MATERIAL SAFETY DATA SHEET
According to (EU) 2020/878

FLEXIBLE PLUS T530.S1

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1. Identification of the Substance/Mixture and of the Company

1.1. Product identifier – FLEXIBLE PLUS T530.S1 UFI: MJS2-Y011-H00Q-KFK9

1.2. Relevant identified uses of the substance or mixture and uses advised against
Cement-based adhesive for ceramic and stone floorings and facings.

1.3. Details of the supplier of the safety data sheet

TERAZID Ltd.
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1.4. Emergency telephone number: **112**
UMHATEM "Pirogov" (toxicology): +359 2/ 915 44 11
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2. Hazards identification

2.1. Classification of the substance or mixture
2.1.1. Classification in according to Regulation (EC) 1272/2008 - CLP:

Skin Irrit. 2 - Causes skin irritation
Eye Dam. 1 - Causes serious eye damage
STOT SE 3 - May cause respiratory irritation

2.2. Label elements

Signal word: **Danger**

Hazard statements:
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H335 – May cause respiratory irritation.

Precautionary statements:
P102 – Keep out of reach of children.
P261 – Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P315 – IF IN EYES: Rinse cautiously with water for several minutes Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 – If skin irritation occurs: Get medical advice/attention.

2.3. Other hazards

Contains Portland cement. When reacting with water, it creates an alkaline medium. **Does not contain soluble Cr (VI) into a quantity greater than 0,0002 % within the period of storage.** In case the storage conditions are not suitable or the product has expired, Portland cement can cause skin sensitization (H317 or EUH 203).

May cause damage to materials made of aluminium or other non-precious metals.

3. Composition/information on ingredients

3.1 Substances – N/A

3.2 Mixtures

General chemical description: *Dry mixture based on Portland cement, mineral fillers and modifying additives, which are not classified as hazardous, according to Regulation (EC) 1272/2008 - CLP.*

Information on hazardous ingredients according to Regulation (EC) 1272/2008 – CLP:

CAS №	EC №	Ingredient name	Content %	Signal word	H-codes
65997-15-1	266-043-4	Portland cement	20-40 %	Danger 	H315, H317, H318, H335

4. First aid measures

4.1. Description of first aid measures

General notes – No special protective equipment is required for the first aider. Avoid contact with the moistened mixture.

Inhalation – Remove the victim to fresh air. If the symptoms remain, get qualified medical attention.

Skin contact – Wash the contact area with soap and water. Remove the contaminated clothing. If skin irritation or rash occurs: Get medical advice/ attention.

Eye contact – Rinse with plenty of water for a period of at least 15 minutes and open eyelid. Remove contact lenses, if present. Continue rinsing with water. Do not rub the contaminated eye to avoid eventual further damage to the cornea. In case of necessity, get medical attention (ophthalmologist).

Ingestion – Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Obtain medical attention (toxicology).

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

This product contains cement. Contact between cement and body fluids (e.g. sweat, eye moisture) can cause irritation or burns.

If large amounts of dust are inhaled over a long period of time, the product may cause irritation of the respiratory tract and increase the risk of lung disease.

In case of skin contact, the product may react with moisture (sweat) and cause irritation, significant inflammation, scabs, swellings and others.

In case of eye contact, the product may cause serious eye injury, such as corneal clouding or iris lesions.

4.3. Indication of any immediate medical attention and special treatment needed – Follow the advises given in section 4.1. In case of accident or unwellness, seek medical attention immediately (show the product label or Safety Data Sheet if possible).

5. Firefighting measures

FLEXIBLE PLUS T530.S1 is **non-combustible and non-explosive product.**

5.1. Extinguishing media

The mixture is non-flammable and non-combustible, both in the delivery state and during operation, as well as during the performance period.

Suitable extinguishing media: Suitable for the surrounding environment and the type of fire - water mist, water spray, dry powder, foam, carbon dioxide.

Unsuitable extinguishing media: Water under pressure.

5.2. Special hazards, arising from the substance or mixture

Non-known. The mixture is non-combustible and non-explosive.

5.3. Advice for firefighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus. Separately collect the contaminated water from extinguishing the fire so that it does not enter the drain system. Move undamaged packages out of the danger area if it can be done safely.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Ventilate the area. Avoid contact with eyes and skin. Do not inhale dust. Wear suitable protective equipment.

6.1.2. For emergency responders

No special measures are required.

6.2. Environmental precautions

Do not allow to be released in the environment. If the mixture gets into an aqueous environment, it can cause above 9 pH value increase, which will lead to a danger for the environment. Take measures to prevent pollution of surface and underground water, soil, as well as discharge into the sewers.

