



**ECOLOGICAL REPORT ON NOVO CRETE
REPORT NUMBER C06493**

ORIGINAL

Date : 03-04-2013

This is to report that we, CIS Commodity Inspection Services, have received a sample of NovoCrete from Messers Geo Konzept d.o.o. The sample has been analyzed which revealed following results:

Applicant : AHMED ELBADAWI MOHAMED SALIH
KHARTOUM - SUDAN

Supplier : GEO KONCEPT D.O.O
ZAGREBAČKA 25
10430 SAMOBOR
CROATIA

Producer : IBS GMBH
NEUE WEINSTEIGE 33
70180 STUTTGART
GERMANY

Country of origin : Germany

Service needed : Ecological profile and sample analysis

Introduction:

NovoCrete is used for the construction of high-quality bearing layers using the existing soil, it accelerates the cement hydration process and increases the resistance to pressure, the static and dynamic moduli of elasticity, the resistance to bending and tensile strength, the resistance to freezing and soil stabilisation rich in humus.

Unlike the traditional methods of construction, with NovoCrete and cement, the coating of the upper layers of multipurpose roads is possible without the use of mineral bearing layers or layers made to protect against freezing, thus saving money and time needed for the construction.

NovoCrete is used in countries as: Germany, USA, Saudi-Arabia, Russia, Switzerland, Italy, Croatia and Indonesia.

NovoCrete can be used for the following:

- Construction of roads and highways
- Approach roads and site roads
- Areas for shopping and production halls, container areas including foundation
- Forest tracks and farm roads (asphalt layer is not required)
- Slope stabilisation and the construction of dams
- The construction of railway lines and routes
- Airport runways
- Bulk cargo terminals (metal, wood, etc.)

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- Stabilisation and immobilization of soil containing hazardous waste
 - Rehabilitation of waste tip
 - Harbours, docks

NovoCrete has the following environmental effects:

- NovoCrete is a completely natural product – as its composition is made of different natural minerals that accelerate the immobility of deleterious substances which are placed in the environment. These are heavy metals, organic parameters which are permanently fixed into the newly created crystal structures of soil.
- Due to the usage of material found at the dig there are no harmful effects on the environment.
- The protection of ground (due to water impermeability of stabilized layer there is no capillary water rising).
- The possibility of usage near the source (well area) of spring water.
- Emission of greenhouse gases is reduced 700-1400% as well as the fossil fuel consumption.
- Avoidance of additional exploitation of the stone material and a removal of a construction rubble stockpiling from the existing pavement structure.
- The possibility of using masonry demolition fragments in building roads, installing in embankments, etc. (steel-mill slag, slag + fly ash, carbonate sludge).

The above environmental effects were subject to consultation by CIS with experts in the field and are confirmed to be true.

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Testing:

Sampling date(s) : Sampling done by IBS GMBH and forwarded to us.

Sample quantity : 3 kg

Analysis:

Conducted by order of CIS by independent ISO laboratory Greit Service in Italy on a representative sample revealed satisfactory average results.

CHEMICAL & PHYSICAL PROPERTIES	Parameter		Results
	Mobility		none
	Absorption		binding heavy metal
	Desorption		none
	Decomposition		none
	Accumulation		no bio-accumulation
	Eco-toxicity		none
	Heavy metals: • Arsenic (As) • Cadmium (Cd)	mg/kg mg/kg	1.2 7.8

The radioactivity test has been conducted by order of CIS by independent ISO Laboratory Applus RTD in The Netherlands on a representative sample revealed satisfactory average results.

Parameter	Detection limit	Results
¹³⁴ Cs	10 Bq/kg	not detected
¹³⁷ Cs	10 Bq/kg	not detected
Free from any harmful radiation		
In compliance with regulation 3954/87/Euratom and amendment 2218/89, regulation 737/90/EEG and supplement 686/95/EEG and 616/2000, and regulation 297/2011/EU and supplement PBEU L 97/20, regarding the maximum permissible levels of radioactive contamination of food- and feeding stuff, expressed in [Bq/kg].		

Polycyclic Aromatic Hydrocarbon (PAHs):

Sample description	Binder contents (M-%)	PAHs in binder (mg/kg)
Collecting sample asphalt from break Labor-no: 1665-1667	8.49	130

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Chemicals:

Chemical Composition	Concentration
Chloride (natural)	25 – 35 %
Oxide (natural)	35 – 40 %
Sulphate (natural)	10 – 20 %
Silicate (natural)	10 – 25 %

Physical – Chemical properties:

Form: powder / granulate	Smell and colour: smell-less, white to grey	Smell threshold value: unknown
Specific weight: 1000 kg / m ³ at 20 °C	pH-value in dest. H ₂ O: 9	Steam pressure: unknown
Melting point in °C: ≥ 1.000 °C	Freezing point in °C: unknown, solid	Gas density (Air = 1) unknown, fast
Combustion: no		Spontaneous combustion: no
Explosion danger: no		Dangerous products of combustion: no
Physical State: solid Specific gravit: 3 - 3.5 Evaporation rate: not applicable Solubility in water: < 1% Coefficient of water/oil distribution: not available		

