

## CONSTRUCTION

# CarboCryl Plus

## AQUEOUS LATEX DISPERSION FOR USE WITH CARBOCRYL HV OR WV

*CE identification according DIN EN 1504-5*

*Classification: U (S2) W (1) (1/2/3) (5/40)*

*CarboCryl Hv / CarboCryl Plus*

## DESCRIPTION

CarboCryl Plus is a dispersion based on polyacrylate, which can be added to CarboCryl Hv or Wv in place of water for the preparation of the B component. CarboCryl Plus is an aqueous latex dispersion.

Attention: The liquid CarboCryl-Component is damaged irreversibly by frost. The cured gel remains flexible.

## APPLICATION AND USE

The application of CarboCryl Plus increases the flexibility as well as the adhesion of acrylate gels to siliceous surfaces. The solids content also is increased, thus reducing the shrinkage of the gel in dry environment. This is especially important in places with high ventilation as e. g.

- Repair of dilatation joints with CarboCryl Wv Plus
- Crack repair with CarboCryl Hv Plus

Applicable at temperatures from 5 °C to 40 °C.

Exposure scenarios according to REACH: Water contact durable, inhalation alternate, processing.

## ADVANTAGES

- The addition of CarboCryl Plus results in acrylategels containing reduced water content therefore higher solids content. So adhesion, elasticity and shrinking can be improved by modification with CarboCryl Plus.



## TECHNICAL DATA

The data below are laboratory data. They may vary in practice by thermal exchange between resin and concrete, moisture, and other factors.

## MATERIAL DATA

Parameter	Unit	Details
Density at 20 °C	kg/m <sup>3</sup>	1025 ± 10
Colour		white
Consistency		liquid
Viscosity at 20 °C	mPa*s	7 ± 3

## REACTION DATA

Specific Mixing ratio A : B	p. b. vol.		1/1	
CarboCryl brand		CarboCryl Hv Plus		CarboCryl Wv Plus
Blend A1 + A2 / CarboCryl Plus + B2- solution*	p. b. w.	20+1/20+B2		20+0.5/17+B2
Mixing viscosity at 25 °C	mPa*s		< 50	
Mixing density at 25 °C	kg/m <sup>3</sup>		1124±10	

\*see the table below:

Amount B2-salt per batch	CarboCryl Hv Plus		CarboCryl Wv Plus	
	10 °C	20 °C	10 °C	20 °C
40 g	26min 30s ± 3min	19min 30s ± 2min	2min 45s ± 30s	1min 40s ± 20s
100 g	16min ± 2min	11min 20s ± 1min	1min 40s ± 20s	50s ± 15s
200 g	12min ± 1min	8min 15s ± 40s	50s ± 15s	30s ± 10s

## APPLICATION METHOD

CarboCryl Plus is used for the preparation of the B component in CarboCryl Hv or Wv in place of water. The flask with the required amount of B2 component (hardener, 300 g max. per batch) is filled halfway with water and shaken vigorously, until the salt is dissolved. Then the salt solution is mixed into the B1 can (CarboCryl Plus).

The prepared B component is processed in the usual manner with a self-priming two-component pump in stainless steel in a 1 : 1 mixing ratio with the A component of CarboCryl Hv or Wv (cf. Technical Data Sheets of CarboCryl Hv resp. Wv).

The gel times with the various quantities of B2 can be taken from the tables above.

With CarboCryl Plus, a quantity of 300 g per batch must not be exceeded; for CarboCryl Wv 200 g B2 are recommended.

Within the processing time all equipment can be cleaned with water. Partially and completely cured material can only be removed mechanically.

CarboCryl Plus increases the tensile strength, the flexibility as well as the adhesion of the gel to siliceous substrates and decreases the shrinking/swelling of the cured gels.

Following characteristics are proved by test reports:

- CarboCryl Wv Plus is suitable for the repair of defective dilatation joints. The seal can withstand joint width movements up to 40 % and a water pressure of 0.8 bar.<sup>1</sup>
- No signs of progressive corrosion could be detected on reinforcing steel embedded in CarboCryl Hv Plus even after four months. Cracks of 0.3 mm width, filled with CarboCryl Hv Plus, were still tight against 4 bar (55 psi) water pressure after widening to 0.5 mm.<sup>2</sup>

## SAFETY INSTRUCTIONS AND LIMITATIONS

Observe the general safety regulations when handling chemicals, see MSDS.

The use of CarboCryl Plus is not recommended for soil injection (curtain grouting) due to the significantly higher mix viscosity.

In case of repeated injections attention must be paid that before the following injection a curing time of 10 min is kept. Otherwise, the gel being formed may be destroyed mechanically.

In case that on a site both CarboCryl and polyurethane have to be injected, first the higher viscous polyurethane shall be used, then the lower viscous CarboCryl gel.

## PACKAGING AND TRANSPORTATION

All forms of packing are approved to the danger goods regulation road, railway, domestic shipping.

The component is delivered in 20 l (20 kg) units.

## STORAGE AND SHELF LIFE

At least six months after delivery or twelve months after production, for dry storage between 10 °C and 30 °C. When this time is exceeded, we recommend having the material checked by Minova for compliance with specifications. Keep from frost or direct exposition to sunlight.

CarboCryl Plus is damaged irreversibly by frost! The local legislation on storage has to be taken into consideration.

**DISPOSAL**

Follow local regulations.

**APPROVALS AND CERTIFICATES**

1. Repair sealing of a dilatation joint with CarboCryl Wv Plus (MFPA Leipzig, 2003)
2. Tests for the application of CarboCryl Hv Plus (MFPA Leipzig, 2004)
3. Application as grout for sealing of reinforced concrete structural elements (Engineering office Raubach, 2009)
4. 4EC Declaration of Conformity (Essen, 2009)
5. CE-identification according to DIN EN 1504-5, classification: U (S2) W (1) (1/2/3) (5/40)
6. Qualifying examination after the injection gel policy 804.61.02 of DB AG of CarboCryl Wv or CarboCryl Wv/CarboCryl Plus (MFPA Leipzig, 2010)

Test according to EN 1504-5: U (S2)W(1)(1/2/3)(5/40)	Details
Water tightness	S2
Viscosity	≤ 60 mPas, filling degree > 95
Corrosion behavior	Verifiable no corrosive effect
Changing of volume and mass by air drying and water	Air drying: ca. -15 %
bearing	Water bearing: ca. +20 %
Sensitivity compared to water	Passed
Sensitivity compared to Wet-dry-cycles	Passed
Compatibility with concrete	Passed
Disposal of hazardous materials	Correlation with EN 1504-5, 5.4

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**ADDITIONAL DOCUMENTATION**

- MSDS of CarboCryl Plus

**LIST OF REPRESENTATIVES**

- AUSTRIA: Minova MAI GmbH
- CZECH REPUBLIC: Minova Bohemia s.r.o.
- FRANCE / BELGIUM: Sales office Minova France / Belgium
- GERMANY: Minova CarboTech GmbH
- ITALY: Minova CarboTech GmbH Italy branch
- KAZAKHSTAN: Minova Kazakhstan LLP
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