6.3. Methods and material for containment and cleaning up

Remove the spilled amount mechanically using vacuum suction unit, or shovel into bags, by taking measures to prevent the formation of high concentrations of dust in the air. Keep the material dry if possible. Store the collected quantities to in special, tightly closed and labelled containers. After that hand them over to persons, holding a permit in accordance with Article 37 of the Waste Management Act.

7. Handling and Storage

7.1. Precautions for safe handling

Use the product only for its main purpose. Do not eat, drink or smoke while working with the product. Avoid skin and eye contact. Ventilate the area. Keep dust levels to a minimum. Wash hands thoroughly after use. Do not allow to be released in the environment or the sewer system.

7.2. Conditions for safe storage, including any incompatibilities

The substance should be stored under dry conditions. Any contact with water and moisture should be avoided. Keep out of reach of children. Keep away from food and drink.

7.3. Specific usage – N/A.

8. Exposure Controls/Personal Protection

8.1. Control parameters

Name	Affecting	Allowable level	
Портланд цимент	respiratory	5 mg/m³ air	inhaled dust particles for 8 hours

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Avoid dusting during use. Provide appropriate ventilation. Provide suitable vacuuming equipment.

8.2.2. Personal protective equipment

8.2.2.1. Eye and face protection 	Avoid contact with eyes. Use tight-fitting safety glasses.
8.2.2.2. Skin protection 	Avoid skin contact. Use alkali-resistant protective gloves. Use protective standard working clothes fully covering skin. Use boots and appropriate clothing with long sleeves.
8.2.2.3. Respiratory protection 	Avoid inhalation of dust. Use a dust protective mask, filter (FFP2).

8.2.3. Environmental exposure controls

No special measures are necessary. Do not allow to be released in the environment, the sewer system or underground waters. Observe the dustiness during work, according to the limit normative values.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

a) Physical state – powder
b) Colour – white or white
c) Odour – odourless
d) Melting point/freezing point – melting point > 1250 °C
e) Initial boiling point and boiling range – N/A
f) Flammability – non-flammable, non-combustible
g) Upper/lower flammability or explosive limits – N/A
h) Flash point – N/A
i) Auto-ignition temperature – N/A
j) Decomposition temperature – N/A
k) pH (20 °C) ≈ 12
l) Viscosity – N/A
m) Solubility in water – partially soluble
n) Partition coefficient: n-octanol/water – N/A
o) Vapour pressure – N/A
p) Density or relative density ≈ 1.7 g/cm³ (bulk density)
q) Vapour density – N/A
r) Explosive properties - non-explosive
s) Particle characteristics – N/A

9.2. Other information – No data.

10. Stability and reactivity

10.1. Reactivity – Alkaline reaction with water. When mixed with water, the product hardens into a stable mass that is not reactive under normal conditions.

10.2. Chemical stability – The product is stable, under normal conditions of storage and use.

10.3. Possibility of hazardous reactions – No possibility of hazardous reactions.

10.4. Conditions to avoid – Protect from moisture during storage and transport.

10.5. Incompatible materials – Acids, ammonium salts, aluminium or other non-precious metals. When reacting with non-precious metals, hydrogen is released.

10.6. Hazardous decomposition products – Does not decompose into hazardous products.

11. Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) 1272/2008 - CLP

Acute toxicity (dermal) – Limit test, rat, 24 hours exposure, 5 mg/m³ - no acute toxicity observed. Based on the available data, the mixture is not classified in the "Acute toxicity (dermal)" category.

Acute toxicity (Inhalation) - Limit test, rabbit, 24 hour exposure, 2,000 mg/kg body weight - no lethal outcome. Based on the available data, the mixture is not classified in the "Acute toxicity (inhalation)" category.

Acute toxicity (oral) – Based on the available data, the mixture is not classified in the "Acute toxicity (oral)" category.

Skin irritation/Corrosion – In contact with wet skin, the Portland cement, in the mixture composition, may cause roughening, cracking or splitting of the skin. Prolonged contact combined with rubbing can cause severe burns. Some people may develop eczema after exposure to wet cement dust, caused by the high pH value, which can cause irritant contact dermatitis. Based on the available data, the mixture is classified as irritating to skin (H315 – Causes skin irritation).

Serious eye damage/eye irritation – The Portland cement, in the mixture composition, causes various reactions on the cornea, with an estimated irritation index of 128. The product may cause serious eye injury such as corneal clouding or iris lesions. Direct contact with cement can cause damage to the cornea due to mechanical stress. It can also cause irritation or inflammation, which may occur immediately or later. Direct contact with larger quantities of dry cement or splashes of wet cement can cause effects that range from moderate eye irritation (eg, conjunctivitis or blepharitis) to chemical burns and blindness. Based on the available data, the mixture entails a risk of serious damage to the eye (H318 – Causes serious eye damage).

