

# GELACRYL™ AR

Poly-acrylate injection system with improved wet-dry characteristics using standard Gelacryl resins combined with a polymer blend reinforcing agent

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## Product Description

GELACRYL™ Acrylic Rubbers are 2-component poly-acrylate gels. The A-component is a poly-acrylate resin, the B-component is a polymer blend. The 2-components are injected with a 2-component 1:1 ratio piston pump. Once polymerised, GELACRYL™ Acrylic Rubbers form a resilient, highly elastomeric gel. Due to their exceptionally low viscosity and low surface tension, GELACRYL™ Acrylic Rubbers show better penetration into cracks than water

- Resin = GELACRYL™/GELACRYL™ SR/GELACRYL™ Superflex
- Polymer blend = GELACRYL™ AR2
- Catalyst = TE 300
- Initiator = SP 200
- Decelerator = KF 500

## Product Advantages

- GELACRYL™ AR injection systems are injected with a twin piston, 1:1 ratio pump.
- Exceptionally low viscosity. GELACRYL™ AR penetrates into cracks 0.1 mm wide.
- Excellent post-expansion properties in contact with water.
- GELACRYL™ AR does not need continuous contact with water.
- Excellent adhesion to concrete when GELACRYL™ Superflex is used.
- Very good chemical resistance to most acids, alkalis and biological attack (\*).
- Can be used in temperatures ranging from 5 °C to 70 °C.
- Poly-acrylate resin, free of acryl-amides.

(\*) For chemical resistances please contact your GCP representative.

## Field of Application

GELACRYL™ Acrylic Rubbers are used in applications where fluctuating groundwater levels are encountered. The addition of the polymer blend in the B-component improves the wet-dry characteristics of the cured compound.

### GELACRYL™/GELACRYL™ Superflex

- Remedial repair of water leaks.
- Preventative waterproofing of structures.
- Water control during tunnelling operations.
- Curtain grouting.
- Waterproofing subterranean structures in concrete or masonry (cellars, underground car parks, etc.).
- Waterproofing cracks in concrete or rock.

- Waterproofing tunnel segments.
- Waterproofing tunnel liners.
- Dilatation joints with small dilatation (GELACRYL™ Superflex)

## GELACRYL™ SR

- Sewer joint repair (automated or manual).
- Water control during tunnel operations.
- Waterproofing of underground concrete or masonry structures

## Application

Consult the Material Safety Data Sheet (MSDS) before mixing and/or handling.

- GELACRYL™ Acrylic Rubbers are developed to be used below ground in applications with a fluctuating groundwater level.
- Holes are drilled in the affected area.
- Water can be forced into the hole to determine whether all cracks can be injected and if additional injection/pressure control holes need to be drilled.
- Visible surface leaks and cracks should be sealed with a fast setting cement prior to injection. Allow the cement to harden completely before injecting GELACRYL™ Acrylic Rubbers.
- Use standard packers or equipment according to local standards.
- GELACRYL™ Acrylic Rubbers is then injected into the holes with a high pressure pump capable of reaching pressures up to 200 bars. This forces the GELACRYL™ Acrylic Rubber deep into the structures and allows penetration into the smallest cracks.
- When surface leaks show up during pumping, stop immediately and seal the leak by approved method.

### 1. Composition

- The injection grout needs to be prepared immediately before the injection.
- Both components are pre-weighted, no further dilution of component 2 with water is required. Prior to injection only the additives need to be added to both components.
- After preparation, the components are injected simultaneously in a ratio of 1:1.

### 2. Preparation

#### Component 1

- Add the required quantity of TE 300 catalyst to the GELACRYL™ resin. GELACRYL™ resin and TE 300 need to be thoroughly mixed. In case of using GELACRYL™ SR, an additional amount of water needs to be added to Component 1.

