity compared to non-modified cement. NovoCrete® neutralizes pH levels, and provides a higher degree of water impermeability. NovoCrete® is an environmentally friendly mineral and is 100 % recyclable. Clay, silty and sand-type soils can be stabilized using NovoCrete®. We can provide solutions even for soil types with a proportion of organic matter up to 15 % or for soils with a higher salt content. The stabilized layers generate a very high tensile strength which allows the absorption of vibration from heavy trucks and equipment. These layers achieve a “flex” that allows the vibratory movement.

2. HAZARDS IDENTIFICATION OF THE PRODUCT

Classification of the substance or mixture
According to Regulation (CE) 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 sensitization
Specific target organ toxicity single exposure	3	H335: May cause respiratory irritation

Label elements / Hazard pictogram
According to Regulation (CE) No. 1272/2008 [CLP]

Hazard statements

Precautionary statements:
P102 Keep out of reach of children.
P280 Wear protective gloves/protective clothing/eye protection/face protection 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 the POISEN CENTRE or doctor/physician.
P302+P352+P333+P313 IF CONTACT WITH 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/ fumes, gas, mist, vapors, spray. IF INHALED: Remove victims to fresh air and keep at rest in a position comfortable for breathing. Call the POISON CENTRE or doctor/physician if you feel unwell.
P501 Dispose of contents/container to adequate product waste site.

The efficiency period of the reducer is:
Sacks/Big Bag: Two months from the date of packaging that appears on the bag, provided that the storage conditions
are followed.

Other hazards:
NovoCrete does not meet the criteria for PBT or vPvB in accordance with Annex XIII of REACH (Regulation (EC) No 1907/2006).
NovoCrete® is either naturally low in soluble chromium VI or reducing agents have been added to control the levels of sensitizing soluble chromium (VI) to below 2mg/kg (0.0002%) of the total dry weight of the NovoCrete® ready for use according to legislation specified under Section 15.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances:
Not applicable as the product is a mixture, not a substance.

Mixtures:
Special binder NovoCrete®

Composition:

Chemical Composition	Concentration
Chlorides (natural)	20 – 30 %
Oxides (natural)	10 – 15 %
Sulfates (natural)	5 – 10 %
Silicates (natural	5 – 10 %
Carbonates (natural)	45 – 55 %

4. FIRST AID MEASURES

General notes
Personal protective equipment needed for first aid responders. First aid workers should avoid contact with wet NovoCrete® or wet cement/NovoCrete® containing mixtures. In dust areas always wear gloves, safety glasses and mask. Avoid contact with wet cement or mixtures and in addition to personal protective equipment mentioned before, use long sleeve shirt and pants.

Inhalation
Remove the exposure source. Move the person to fresh air. Look for medical attention if symptoms persist.

Skin contact
For dry NovoCrete®, remove and then rinse abundantly with water for 30 – 60 minutes. For wet NovoCrete®, wash skin with plenty of water for 30-60 minutes. Remove contaminated clothing, footwear, watches, etc. and clean thoroughly before re-using them. Seek medical treatment in all cases of irritation or burns.

Contact with eyes.
Remove the exposure source. Do not rub your eyes to avoid cornea damage because of mechanical stress. Flush eyes immediately with plenty of water for 15-20 minutes, occasionally lifting the upper and lower eyelids. Verify if the victim carries lenses of contact and in this case, remove them. Seek medical attention if irritation persists, in which case keep available the label container.

Ingestion
If the person is conscious, to remove the material, rinse mouth with water. Not induce to the vomit unless it indicates specifically the personal medical. Seek medical attention if symptoms occur.

Most important symptoms and effects, both acute and delayed:

Eyes:
Eye contact with NovoCrete® (dry or wet) may cause minor injuries such as irritation and pain and potentially irreversible injuries as burns potentially irreversible.
Inhalation:
Can cause irritation of the throat and the respiratory tract and the repeated inhalation of NovoCrete® dust can increase.
the risk of lung diseases
Skin:
The NovoCrete® may have an irritating effect on wet skin (due to sweat or moisture) and after a prolonged contact without adequate protection can cause dermatitis or severe burns.
Ingestion:
Irritation, feeling of pain and or burning.

