CE

0749 / EN 1504-5
U(S1)W(1)(1/2/3/4)(5/30)

PC® 509 Rubber ACRYL

Acrylate injection liquid with excellent toughness, elasticity and physical properties

1. Description

PC® 509 Rubber Acryl is a tough and elastic five-component acrylate-based injection fluid in which the salt (= the initiator = component B = PC® 509 Init) is not dissolved in water as is usually the case with acrylic injection products, but in a strengthening polymer blend (PC® 509 Rubber Acryl Strengthener, Component C). The use of this strengthening polymer blend leads to excellent physical properties of the gel.

2. Application

PC® 509 Rubber Acryl is an elastic five-component acrylate injection resin specifically developed for injecting structures in which waterproofing imposes strict requirements on the physical properties of the gel masses (fluctuating groundwater levels, settling of the concrete, expansion joints, etc.).

3. Properties

- Sealing injection of cracks, fissures and voids in concrete and masonry.
- Curtain injections (around tunnel segments, drainpipes, porous concrete structures, etc.).
- **PC® 509 Rubber Acryl** is especially suitable for treating leaks in tunnels. These leaks can be due to expansion joints and fissures or cracks in the concrete of floor plates, walls or tunnel roofs.
- **PC® 509 Rubber Acryl** has outstanding adhesion to mineral surfaces (concrete, brick) and has an expansion in contact with water.
- Low viscosity allows deep penetration into fissures and cracks.
- Good general chemical resistance.
- Free from harmful solvents and non-flammable.
- **PC® 509 Rubber Acryl** gels have outstanding water retention capacity, so that there is no crack formation in the gel as a result of injected fissures and voids drying out under the influence of fluctuations in the groundwater level. Because the salt (= the initiator = component B = PC® 509 Init) is not dissolved in water, as is usually the case with acrylic injection resins, but in a strengthening polymer blend (PC® 509 Rubber Acryl Strengthener, Component C), the gel has improved physical properties such as outstanding cohesion upon swelling, good stability, high water retention capacity, outstanding behaviour through wet-dry cycles, and superior tear strength in comparison to standard acrylate injection liquids.

4. Technical data (typical values)

- Component A_1 (**PC® 509 Rubber Acryl**):
  - Appearance: purple-pink liquid
  - Viscosity (20 °C): 18 mPas
  - Density: 1,173 g/ml
  - pH: 5 - 6

TECHNICAL DATASHEET

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  - Solid matter content: 42% - 48%
  - Fully miscible with water
- Component A_2 (PC® 509 Rubber Acryl Additive):
  - Appearance: clear, transparent liquid
  - Viscosity (20 °C): 5 mPas
  - Density: 0,931 g/ml
  - pH: 10 - 11
  - Fully miscible with water
- Component A_3 (PC® 509 Cat):
  - Appearance: pale-yellow liquid
  - Viscosity (20 °C): 22 mPas
  - Density: 1,11 g/ml
  - pH: 11 - 12
  - Fully miscible with water
- Component B (PC® 509 Init): white, water-soluble powder
- Component C (PC® 509 Rubber Acryl Strengthener):
  - Appearance: white liquid
  - Viscosity (20 °C): 25 mPas
  - Density: 1,019 g/ml
  - pH: 7 - 8
  - Solid matter content: 40% - 43%
  - Fully miscible with water
- Mixed Acrylate (A_1 + A_2 + A_3 + B + C):
  - Pot Life: Adjustable and dependent on the amount of PC® 509 Init (Component B)
  - Appearance: whitish - pink
  - Viscosity (20 °C): ± 25 mPas
  - Flash Point: Not applicable
  - Density: ± 1,09 g/ml
  - Solids: 40% - 50%
  - Corrosiveness – Non-Corrosive: Non-Corrosive
- Cured Acrylate:
  - Tensile Strength: < 0,5 MPa (20° C)
  - Elongation: > 250% (20° C)
  - Bond Strength (when applied on concrete – cohesive failure in the cured acrylate chemical grout): No adhesive failure between the concrete and the cured acrylate grout.
  - Shrinkage: < 15 mass%
- Minimum processing temperature: 5 °C
- Shelf life: 6 months after production date in the original, unopened and undamaged packaging, stored between + 5 °C and + 25 °C in a dark place. If **PC® 509 Rubber Acryl** is stored at temperatures higher than 25 °C the shelf life of **PC® 509 Rubber Acryl** cannot be guaranteed.