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Other Information:

Product information:

Product description: NovoCrete®		Product use: Soil Stabilization	
Producer: ibs GmbH (i. G.)		Chemical family: Alkaline Earth Minerals	Distributor: GEO KONCEPT d.o.o.
Street: Neue Weinsteige 33		Street: Zagrebačka 25	
City: D-70180 Stuttgart	Country: Germany	City: 10430 Samobor	Country: Croatia
Means of usage: Cement additive; to be used in soil stabilization			

Composition:

Ingredient	%	CAS Number	LD50	LC50
non hazardous	100	none	not applicable	not applicable

Ecology:

Mobility: no (an-organic mineral phases)	Adsorption: Binding of heavy metals
Desorption: no	Decomposability: no (an-organic mineral phases)
Accumulation: no bio-accumulation	Eco toxicology: no

Stability and Reactivity stability:

Stability: Stable under normal conditions of use
Incompatible substances: May react with strong acids
Dangerous solution products: unknown
Hazourdhous thermal decomposition products: none known
Hazourdhous polymerization: Will not occur

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Toxicological properties:

Means of contact: Skin contact: to be avoided Absorption through skin: to be avoided Eye contact: to be avoided Inhalation: to be avoided Swallowing: unknown		
Chronic effects: none Sensitization: none known Carcinogenicity: none known Mutagenicity: not known Reproductive toxicity: not known		
Actions to be taken in case of acute contact: - In case of inhalation or swallowing of the material a medical doctor should be consulted and patient should rinse with sufficient water. - In case of eye contact immediate rinse with water.		
Effects of long exposure to product: unknown		
Maximum exposure: unknown	Irritation: unknown:	Interactions: unknown
Proof of sensibilisation, cause to cancer, cause to mutation, reproduction toxicology, teratogenity and narcotic actions? unknown		

First aid measures:

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or breathing.	
Swallowing: Swallowing of dangerous amounts is not likely, but in case of swallowing start vomiting, rinse mouth out with water and drink plenty of water. If significant quantities were ingested, seek medical advice.	
Eye contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention.	
Skin contact: Quickly and gently brush away excess chemical. Wash with soap and water. Remove contaminated clothing and laundry before reuse. Get medical attention if irritation persists.	
Further Information: no	Source decoding: GefStoffV
Producer: ibs GmbH Neue Weinsteige 33 D-70180 Stuttgart Stuttgart; 02. Travanj 2011.	

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Protection of labour:

Personal protective outfit: Safety glasses, leather gloves, dust mask as prevention measures against eye -, skin-, and inhalation contact. Coveralls.	Inhalation protection: Dust concentration > TWAEV (Timed Weighted Average Exposure limit) 10 mg / m ³ ; Usage of dust mask.
Eye protection: Safety glasses in case of dust; Usage of contact lenses is not recommended	Shoes: Closed shoes, boots for example to avoid skin contact
Further protective wear: no	
Usage in enclosed areas: Ventilation is advised when dust burdening is > 10 mg / m ³ TWAEV	
Use only in a well ventilated area. Adequate ventilation should be provided to keep dust concentrations below acceptable exposure limits.	
Measures to be taken in case of spillage or leakage: Clean with dry means of cleaning; minimization of dust, avoid inhalation.	
Disposal: Disposal should be made in accordance with national and local regulations. Consult local waste authorities for direction and/or approvals prior to disposal.	
Handling: Avoid creating dust. Use only in a well ventilated area. Wear specified protective equipment.	
Storage: Keep container dry. Keep in a cool, well ventilated place.	
Special information for sea transport: No risks for sea transport.	

Fire fight measures:

Flashpoint (method): none Lower explosion limit (% v/v): not applicable Upper explosion limit (% v/v): not applicable Auto-ignition temperature: not applicable Special Hazards: none Extinguishing media: Use appropriate media for surrounding fire. Special firefighting procedures: Fire-fighters should wear self-contained breathing apparatus and full protective clothing when fighting chemical fires. Hazardous combustion products: none Sensitivity to static discharge: no Sensitivity to mechanical impact: no

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Transport information:

TDG
Proper Shipping Name: NOT RESTRICTED
UN No.: NA
Hazard Class - Primary:
Hazard Class - Secondary:
Packing Group:
AIR TRANSPORT (ICAO/IATA)
Proper Shipping Name: NOT RESTRICTED
UN No.: NA
Hazard Class - Primary:
Hazard Class - Secondary:
Packing Group:
MARINE TRANSPORT (IMDG/IMO)
Proper Shipping Name: NOT RESTRICTED
UN No.: NA
Hazard Class - Primary:
Hazard Class - Secondary:
Packing Group:
EmS:

For and on behalf of
CIS Commodity Inspection Services®
(ISO independent and analytical Laboratory)



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