Indication of any immediate medical attention and special treatment needed.
When contacting a physician, take this safety data sheet with you.

Notes for the doctor:
Not available

Specific treatments:
There is no specific treatment available.

5. FIRE-FIGHTING MEASURES

Extinguishing media:
NovoCrete® is not flammable.
Appropriate fire extinguishing substances:
In case of fire at the storage place or container that contains it, use water spray, foam, dry chemical or CO_2.
Inappropriate fire extinguishing substances for safety: Do not use water jets.
Special hazards arising from the substance or mixture Dangers derived from the substance or mixture.
NovoCrete® is non-combustible and non-explosive and will not facilitate or sustain the combustion of other materials.
Advice for fire-fighters:
Special measures for firefighter's team: In case of fire, isolate quickly the area, evacuating all the people of the vicinity of the place of the incident. Keep on the side where blows the wind. Put protective equipment before entering the danger area. Don´t perform any action that suppose a personal risk or without properly training.

Special protective Equipment:
NovoCrete® poses no fire-related hazards. No need for special protective equipment for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:
Wear protective equipment as described under Section 8 and follow the advice on safe handling and use given under Section 7. Do not perform any action that poses a personal risk or without proper training. Do not accept the presence of unauthorized personnel or without training. Do not touch or walk over the spilled material.
For emergency responders:
Emergency procedures are not required. See also the information mentioned "for the personnel that do not form part of the emergency team ".

Environmental precautions:
Do not wash NovoCrete® down sewage and drainage systems or into bodies of water (e.g. streams).

Methods and material for containment and cleaning up:
Collect the spillage in a dry state if possible.

Reference to other sections:
See sections 8 and 13 for more details.

7. HANDLING AND STORAGE

Protective measures:
Follow the recommendations as given under Section 8.

To clean up dry NovoCrete®, see Subsection 6.3.

Measures to prevent fire: Not applicable.

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

For more information, refer to the practice guidelines adopted under the Social Dialogue Agreement on Workers' Health Protection through the Good Handling and Use of Crystalline Silica and Products Containing it, by Employee and Employer European sectoral associations, among which CEMBUREAU. These safe handling practices It can be found via the following link: http://www.nepsi.eu/agreement-good-practice-guide/good-practice-guide.aspx.

Measure to protect the environment:
No measures.

Information on general occupational hygiene:
Do not handle or store near food and beverages or smoking materials. In dusty environment, wear dust mask and protective goggles. Use protective gloves to avoid skin contact.

Conditions for safe storage, including any incompatibilities:
Bulk cement should be stored in silos that are waterproof, dry (i.e. with internal condensation minimized), clean and **protected from contamination.**

Engulfment hazard:
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 cement without taking the proper security measures. NovoCrete® can build-up or adhere to the walls of a confined space. NovoCrete® can release, collapse or fall unexpectedly.

Packed products should be stored in unopened bags clear of the ground in cool, dry conditions and protected from excessive draught to avoid degradation of quality. Bags should be stacked in a stable manner. Do not use aluminum containers for the storage or transport of wet NovoCrete® containing mixtures due to incompatibility of the materials.

Specific end use(s):
No additional information for the specific end uses (see section 1.2).

Control of soluble Cr (VI):
For cements + NovoCrete® treated with a Cr (VI) reducing agent according to the regulations given in Section 15, the effectiveness of the reducing agent diminishes with time. Therefore, NovoCrete® bags and/or deli- very documents will contain information on the packaging date, 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 0.0002 % of the total dry weight of the NovoCrete® ready for use, according to UNE-EN 196-10.
They will also indicate the appropriate storage conditions for maintaining the effectiveness of the reducing agent.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Name – limit value (a 8 h VLA)	Limit type value	Value	Unit	Legislation reference.
Particles (non-soluble or not much soluble)	Inhalable fraction, VLA-ED	1,25 - 10	mg/m³	TNO report V8801/02 An acute (4-hour) inhalation toxicity study with CLP/GHS 03-2010-fine in rats, July 2010 – unaudited.
water soluble	2 ppm in cement			Regulation (EC) chromium (VI) No. 1907/2006

Exposure controls:
Engineering controls and individual protection measures in this section has a DNEL of 3 mg/ m³. For DNEL=1 mg/ m³ and DNEL= 5 mg/ m³ see annex.