Respiratory or skin sensitization – Some people may develop eczema when exposed to wet cement dust, caused by the mixture pH value or by an immunological reaction to soluble Cr (VI) – an allergic reaction. The result can appear in a variety of forms, ranging from a mild rash to severe dermatitis. The product does not contain soluble Cr (VI) into a quantity greater than 0,0002 % within the period of storage, from which it follows that an immunological reaction and an allergic sensitizing effect are not expected during this period.

No indication of respiratory tract sensitization. Based on the available data, the mixture is not classified in the "Respiratory Sensitization" category.

Mutagenicity – There is no indication. Based on the available data, the mixture is not classified in the "Germ cell mutagenicity" category.

Carcinogenicity – There is no evidence for direct link between Portland cement and carcinogenic diseases. The epidemiological literature does not identify cement as an expected human carcinogen. Based on the available data, the mixture is not classified in the "Carcinogenicity" category.

Reproductive toxicity – Based on the available data, the mixture is not classified in the "Reproductive toxicity" category.

STOT - specific target organ toxicity (single exposure) – Cement dust can irritate the throat and respiratory tract. Coughing, sneezing and breath shortness may occur after exposures at occupational exposure limits. Overall, the evidence clearly shows that occupational exposure to cement dust leads to deficits in respiratory function. However, currently available evidences are insufficient to establish the connection between the dose and these effects.

STOT - specific target organ toxicity (repeated exposure) – Prolonged inhalation of cement dust above the occupational exposure limit can lead to coughing, breath shortness and chronic obstructive changes in the respiratory tract. No chronic effects were observed at low concentration. Based on the available data, the mixture is not classified in the "Specific target organ toxicity (repeated exposure)" category.

Inhalation hazard – N/A.

11.2. Other information - No data. The mixture is not an aerosol.

12. Ecological information

12.1. Toxicity - The product is not hazardous for the environment. The ecotoxicological test with Portland cement on water flea - Daphnia magna and on Selenastrum algae showed little toxicological impact. Therefore, LC50 and EC50 values cannot be determined.

Adding large amounts of the mixture to water, however, can cause the pH value to rise and therefore can, under certain conditions, be toxic to aquatic organisms.

12.2. Persistence and degradability - Not relevant for inorganic substances.
12.3. Bio-accumulative potential – Not relevant for inorganic substances.
12.4. Mobility in soil – Not relevant for inorganic substances.
12.5. Results of PBT and vPvB assessment – Not relevant for inorganic substances.
12.6. Endocrine disrupting properties – N/A.
12.7. Other adverse effects – No data.

13. Disposal considerations

13.1. Waste treatment methods

Do not dispose in surface water, soil or the sewer system. Do not treat as domestic waste.

Residual quantity or spilled material should be collected in special, tightly closed, labelled containers and temporarily stored.

Residual quantities of dry material can also be mixed with water, avoiding any contact with the skin, and treated as concrete waste after hardening. The wastes should be stored temporarily and after that they should be handed over to persons, holding a permit in accordance with Article 37 of the Waste Management Act.

The used packages are only meant for packing this product. They should not be reused for other purposes. After usage, empty the packages completely and treat them as paper packaging waste.

EWC - European Waste Catalogue:
10 13 06 – Particulates and dust.
10 13 14 – Waste concrete and concrete sludge.
15 01 01 – Paper and cardboard packaging.

14. Transport information

It is not dangerous goods according to RID, ADR, ADNR, IMDG, IATA-DGR and no classification is required.

It should be transported under the respective rules for transportation, concerning the respective type of transport and ensuring the safety of the load.

No special precautions are necessary, except those mentioned in point 8.

14.1. UN number or ID number – N/A.

14.2. UN proper shipping name – N/A.

14.3. Transport hazard class(es) – N/A.

14.4. Packing group – N/A.

14.5. Environmental hazards – N/A.

14.6. Special precautions for user – Avoid any release of dust during transportation.

14.7. Transport in bulk according to IMO instruments – N/A.

15. Regulatory information

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

The product is classified as a mixture according to REACH and is not subject to registration. The mixture contains Portland cement. Does not contain soluble Cr (VI) in an amount greater than 0.0002 % within the period of storage (REACH, Annex XVII, point 47).

National regulations:

- Law of protection from the harmful Impact of the chemical substances and preparations.
- Environmental protection law.
- Health and safety at work law.
- Regulation №3 on the minimum requirements for safety and protection of the workers when using personal protective equipment at the workplace.
- Waste management law.
- Regulation №2 from 23.07.2014 for waste classification.
- Regulation on the order and the method of classification, labelling and packaging of chemical substances and preparations.

European regulations:

- Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- Regulation (EC) 1272/2008 – CLP from 16th December 2008, concerning t the classification, labelling and packaging of substances and mixtures.
- Regulation (EU) 2020/878 from 18 June 2020, amending Annex II to Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.2. Chemical safety assessment.