## Component 2

- The tank is first filled with the same quantity of GELACRYL™ AR2. Then slowly and under continuous mixing to avoid lumps, add the required quantity of SP 200. Mix well at 600 rpm.
- The components should only be prepared immediately before use of the grout. We do not recommend preparation in advance.
- As soon as temperatures of the environment or material reach 20°C or higher, the resin and grout need to be regularly oxygenated by passing compressed air through the containers

### 3. Typical Formulations/Gel Times

#### GELACRYL™

| T (°C) | GELACRYL™ (L) | TE 300 (L) | GELACRYL™ AR2 (L) | SP 200 (KG) | SP 200 (BOTTLES) | GEL TIME |
|--------|---------------|------------|-------------------|-------------|------------------|----------|
| 5°C    | 42            | 1.60       | 42                | 1.58        | 3.5              | 1'       |
| 5°C    | 42            | 0.75       | 42                | 1.13        | 2.5              | 5'       |
| 5°C    | 42            | 0.67       | 42                | 0.45        | 1                | 10'      |
| 5°C    | 42            | 0.59       | 42                | 0.23        | 0.5              | 30'      |
| 10°C   | 42            | 1.35       | 42                | 1.13        | 2.5              | 1'       |
| 10°C   | 42            | 0.67       | 42                | 0.68        | 1.5              | 5'       |
| 10°C   | 42            | 0.59       | 42                | 0.45        | 1                | 10'      |
| 10°C   | 42            | 0.50       | 42                | 0.12        | 0.25             | 30'      |
| 20°C   | 42            | 1.18       | 42                | 1.13        | 2.5              | 1'       |
| 20°C   | 42            | 0.59       | 42                | 0.45        | 1                | 5'       |
| 20°C   | 42            | 0.50       | 42                | 0.23        | 0.5              | 10'      |
| 20°C   | 42            | 0.42       | 42                | 0.23        | 0.5              | 30'      |

#### GELACRYL™ SR

| T (°C) | GELACRYL™ SR (L) | WATER (l) | TE 300 (L) | GELACRYL™ AR2 (L) | SP 200 (KG) | SP 200 (BOTTLES) | GEL TIME |
|--------|------------------|-----------|------------|-------------------|-------------|------------------|----------|
| 5°C    | 21               | 18.5      | 1.95       | 42                | 1.80        | 4                | 1'       |
| 5°C    | 21               | 18.5      | 1.00       | 42                | 0.90        | 2                | 5'       |
| 5°C    | 21               | 18.5      | 0.80       | 42                | 0.68        | 1.5              | 10'      |
| 5°C    | 21               | 18.5      | 0.70       | 42                | 0.45        | 1                | 30'      |
| 10°C   | 21               | 18.5      | 1.80       | 42                | 1.13        | 2.5              | 1'       |
| 10°C   | 21               | 18.5      | 0.70       | 42                | 0.68        | 1.5              | 5'       |
| 10°C   | 21               | 18.5      | 0.60       | 42                | 0.45        | 1                | 10'      |

|      |    |      |      |    |      |     |     |
|------|----|------|------|----|------|-----|-----|
| 10°C | 21 | 18.5 | 0.40 | 42 | 0.23 | 0.5 | 30' |
| 20°C | 21 | 18.5 | 1.30 | 42 | 1.13 | 2.5 | 1'  |
| 20°C | 21 | 18.5 | 0.60 | 42 | 0.45 | 1   | 5'  |
| 20°C | 21 | 18.5 | 0.40 | 42 | 0.45 | 1   | 10' |

## GELACRYL™ Superflex

| T (°C) | GELACRYL™<br>SUPERFLEX (L) | TE 300 (L) | GELACRYL™ AR2 (L) | SP 200 (KG) | SP 200 (BOTTLES) | GEL TIME |
|--------|----------------------------|------------|-------------------|-------------|------------------|----------|
| 5°C    | 42                         | 1.60       | 42                | 1.58        | 3.5              | 1'       |
| 5°C    | 42                         | 0.75       | 42                | 1.13        | 2.5              | 5'       |
| 5°C    | 42                         | 0.67       | 42                | 0.45        | 1                | 10'      |
| 5°C    | 42                         | 0.59       | 42                | 0.23        | 0.5              | 30'      |
| 10°C   | 42                         | 1.43       | 42                | 1.13        | 2.5              | 1'       |
| 10°C   | 42                         | 0.67       | 42                | 0.68        | 1.5              | 5'       |
| 10°C   | 42                         | 0.59       | 42                | 0.45        | 1                | 10'      |
| 10°C   | 42                         | 0.50       | 42                | 0.12        | 0.25             | 30'      |
| 20°C   | 42                         | 1.18       | 42                | 1.13        | 2.5              | 1'       |
| 20°C   | 42                         | 0.59       | 42                | 0.45        | 1                | 5'       |
| 20°C   | 42                         | 0.50       | 42                | 0.23        | 0.5              | 10'      |