For everyone PROC, users can choose from either option A) or B) in the table above, according to what is best suited to their specific situation. If one option is chosen, then the same option must be chosen in the table from section “8.2.2 Individual protection measures such as personal protection equipment” - Specification of respiratory protective equipment. Only combinations between A) – A) and B) – B) are possible.

Appropriate engineering controls:
Measures to reduce generation of dust and to avoid dust propagating in the environment such as dedusting and exhaust. ventilation and dry clean-up methods which do not cause airborne dispersion.

Use	PROC*	Expo-sure	Localized controls	Efficiency
Industrial manufacture/formulation of hydraulic building and construction materials	2, 3	Duration is not restricted (up to 480 minutes per shift, 5 shifts a week)	not required	-
	14, 26		A) not required or B) generic local exhaust ventilation	- 78 %
	5, 8b, 9		A) general ventilation or B) generic local exhaust ventilation	17 % 78 %
Industrial use of dry hydraulic building and construction materials (indoor, outdoor)	2		not required	-
	14, 22, 26		A) not required or B) generic local exhaust ventilation	- 78 %
	5, 8b, 9		A) general ventilation or B) generic local exhaust ventilation	17 % 78 %
Industrial use of wet suspension of hydraulic building and construction materials	7		A) Not required or B) Generic local exhaust ventilation	- 78 %
	2, 5, 8b, 9 10, 13, 14		not required	-
Professional use of dry hydraulic building and construction materials (indoor, outdoor)	2		not required	-
	9, 26		A) not required or B) generic local exhaust ventilation	- 72 %
	5, 8a, 8b, 14		A) general ventilation or B) generic local exhaust ventilation	- 87 %
	19		localized controls are not applicable, process only in good, ventilated rooms or outdoor	-
Professional uses of wet suspensions of hydraulic building and construction materials	11		A) not required or B) generic local exhaust ventilation	- 78 %
	2, 5, 8a, 8b, 9, 10, 13, 14, 19		not required	-

PROC's are identified uses and defined in section 16.
Individual protection measures such as personal protection equipment
General:
During work avoid kneeling in fresh mortar or concrete wherever possible. If kneeling is absolutely necessary, then appropriate waterproof personal protective equipment must be worn. Do not eat, drink, or smoke when working with NovoCrete® to avoid contact with skin or mouth. Before starting to work with NovoCrete®, apply a barrier creme and reapply it at regular intervals. Immediately after working with NovoCrete® or cement-NovoCrete® containing materials, workers should wash or shower or use skin

moisturizers. Remove contaminated clothing, footwear, watches, etc. and clean thoroughly before re- using them.

Eye/face protection:

Wear approved glasses or safety goggles according to UNE-EN 166 when handling dry or wet NovoCrete® to prevent contact with eyes.

Skin protection:

Use watertight, wear- and alkali-resistant protective gloves (e.g. nitrile-soaked cotton gloves with CE marking) internally lined with cotton; boots; closed long-sleeved protective clothing as well as skin care products (e.g. barrier creams) to protect the skin from prolonged contact with wet NovoCrete®-cement. Care should be taken to ensure that NovoCrete®-cement does not enter the boots. For the gloves, respect the maximum wearing time to avoid skin problems. In some circumstances, such as when laying concrete or screed, waterproof trousers or kneepads are necessary.

Respiratory protection:

When a person is potentially exposed to dust levels above exposure limits, use appropriate respiratory protection. The type of respiratory protection should be adapted to the dust level and conform to the relevant UNE standard, (e.g. UNE EN 149or national standard.

