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Mineral Bond LV

Product code: SIL 2C
Product specification: Organo-Mineral Injection Resin
Category: Urea-silicate

Introduction

Mineral Bond is a two-component, organic and mineral resin with high strength, designed for strata consolidation. It is suitable for stabilization of ground /soil (for heavily cracked rock mass) sealing of gas penetration of stopping of water inflows.

- Adjustable setting time
- Low viscosity of the both components
- Low starting viscosity after mixing of components
- Excellent mechanical properties
- Very good adhesion to the substrate in wet and dry conditions
- No reaction with water and no alteration of material parameters due to contact with water.
- Excellent corrosion resistance

Components

	Unit	Mineral Bond comp. A	Mineral Bond comp. B
Appearance	-	Colourless liquid	Dark brown liquid
Density at 20 °C	g/cm^3	1.45±0.04	1.21±0.04
Viscosity at 25 °C	mPa*s	250±50	200±50
Viscosity at 10 °C	mPa*s	950±50	850±50

Material properties

Mechanical parameters

	Unit	25 °C
Foam Factor	-	1.0
Viscosity after mixing (A+B)	mPa*s	280-300
Reaction Start Time	s	30-60
Reaction End Time	s	120-190
Max. Reaction Temp.	°C	< 110
Ultimate Compressive Strength	MPa	> 20
Flexural Strength	MPa	> 10

* Results obtained under laboratory conditions.

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Application

The components Mineral Bond A and Mineral Bond B can be applied at the volumetric ratio of 1:1 by means of any two-component pump that is commonly used in the mining and tunneling industries. It is recommended to use a static mixer of the type: M-10x360 (part no. M-10x360) or an equivalent one.

The mixing ratio of the components:

	Mineral Bond component A	Mineral Bond component B
by volume v/v	100	100
by weight m/m	120	100

If components A and B are mixed at a different ratio, the reaction time and mechanical properties may deviate from specifications as above.

Cleaning of the Injection Pump and Accessories

After application, the processing equipment, i.e. the pumping system, valves, mixing devices, and hoses, must be thoroughly cleaned to remove all remnants of materials. The cleaning must be carried out immediately after completion of the injection process to prevent the curing of resins inside the equipment.

A-Component

The A pump stage and all associated equipment, from the suction hose to the Y-piece, must be thoroughly rinsed with clean water. Then the pump should run for at least 3 minutes with clean water in circulation. Do not use any cleaner/solvent for cleaning the A-side, as this may react violently with the water glass component (A-component) of the system.

B-Component

Thoroughly flush out the B-component, which has not reacted. Use a gasket-friendly cleaning agent, change the cleaning liquid several times during each cleaning process and collect it for disposal. To be sure, carefully read the operation manual of the injection pump and the data sheet of the cleaning agent to be used. If the pump is out of operation for more than 24 hours, replace all water on the A side and the cleaner/solvent on the B side with a preservative liquid. Remnants of resin cured in the pump circulation system can only be etched and mechanically removed.

Packaging

Type of packaging	Component	Weight kg	Shipping code
Plastic container	A B	37 29	MBnd-LV-A-25P MBnd -LV-B-25P
Metal container 20 l	A B	28 22	MBnd -LV-A-20M MBnd -LV-B-20M
Metal drum 200 l	A B	290 230	MBnd -LV-A-200M MBnd -LV-B-200M
IBC container 1000 l	A B	1470 1140	MBnd -LV-A-1000 MBnd -LV-B-1000

Other packaging possible on the request.

Transport and storage

The both components of the resin are delivered in jerry cans made of plastic or sheet metal (other packaging is possible on request). They should be stored in dry and airy rooms, at a temperature from 10 °C to 30 °C. The guaranteed shelf life from the date of manufacture is 12 months for Mineral Bond LV A Component and Mineral Bond LV B Component provided that the product is kept in unopened original packaging.

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Tests and approvals

The system meets the German mining approval standards according to the Arnsberg District Government Department 6 Mining and Energy in NRW requirements:

1. Reaction temperature and flash point, DMT GmbH.
2. Material consistency and auto-ignite determination.
3. Determination of compressive, bending, and tensile strength, Central Mining Institute.
4. Compilation with NSW Australian Mining Standards, Mine Safety Technology Centre.
5. “Examination of an elution behavior of the silicate-based injection resin” Ecotoxicological effects investigation on ground water. MFPA Leipzig GmbH, Germany.
6. Mining hygiene testing and assessment of two-component systems for rock consolidation in accordance with §10 of the Mining Ordinance for Hard Coal Mines (BVOSt) and §18 of the Mining Ordinance for ore mines, rock salt mines, and for rock and earth operations (BVOESSE) in conjunction with DIN 22100. Hygienic Institute, Gelsenkirchen.

Environment and safety instructions

Empty containers can be disposed only via authorized companies, subject to their terms and conditions. The materials cannot be returned to the production site or to the distribution depots. Remnants of the material can be disposed via local authorized companies in line with applicable environmental regulations. Please refer to the safety data sheets (MSDS) for more information on the disposal of remaining leftovers, as well as of empty containers.

Product must be applied in strict compliance with all applicable protective regulations and with the Material Safety Data Sheets (MSDS) issued by DSI Schaum Chemie. According to Annex II of EU Regulation 1907/2006, safety data sheets must be available to all persons responsible for occupational safety, health protection and for handling of the materials. Product application and cleaning of the equipment may only be carried out in protective clothing with safety gloves and goggles. According to current knowledge, the use of a suitable skin protection cream is recommended. Skin contamination must be cleaned with soap and water. If splashes get into the eye, rinse eyes with copious amount of water and consult a doctor. The components or mixed material must not be allowed to enter sewage systems or the ground.

Liability disclaimer

The information in this leaflet is based on our knowledge and experience. It is assumed to be up to date at the time of printing, as stated above. Therefore, please make sure that you always use the most recent version of it. The description of product properties as laid down in this data sheet is general and cannot take account of all special conditions and circumstances that affect the application of the product. Since the product handling and application are beyond our control, it is the exclusive responsibility of a user to make sure that the product is suitable for the intended application and enables achieving the desired results.

All information contained in this leaflet is given in good faith but without warranty or guarantee of any kind whatsoever, whether implied or expressed. Every user is held responsible for reviewing the details contained herein and assess whether the product in the appropriate or not.

No statement in this leaflet constitutes a warranty in the legal sense.

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