## 4. Injection

- The injection work should be carried out with the DE NEEF® IP 2C-200-A twin piston, 1:1 ratio high pressure pump, suitably modified for use with the GELACRYL™ AR System.

## Consumption

Has to be estimated by the engineering or operator and depends on width and depth of the cracks and voids to be filled.

## Technical Data / Properties

| PROPERTY  | VALUE                   | NORM        |
|---|-------------------------|-------------|
| GELACRYL™ Resins  |                         |             |
| See respective technical data sheet for full technical data properties. |                         |             |
| GELACRYL™ AR2   |                         |             |
| Density   | ± 1kg / dm <sup>3</sup> | ASTM D-1638 |

|                                      |           |              |                     |             |
|--------------------------------------|-----------|--------------|---------------------|-------------|
| Viscosity (@ 25 °C)                  | < 40 mPas |              |                     | ASTM D-1638 |
| Solids                               | ±50 %     |              |                     | ASTM D-1010 |
| Cured form Acrylic Rubber            | GELACRYL™ | GELACRYL™ SR | GELACRYL™ Superflex |             |
| Elongation at Break                  | 80 %      | 20 %         | 200 %               | ASTM 638    |
| Post-expansion in contact with water | 70 %      | 55 %         | 160 %               | Test DNC    |

## Appearance

After curing, product turns into a flexible rubber.

|                            |                    |
|----------------------------|--------------------|
| GELACRYL™ Resin:           | Green liquid       |
| GELACRYL™ SR Resin:        | Transparent liquid |
| GELACRYL™ Superflex Resin: | Blue liquid        |
| GELACRYL™ AR2:             | White liquid       |
| TE 300:                    | Transparent liquid |
| SP 200:                    | White salt         |
| KF 500:                    | Orange liquid      |

## Packaging

### GELACRYL™ Resins

|                        |               |
|------------------------|---------------|
| 25kg plastic jerry can | 21L           |
| 1 pallet               | 24 jerry cans |

### GELACRYL™ AR2

|                        |               |
|------------------------|---------------|
| 21kg plastic jerry can | 21L           |
| 1 pallet               | 24 jerry cans |

### TE 300

|                        |               |
|------------------------|---------------|
| 25kg plastic jerry can |               |
| 1 pallet               | 24 jerry cans |

## SP 200

0.45kg plastic bottle

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|       |            |
|-------|------------|
| 1 box | 22 bottles |
|-------|------------|

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|          |          |
|----------|----------|
| 1 pallet | 24 boxes |
|----------|----------|

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## KF 500

25kg plastic jerry can

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|          |               |
|----------|---------------|
| 1 pallet | 24 jerry cans |
|----------|---------------|

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## Storage

GELACRYL™ resins, GELACRYL™ AR2, TE 300, SP 200 and KF 500 should be stored in a frost-free environment under cover, clear of the ground, in the original closed containers. The storage temperature must be below 35°C.

Shelf life: 1 year

## Accessories

### To be ordered separately

- IP 2C-200-A air driven twin piston pump.
- Packers and connectors.

(Please consult the relevant Technical Data Sheet).

## Health and Safety

GELACRYL™ resins are slightly irritating.

GELACRYL™ AR2 is not classified.

TE 300 is classified as irritant.

SP 200 is classified as harmful/oxidising.

Always wear appropriate protective gear: rubber gloves, safety goggles and boots.

Always avoid prolonged breathing of the grout vapours. Use a fresh air blower and flexible ducts in any confined or badly ventilated area.

In case of contact with the eyes, flush with water for 15 minutes. If swallowed, call a physician immediately.

For full information, consult the relevant Material Safety Data Sheet.

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