Thermal hazards:
Not applicable.

Use	PROC*	Expo-sure	Specification of respiratory protective equipment (RPE)	RPE efficiency assigned protection factor (APF)
Industrial manufacture/formulation of hydraulic building and construction materials	2, 3	Duration is not restricted (up to 480 minutes per shift, 5 shifts a week)	not required	-
	14, 26		A) P1 respiratory protective or B) not required	APF = 4
	5, 8b, 9		A) P2 respiratory protective or B) P1 respiratory protective	APF = 10 APF = 4
Industrial use of dry hydraulic building and construction materials (indoor, outdoor)	2		not required	-
	14, 22, 26		A) P1 respiratory protective or B) not required	APF = 4 -
	5, 8b, 9		A) P2 respiratory protective or B) P1 respiratory protective	APF = 10 APF = 4
Industrial use of wet suspension of hydraulic building and construction materials	7		A) P1 respiratory protective or B) not required	APF = 4 -
	2, 5, 8b, 9 10, 13, 14		not required	-
Professional use of dry hydraulic building and construction materials (indoor, outdoor)	2		P1 respiratory protective	APF = 4
	9, 26		A) P2 respiratory protective or B) P1 respiratory protective	APF = 10 APF = 4
	5, 8a, 8b, 14		A) P3 respiratory protective or B) P1 respiratory protective	APF = 20 APF = 4
	19		P2 respiratory protective	APF = 10
Professional uses of wet suspensions of hydraulic building and construction materials	11		A) P2 respiratory protective or B) P1 respiratory protective	APF = 10 APF = 4
	2, 5, 8a, 8b, 9, 10, 13, 14, 19		not required	-

PROC's are identified uses and defined in section 16.

An overview of the APFs of different RPE (according to UNE EN 529:2005) can be found in the glossary of MEASE (16).

Any RPE as defined above shall only be worn if the following principles are implemented in parallel: The duration of work (compare with "duration of exposure" above) should reflect the additional physiological stress for the worker due to the breathing resistance and mass of the RPE itself, due to the increased thermal stress by enclosing the head. In addition, it shall be considered that the worker's capability of using tools and of communicating are reduced during the wearing of RPE.

For reasons as given above, the worker should therefore be (i) healthy (especially in view of medical problems that may affect the use of RPE), (ii) have suitable facial characteristics reducing leakages between face and mask (in view of scars and facial hair). The recommended devices above which rely on a tight face seal will not provide the required protection unless they fit the contours of the face properly and securely.

The employer and self-employed persons have legal responsibilities for the maintenance and issue of respiratory protective devices and the management of their correct use in the workplace. Therefore, they should define and document a suitable policy for a respiratory protective device program including training of the workers.

Environmental exposure controls:
Air: Environmental exposure control for the emission of NovoCrete® particles into air must be in accordance with the available technology and regulations for the emission of general dust particles.
Water: Do not wash NovoCrete® into sewage systems or into bodies of water, to avoid high pH Above pH 9 negative ecotoxicological impacts are possible.
Soil and terrestrial environment: No special emission control measures are necessary for the exposure to the terrestrial environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
This information applies to the whole mixture.

(a) Appearance: Dry NovoCrete® is a finely ground solid inorganic material (grey or white powder). Main particle size: 5-30 µm
(b) Odor: Odorless
(c) Odor threshold: No odor threshold, odorless
(d) pH: (T = 20°C in water, water-solid ratio 1:2): 11-13.5
(e) Melting point: > 1250 °C
(f) Initial boiling point and boiling range: Not applicable as under normal atmospheric conditions, melting point >1250°C
(g) Flash point: Not applicable as is not a liquid.
(h) Evaporation rate: Not applicable as is not a liquid.
(i) Flammability (solid, gas): Not applicable as is a solid which is noncombustible and does not cause or contribute to fire.

