

Tunnelling and Civil Engineering

CarboPur S

Technical Data Sheet



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Uses

Fast reacting two-component injection resin, free of VOCs, CFC and halogen. This resin is designed for stabilisation of largely loosened, dry or slightly moist strata zones

- o Consolidation and stabilisation of dry and naturally moist gravel formations
- o Bonding of injection bolts, in particular the IRMA system
- o Sealing of loose strata formations and of shafts against gas release
- o Repair of old tunnels, vaults, and roadways
- o Repair of accessible sewers

Technical data

The data below are laboratory data. They may vary in practice by thermal exchange between resin and concrete, the surface properties of the concrete, humidity, pressure, and other factors.

Reaction data

Starting temperature	15 °C	25 °C	Test Method
Mix viscosity after 40 s	770 ± 100 mPa*s	630 ± 100 mPa*s	MCT PV10/302
Start of foaming	1'25" ± 10"	54" ± 7"	MCT PV10/302
End of foaming	1'55" ± 10"	1'15" ± 10"	MCT PV10/302
Foaming Factor	3 ± 1	3 ± 1	

Material data

		Component A	Component B	Standard
Density at 25 °C	kg/m ³	1000 ± 30	1230 ± 30	DIN 12791
Colour		honey	dark brown	
Flash point	°C	> 200	> 200	DIN 53213
Viscosity at 25 °C	mPa*s	310 ± 40	200 ± 50	ISO 3219
Viscosity at 15 °C	mPa*s	670 ± 80	500 ± 100	ISO 3219

Composition and properties

CarboPur S, Comp. A is a mixture of various polyether polyols and additives which reacts with the B-Comp. to form a tough/hard polyurethane resin foam.

CarboPur, Comp. B is a polyisocyanate on the basis of 4,4'-diphenylmethane diisocyanate (MDI).

Application

The two components are pumped by a dual component pump at the volumetric ratio of 1:1, then mixed thoroughly in a static mixer unit prior to injection into the strata via a packer installed in a previously drilled borehole.

Approx. 1 minute after mixing the resin foams within 15 - 20 s and is forced by the foaming pressure into fissures down to 0.1 mm of width and thus is capable of caulking not only fissures but even larger cleats or coarse-particle loose formations, such as gravel.

Recommendation:

We recommend that before processing, the product be stored for at least 12 h at a minimum temperature of 15 °C to achieve the recommended processing temperature of between 15 to 30 °C.

When the material is warmed up, local overheating. e.g. at the container wall, must be avoided by any means.

Risk and safety phrases for the handling of CarboPur S

Observe the usual precautionary measures for handling chemicals.

Component A

R52/53 Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

S26 In case of contact with eyes, rinse immediately with plenty of water. S28 After contact with skin, wash immediately with plenty of water and soap. S37/39 Wear suitable gloves and eye/face protection. S61 Avoid release to the environment.

Component B:

Symbol: Xn (harmful)

R20 Harmful by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R42/43 May cause sensitization by inhalation and skin contact.

S23 Do not breathe spray. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28 After contact with skin, wash immediately with plenty of water and soap. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S38 In case of insufficient ventilation, wear suitable respiratory equipment. S45 In case of accident or if you feel unwell, seek medical advice immediately (safety data sheet available from manufacturer on request).

Persons who are exposed to CarboPur S or to any other polyurethane resins on a regular basis should undergo preventive medical examinations. Consult safety data sheets for additional information.

Packing

The filling quantities of the packages correspond to the metering ratio of the components (1 : 1 parts by volume)

CarboPur S, Component A

20 kg in a can

CarboPur, Component B

24 kg in a can

Other packing units on request.

Storage, shelf life: at least six months from date of delivery or twelve months from date of production when stored in a dry place between 10 und 30 °C. If this time is exceeded, we recommend the material is checked by Minova CarboTech for compliance with specification.

Disposal:

Follow local regulations.

We recommend either to dispose of liquid residues in an incineration plant (EU disposal code 070208 "other reaction and distillation residues") or to cure the liquids in ratio Component A : water : Component B = 2 : 1 : 2 and dispose of the cured foam in a domestic waste landfill or an incineration plant (EU disposal code 120105 "plastic parts").

Empty cans should be cleared of liquid by punching a hole through the edge of the cover and turning them upside down, until liquid does not flow out any longer.

Certificates and expertise available:

- Hygiene assessment with respect to groundwater risks (Hygiene Institut Gelsenkirchen)
- Expertise on mechanical characteristics (DMT Essen)

The data in this sheet conform to our best knowledge and experience at the date of printing, which is indicated below. The state of knowledge and experience are evolving constantly. Please pay attention therefore, that you always refer to the current version of this data sheet.

The description of the product application in this sheet cannot take the special conditions and circumstances into account emerging from the individual case. Please check our product therefore in any case prior to use for its aptitude in the actual application. Application, use and processing of our product occur outside of our control capabilities. That is why they as well as the processing result achieved based on our information are exclusively subject to your own responsibility.

No data in this sheet constitute a guarantee in a legal sense. It is clarified that our liability is limited to the contractual acknowledgements for the purchase of this product.

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