No chemical safety assessment has been performed for the mixture.

16. Other information

16.1. Indication of changes

Format in accordance with **Regulation (EU) 2020/878** from 18 June 2020, amending Annex II to **Regulation (EC) 1907/2006** concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

The mixture is classified according to **Regulation (EC) 1272/2008 – CLP** from 16th December 2008, concerning t the classification, labelling and packaging of substances and mixtures.

16.2 Classification and procedure used to obtain the qualification of mixtures according to Regulation (EC) 1272/2008 - CLP

Causes skin irritation, Skin Irrit. 2 (H315)	Test data
Causes serious eye damage, Eye Dam. 1 (H318)	Test data
May cause respiratory irritation, STOT SE 3 (H335)	Test data

16.3. Abbreviations and acronyms

ADR/RID	Agreements Concerning the International Carriage of Dangerous Goods by Rail (RID) and by Road (ADR) and the Joint meeting of RID Safety Committee and the Working Party on the Transport of Dangerous Goods
CAS	Chemical Abstracts Service in American Chemical Society
CLP	Regulation (EC) 1272/2008 from 16th December 2008, concerning t the classification, labelling and packaging of substances and mixtures
DNEL	Derived no-effect level
EC50	Half maximum effective concentration
ECHA	European Chemicals Agency
EINECS	European Inventory of Existing Chemical Substances
EPA	Effective air filter
EWC	European Waste Catalogue
FF P	Filtering type „facepiece" for fine particles (single usage)
FM P	Filtering mask for fine particles with filter cartridge
HEPA	Type of high efficiency air filter
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal concentration at which 50% of test animals die
PBT	Persistent, Bio-accumulative and Toxic
PNEC	Predicted no-effect concentration
REACH	Regulation (EC) 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
RPE	Respiratory protective equipment
SE	Single exposure
STP	Sewage treatment plant
STOT	Specific target organ toxicity
UFI	Unique Formula Identifier
vPvB	Very persistent and Very bio-accumulative
w/w	Weight per weight (mass percentages)

16.4. Main references and sources of literature data

(1) Portland Cement Dust - Hazard assessment document EH75/7, UK Health and Safety Executive - http://www.hse.gov.uk/pubns/web/portlandcement.pdf

(2) Observations on the effects of skin irritation caused by cement, Kietzman et al, Dermatosen, 47, 5, 184-189 (1999)

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

(4) Epidemiological assessment of the occurrence of allergic dermatitis in workers in the construction industry related to the content of Cr (VI) in cement, NIOH, Page 11, 2003

(5) U.S. EPA, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 3rd ed. EPA/600/7-91/002, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1994)

(6) U.S. EPA, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 4th ed. EPA/600/4-90/027F, Environmental Monitoring and Support Laboratory, U.S. EPA, Cincinnati, OH (1993)

(7) Environmental Impact of Construction and Repair Materials on Surface and Ground Waters. Summary of Methodology, Laboratory Results, and Model Development. NCHRP report 448, National Academy Press, Washington, D.C., 2001

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

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

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

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

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

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

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

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

(16) Occurrence of allergic contact dermatitis caused by chromium in cement. A review of epidemiological investigations, Kåre Lenvik, Helge Kjuus, NIOH, Oslo, December 2011

(17) Technische Regel für Gefahrstoffe „Arbeitsplatzgrenzwerte", 2009, GMBI Nr.29 S.605

(18) MEASE 1.02.01 Exposure assessment tool for metals and inorganic substances, EBRC Consulting GmbH für Eurometaux, 2010

16.5. Hazard and precautionary statements

Hazard statements:
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H335 – May cause respiratory irritation.

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/fume/gas/mist/vapours/spray.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P315 – IF IN EYES: Rinse cautiously with water for several minutes Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 – If skin irritation occurs: Get medical advice/attention.
P402 – Store in a dry place.
P501 – Dispose of contents/container in accordance with the regulations.

16.6. Training advice

In addition to the training programs on environment and health and safety of the workers, the companies need to be sure that their workers read, understand and observe the requirements of the MSDS.

16.7. Disclaimer

This safety data sheet and the data inside of it are based on many years of industrial and commercial experience and are fully complied with the current active legislation of the Republic of Bulgaria and the European Union. This safety data sheet is not intended to guarantee any specific properties and qualities of the product. The information inside of it is reliable but, on the circumstance, that the product is used in accordance with the indicated conditions and the application, specified on the package and/or in the technical literature. Responsibility of any other use of the product, including when using it in combination with another product or process is completely under the responsibility of the user. It is understood that the user is responsible for defining the appropriate precautions and for applying the legislation, concerning his own activity.