through friction

(j) Upper/lower flammability or explosive limits: Not applicable as is not a flammable gas.
(k) Vapor pressure: Not applicable as melting point > 1250 °C
(l) Vapor density: Not applicable as melting point > 1250 °C
(m) Relative density: 2.75-3.20 g/cm³ (T=20ºC); Apparent density: 0.9-1.5 g/cm³ (T=20ºC)
(n) Solubility (ies) in water (T = 20 °C): slight (0.1-1.5 g/l)
(o) Partition coefficient: n-octanol/water: Not applicable as is inorganic mixture
(p) Auto-ignition temperature: Not applicable (no pyrophoricity – no organo-metallic, organo-metalloid

or organo-phosphine bindings or of their derivatives, and no other pyrophoric constituent in the composition)

(q) Decomposition temperature: Not applicable as no organic peroxide present
(r) Viscosity: Not applicable as not a liquid
(s) Explosive properties: Not applicable. Not explosive or pyrotechnic. Not in itself capable by chemical reaction of producing gas at such temperature and pressure and at such a speed as to cause damage to the surroundings. Not capable of a self-sustaining exothermic chemical reaction.

(t) Oxidizing properties: Not applicable as does not cause or contribute to the combustion of other materials
Other information: Not applicable.

10. STABILITY AND REACTIVITY

Reactivity:
When mixed with water, NovoCrete® + cement will harden into a stable mass that is not reactive in normal environments.

Chemical stability:
Dry cement + NovoCrete® is stable if they are properly stored (see Section 7) and compatible with most other building materials. They should be kept dry.

Contact with incompatible materials should be avoided.

Wet NovoCrete® is alkaline and incompatible with acids, with ammonium salts, with aluminum or other nonnoble metals. NovoCrete® dissolves in hydrofluoric acid to produce corrosive silicon tetrafluoride gas. NovoCrete® 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.

Possibility of hazardous reactions:
NovoCrete® does not cause hazardous reactions.

Conditions to avoid:
Humid conditions during storage may cause lump formation and loss of product quality.

Incompatible materials:
Acids, ammonium salts, aluminum, or other non-noble metals. Uncontrolled use of aluminum powder in wet cement + Novo- Crete® should be avoided as hydrogen is produced.

Hazardous decomposition products:
NovoCrete® will not decompose into any hazardous products.

11. TOXICOLOGICAL INFORMATION

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 additive/clinker dust. Based on available data, the classification criteria are not met.	Literature survey
Skin corrosion/ irritation	2	Cement/additive in contact with wet skin without appropriate personal protective equipment, 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/additive 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/additive may cause corneal damage by mechanical stress, immediate or delayed irritation or inflammation. Direct contact by larger amounts of dry cement/additive or splashes of wet cement/additive may cause effects ranging from moderate eye irritation (e.g. conjunctivitis or blepharitis) to chemical burns and blindness.	(10), (11)
Skin sensitization	1B	Some individuals may develop eczema upon exposure to wet cement/additive dust, caused either by the high pH which induces irritant contact dermatitis after prolonged contact, or by an immuno-logical 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/additive contains a soluble Cr (VI) reducing agent and as long as the mentioned peri-od of effectiveness of the chromate reduction is not exceeded, a chromates sensitizing effect is not expected [Reference (3)].	(3), (4), (17)
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 mutagenicity	-	No indication. Based on available data, the classification criteria are not met.	(12), (13)
Carcinogenicity	-	No causal association has been established between Portland cement/additive exposure and cancer. Epidemiological literature does not support the designation of Portland cement/additives as suspected human carcinogen. Portland cement/additive 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/additive 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/additive 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/additives are not used as an aerosol.	

Apart from skin sensitization, NovoCrete® + Portland cement clinker and common cements have the same toxicological and eco-toxicological properties.

Medical conditions aggravated by exposure

Inhaling cement + NovoCrete® 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.

12. ECOLOGICAL INFORMATION

Toxicity

The product is not hazardous to the environment. Ecotoxicological tests with NovoCrete® + 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.