5. Processing

The **PC® 509 Rubber Acryl** system consists of five components:

- A_1: PC® 509 Rubber Acryl (the resin)
- A_2: PC® 509 Rubber Acryl Additive (the resin additive)
- A_3: PC® 509 Cat (the catalyst)
- B: PC® 509 Init (the initiator)
- C: PC® 509 Rubber Acryl Strengthener (the strengthening polymer blend)

Two solutions are prepared for processing.

Solution 1:
This is a mixture of the PC® 509 Rubber Acryl resin (component A_1) with the PC® 509 Rubber Acryl Additive (component A_2) and PC® 509 Cat (component A_3).

Solution 2:
This is a mixture of the PC® 509 Init (component B) with the PC® 509 Rubber Acryl Strengthener (component C).

To produce the acrylate gel, these two solutions are mixed in a 1/1 volume ratio. **PC® 509 Rubber Acryl** is injected into the crack, fissure or void with a two-component pump (manual, electric or pneumatic). Machine parts that come into contact with the resin should be made of stainless steel.
Reaction times (20 °C; at higher temperatures the gel time decreases. At lower temperatures the gel time increases):

To change the reaction time, keep the quantity of catalyst constant and only vary the quantity of initiator.

Solution 1: Mix components A_1 (24,910 kg), A_2 (0,090 kg) and A_3 (1,25 kg) until a homogenous mixture is achieved.
Solution 2: Add X kg of B component to component C (22,8 kg).

Disolve x kg B comp in the C comp (22,8 kg)					
Solution 1	**1,14 kg (5 wt% comp C)**	**0,912 kg (4 wt% comp C)**	**0,684 kg (3 wt% comp C)**	**0,57 kg (2,5 wt% comp C)**	**0,456 kg (2 wt% comp C)**
	19 sec	18 sec	21 sec	27 sec	36 sec
	0,228 kg (1 wt% comp C)	**0,114 kg (0,5 wt% comp C)**	**0,057 kg (0,25 wt% comp C)**	**0,0285 kg (0,125 wt% comp C)**	
	1 min 15 sec	2 min 54 sec	7 min 10 sec	18 min	

Only prepare as much solution 1 and solution 2 as can be used the same day.

6. Sizes and weights

- PC® 509 Rubber Acryl (component A_1): 24,910 kg plastic jerrycans.
- PC® 509 Rubber Acryl Additive (component A_2): 0,090 kg plastic jerrycans.
- PC® 509 Cat (component A_3): 1,25 kg plastic jerrycans.
- PC® 509 Init (component B): 0,625 kg plastic pots.
- PC® 509 Rubber Acryl Strengthener (component C): 22,8 kg plastic jerrycans.

7. Cleaning

Clean the equipment with water.

8. Precautions and safety recommendations

- Protect the product from UV light and sunlight and store between 5°C and 25°C.
- Irritant: wear safety goggles and gloves.
- In case of contact with the skin: wash with water and soap. Rinse well afterward.
- In case of contact with the eyes: rinse for several minutes with clean water. Consult a doctor.
- Mix leftovers with sand and sawdust and dispose according to local regulations.
- For more information we refer you to the safety data sheets for the various products.

CE

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U(S1)W(1)(1/2/3/4)(5/30)
Concrete injection product for swelling filling of cracks

Watertightness	≥ 2 x 10^5 Pa
Workability – Viscosity	≤ 60 mPa.s
Corrosion behavior	Deemed to have no corrosive effect
Expansion ratio and evolution by water storage	Volume change: ± 120 %
Durability – sensitivity to water	The expansion reaches a constant level
Durability – sensitivity to wet-drying cycles	No modification of the expansion ratio
Durability – compatibility with concrete	Pass
Dangerous substances	comply with 5.4