

Methacrylate based injection system for sealing and consolidation works in presence of water.



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0370-CPR-2739

EN 1504-5

Concrete injection product

APPLICATIONS

The ACRYLINJECT R system is used for sealing and consolidation works in presence of water. The substance is injected through packers or injection hoses. The low viscosity of the product assures high fluidity. It's a hydrophilic system with a controlled set time used in the following applications:

- Treatment of water infiltration and ground water ingress.
- Treatment of soils.
- Treatment of voids and cavities, in the form of sand grouts.
- Injection of water bearing cracks in concrete or masonry walls.
- Injection of (re-) injectable injection hoses.
- Injection of compartments in (PVC) liners.

APPLICATION PRESCRIPTIONS

- **The following mixtures need to be prepared**

Mixture 1:

ACRYLINJECT R RESIN (A1) + ACRYLINJECT CATALYST (A2)

Mixture 2:

ACRYLINJECT INITIATOR (B1) + water

or

ACRYLINJECT INITIATOR (B1) + ACRYLINJECT POLYMER (B2)

or

ACRYLINJECT INITIATOR (B1) + a mixture of water and ACRYLINJECT POLYMER (B2)

The mixtures are then mixed in ratio of 1:1

Prepare the mixture of components A1 +A2 and B1 + water (or B2 or water/B2) in two opaque plastic containers each with a lid. Take an equal volume of each component and check the setting time of the mixture. Adjust the ratio if necessary. The mixture of component A1 + A2 is stable for at least a few hours, if kept covered in a cool and dry place even longer. The mixture of component B1 + water (or B2 or water/B2) is stable for a few days below a temperature of 25°C.

- **Application**

For slow setting one can use a mono-component pump. Only prepare amounts that can be injected before the gel sets by mixing one volume of components A1 + A2 and one volume of component B1 + water (or B2 or water/B2). For all types of setting, the use of a two component methacrylate pump is recommended. Both the mixtures are injected in a volume ratio of 1:1.

- **Handling**

When handling the ACRYLINJECT R system, observe the recommendation set out in the MSDS sheets. Only stainless steel or plastic containers can be used (PVC, polyethylene, polypropylene). Avoid any contact between component A2 and component B1 without having been diluted in their respective mixture (A1 + A2 and B1 + water (or B2 or water/B2)). The mixtures have to be perfectly homogeneous before use. Do not add more than three volumes of water. Cleaning of equipment: water.

HOW DOES ACRYLINJECT R WORK?

The ACRYLINJECT R system is a non-toxic aqueous solution of multifunctional methacrylates. The compound gels in a few seconds to a few minutes when an activator or initiator is added just before use. The final product is a soft and tacky crosslinked gel. In wet or dry conditions, the volume of the gel increases or decreases in a reversible manner assuring perfect waterproofing.

PROPERTIES OF THE INJECTION FLUID

- **Composition**

The standard injection fluid is obtained by mixing two mixtures in a ratio of 1:1. However depending on the conditions of the injected substrate the quantity of water present in the injection solution may be up to 3 time the volume of resin.

- **Viscosity**

The viscosity of the ACRYLINJECT solution will depend on the temperature and dilution. It will remain constant up to the setting point.

- **Setting point**

Gelling slows down at low temperature but still fast even below 0°C. In acid conditions the reaction is slowed down, while under alkaline conditions the reaction is speeded up. The presence of minerals and metals (specially iron and copper) may increase or decrease the rate of setting, depending on their concentration. When immersed in water the unconfined gel can absorb up to 2 times its own weight of water in a few weeks without cracking. Under humid conditions the volume of the gel will remain approximately constant. In the absence of water, the gel will slowly shrink, without cracking. These dimensional changes are reversible and do not degrade the gel. For better control of dry-wet cycles use ACRYLINJECT POLYMER.

TECHNICAL DATA

The ACRYLINJECT R system consists of 3 (optional 4) products:

- Component A1: ACRYLINJECT R RESIN.
- Component A2: ACRYLINJECT CATALYST, a liquid activator for standard setting times between 10 seconds and 30 minutes.
- Component B1: ACRYLINJECT INITIATOR, in powder form to be dissolved in water or in ACRYLINJECT POLYMER or in a mixture of water and ACRYLINJECT POLYMER.
- Optional component B2: ACRYLINJECT POLYMER, a liquid polymer in which ACRYLINJECT INITIATOR can be dissolved instead of water, in order to get an acrylic gel with higher mechanical properties.

Characteristics	
Appearance	Orange liquid
Active content	42%
Water solubility	Soluble
pH	6,5-7,0
Density at 20°C	1,2 kg/l
Viscosity at 20°C	10-30 mPa.s (EN ISO 3219)
Dry-wet cycles	Conform (EN 14498)
Resistance to pH	Up to 12

REACTION TIME

ACRYLINJECT R					
5% cat					
Temp.	0,5% init	1% init	2,5% init	4% init	5% init
5°C	15' 30"	7' 48"	4' 07"	3' 12"	2' 47"
10°C	10' 10"	7' 23"	3' 16"	2' 27"	1' 53"
15°C	7' 58"	4' 15"	2' 30"	1' 25"	1' 05"
20°C	3' 47"	2' 17"	1' 13"	52"	45"
25°C	2' 44"	1' 59"	52"	35"	27"

PACKAGING

- A1 component (resin): 20 kg
- A2 component (catalyst): 3 kg
- B1 component (initiator): 1 kg
- B2 component (polymer): 20 kg

Can be supplied under private label.

STORAGE

Store at a temperature above 0°C and below 25°C. Do not expose directly to light or sunlight. Storage in these conditions for min. 12 months.

A longer shelf life is possible, subject to test retained sample.

SAFETY AND HEALTH PRECAUTIONS

For more information, consult the safety data sheet.