Persistence and degradability: Not relevant. After hardening, NovoCrete® + cement presents no toxicity risks.
Bio accumulative potential: Not relevant. After hardening, NovoCrete® + cement presents no toxicity risks.
Mobility in soil: Not relevant. After hardening, NovoCrete® + cement presents no toxicity risks.
Results of PBT and vPvB assessment: Not relevant. After hardening, cement presents no toxicity risks.
Other adverse effects: Not relevant.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Do not dispose of it in sewage systems or surface waters.

Product - NovoCrete® that has exceeded its shelf life:
EWC entry: 10 13 99 (wastes not otherwise specified), (and when demonstrated that it contains more than 0.0002% soluble
Cr (VI)): 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 entry: 10 13 06 (Other particulates and dust) Pick up dry unused residue or dry spillage as is. Mark the containers. Possibly reuse depending upon effectiveness of the reducing agent (cement bags and delivery documents will contain the storage period) and the requirement to avoid dust exposure. In case of disposal, harden with water and dispose according to “Product – after addition of water, hardened”

Product – slurries
Allow to harden, avoid entry in sewage and drainage systems or into bodies of water (e.g. streams) and dispose of as explained below under “Product - after addition of water, hardened”.

Product - after addition of water, hardened
Dispose of according to the local legislation. Avoid entry into the sewage water system. Dispose of the hardened product as concrete waste. Due to the initiation, concrete waste is not dangerous waste.
EWC entries: 10 13 14 (waste from manufacturing of cement – waste concrete or concrete sludge) or 17 01 01 (construction and demolition wastes - concrete).

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

14. TRANSPORT INFORMATION

Information relative to transport:
NovoCrete® is not covered by the international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID),
Therefore, no classification is required.

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

UN number:
Not relevant

UN proper shipping name:
Not relevant

Transport hazard class(es):
Not relevant

Packing group:
Not relevant

Environmental hazards:
Not relevant

Special precautions for user:
Not relevant

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
Not relevant

15. REGULATORY INFORMATION

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

EU regulatory information:
NovoCrete® + Cement is a mixture according to REACH and is not subject to registration. NovoCrete® + Cement clinker is
exempt from registration (Art 2.7 (b) and Annex V.10 of REACH).

National regulatory information:
The marketing and use of NovoCrete® + cement is subject to a restriction on the content of soluble Cr (VI) (REACH Annex XVII point 47 Chromium VI compounds and Orden PRE/1954/2004).

1. "The NovoCrete® + cement and the mixtures that contain NovoCrete® will not be able to use or to commercialize if, once hydrated, its chromium content (VI) soluble is higher than to 2 mg/kg (0,0002) of total the dry weight of NovoCrete® + cement."

2. "When reducing agents are used, and without damage of the application of other Community regulations on classification, packaging and labelled of substances and mixtures, the suppliers will guarantee, before the commercialization, that the NovoCrete® package or the mixtures that contain NovoCrete®, are identified visible, legible and indelible with information on the date of packaging, as well as on the conditions of storage and the time of storage adapted to maintain the activity of the reducing agent and the chromium content (VI) soluble below the indicated limit in point 1."

3. For a reason or purpose of exception, points 1 and 2 will not be applied to the commercialization and the use in controlled, closed processes and totally automated in which the cement and the mixtures that contain cement, only are handled by ma- chines and in that any possibility of contact with the skin does not exist."

Chemical Safety Assessment:
No chemical safety assessment has been carried out for this mixture.

National regulations (Canada):
Regulation for the Protection Against Hazardous Substances (Hazardous Substances Regulation - **Hazardous Products Act (HPA)** and the **Hazardous Products Regulations (HPR)** under the **Workplace Hazardous Materials Information System (WHMIS 2015)**:
Water Hazard Class: WGK 1 classification, substances are slightly hazardous to water and must be handled to prevent water contamination.

GISCODE: ZP 1 (products containing cement, low in chromate)
Storage Class according to National Fire Code of Canada (NFC) and **Canadian Standards Association (CSA)** guidelines**:** Storage Class 13 (non-combustible solids)
Waste Classification: Canadian Environmental Protection Act (CEPA) (Waste Catalogue Regulation)
Technical Rule for Hazardous Substances 900 Occupational Exposure Limits (CCOHS)
Technical Rule for Hazardous Substances 402 Identifying and Assessing Hazards in Activities Involving Hazardous Substances:
Inhalative Exposure (TRGS 402)

16. OTHER INFORMATION

Identified uses and use descriptors and categories:
The table below gives an overview of all relevant identified uses of NovoCrete® or cement-NovoCrete® containing hydraulic binders. All the uses have been grouped in these identified uses because of the specific conditions of exposure for human health and environment. For each specific use, a set of risk management measures or localized controls has been derived (see section 8) which need to be put in place by the user of cement or cement containing hydraulic binders to bring the exposure to an acceptable level.

PROC	Identified Uses - Use Description	Manufacture/ Formulation of	Professional/ Industrial use of
		building and construction materials	
2	Used in closed, continuous process with occasional controlled exposure.	X	X
3	Used in closed batch process.	X	X
5	Mixing or blending in batch process for formulation of mixtures and articles.	X	X
7	Industrial spraying.		X
8a	Transfer of substance or mixture from/to vessels/large containers at dedicated facilities.		X
8b	Transfer of substance or mixture from/to vessels/large containers at non- dedicated facilities.	X	X
9	Transfer of substance or mixture into small containers.	X	X
10	Roller application or brushing.		X
11	Non-Industrial spraying.		X
13	Treatment of articles by dipping and pouring.		X
14	Production of mixtures or articles by tableting, compression extrusion, palletizations.	X	X
19	Hand-mixing with intimate contact and only PPE available.		X
22	Potentially closed processing operations with minerals/metals at elevated temperature in industrial setting.		X
26	Handling of solid inorganic substances at ambient temperature.	X	X

Abbreviations and acronyms:

ACGIH	**American Conference of Industrial Hygienists**
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 (Regulation (EC) No 1272/2008)**
COPD	**Chronic Obstructive Pulmonary Disease**
DNEL	**Derived no-effect level.**
EC50	**Half maximal effective concentration**
ECHA	**European Chemicals Agency EPA Type of high efficiency air filter ES Exposure scenario**
EWC	**European Waste Catalogue**
FF P	Filtering facepiece against particles (disposable) FM P Filtering mask against particles with filter cartridge Hazardous Substances Ordinance.
HEPA	**Type of high efficiency air filter**
H&S	**Health and Safety**
IATA	**International Air Transport Association**
IMDG	**International agreement on the Maritime transport of Dangerous GoodsLC50 Median lethal dose**
MEASE	**Metals estimation and assessment of substance exposure, EBRC Consulting GmbH for Eurometals, http://www.ebrc.de/ebrc/ebrc-mease.php**
MS	**Member State**
OELV	**Occupational exposure limit value PBT Persistent, bio-accumulative and toxic PNEC Predicted no-effect concentration PROC Process category**
RE	**Repeated exposure**
REACH	**Registration, Evaluation and Authorization of Chemicals**
RPE	**Respiratory protective equipment**
SCOEL	**Scientific Committee on Occupational Exposure Limit Values**
SDS	**Safety Data Sheet SE Single exposure**
STP	**Sewage treatment plant**
STOT	**Specific Target Organ Toxicity**
TLV-TWA	**Threshold Limit Value-Time-Weighted Average**
TRHS	Technical Rules for Hazardous Substances.
VLE-MP	**Exposure limit value-weighted average in mg by cubic meter of air**
vPvB	**Very persistent, very bio-accumulative**
w/w	**Weight by weight**
WWTP	**Wastewater treatment plant**

Disclaimer:
The information on this data sheet reflects the currently available knowledge and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product, including the use of the product in combination with any other product or any other process, is the responsibility of the user.

It is implicit that the user is responsible for determining appropriate safety measures, use it in the recommended period and for applying the legislation covering his/her own activities.