

# Technical Data Sheet

## PT PUR Injection-Gel

- PUR injection gel -  
(hydrophilic, water reactive polyurethane pre-polymer)

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### Product description

PT PUR Injection-Gel is high concentrated, hydrophilic, water mixable PUR injection gel. By adding of water (mixing with drinking water) it reacts to a highly elastic gel. Depending of adding water quantity it reacts to a highly flexible gel or flexible foam. After the material is completely cured, it is watertight against pressurized water. PT PUR Injection-Gel does not contain any free isocyanates. It is solvent-free and is not corrosiv.

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### Application areas

PT PUR Injection-Gel is used in different application areas. First application area is for curtain injection into the soil. Secondly for area injection into the substrate (for example masonry) and thirdly for subsequent sealing of expansion joints. Additionally PT PUR Injection-Gel is suitable for soil stabilization and filling of cavaties.

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### Product advantages

- **Hydrophilic (water mixable)**
- **Catalyst is water**
- **Highly elastic**
- **No free isocyanates**
- **Suitable as gel and hydrophilic foam**
- **Perfect bonding to the absorbent surfaces**
- **Deep penetration**
- **Low injection viscosity**
- **High concentrated**
- **Mixing ratio 1:1 up to 1:13 with water**
- **Reaction time adjustable, between 10 seconds and 20 minutes**
- **Not corrosiv**
- **Does not attack reinforcement steel**
- **Application with 2K injection devices**

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### Specification

Base	: Polyurethane pre-polymer
Color	: brown
Working temperature	: from + 5°C up to + 35°C
Density	: approx. 1.18 g/ml (DIN 53 479)
Viscosity without water (Brookfield)	: approx. 700 mPas (+25°C) (EN ISO 3219)

Viscosity with water (Brookfield)	: approx. 1.5 - 350 mPas (+25°C) (EN ISO 3219)
Reaction time after mixing with water	: approx. 10 seconds up to 20 minutes
Mixing ratio	: 1:1 up to 1:13 (gel : water)
Water class (for mixing)	: drinking water, no highly concentrated alkaline water or salt water
Consumption	: depend of cavity occurrence

All technical datas are measured in our laboraty.

Please take notice about the safety information and advice given on the safety data sheets and packaging labels. GISCODE: PU40

Working- / Reaction times : depend of mixing ratio

<u>Mixing ratio (gel : water)</u>	<u>Processing time</u>
1:13	approx. 12 minutes
1:10	approx. 3 minutes
1:3	approx. 1.5 minutes
1:1	approx. 15 seconds

Reaction time after mixing with water (Polymerisation) : depend of mixing ratio

<u>Mixing ratio (gel : water)</u>	<u>Reaction time</u>
1:13	approx. 16 minutes
1:10	approx. 9 minutes
1:3	approx. 3 minutes
1:1	approx. 1 minute

### ***Area injection***

<u>Mixing ratio</u>	<u>Consumption</u>
1:13	approx. 2,2 kg/m <sup>2</sup> (gel)

### ***Curtain wall injection***

<u>Mixing ratio</u>	<u>Consumption</u>
1:10	approx. 3 kg/m <sup>2</sup> (gel)

### ***Expansion joint injection***

<u>Mixing ratio</u>	<u>Consumption</u>
1:4	approx. 0,2 kg/l cavity

### ***Notice:***

**The consumption is always depend of surface, substrate and wanted curing time and can change.**

**Delivery form**

10 kg metal canister

Article-No. 01500010

210 kg metal drum

Article-No. 01500210

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**Storage**

12 months (frost-free and dry, +5°C up to +25°C in original packaging).

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**Application****Surface preparation**

Before starting injection procedure, an analysis of the to be waterproofed subject is required. On hand of analysis results (water situation, crack properties, crack width, cavity occurrence, water temperature etc.) choose the right mixing ratio (gel: water) of injection gel. For injection PT Injection Lances must be installed horizontal (area injection and curtain wall injection) or in a 45° direction (expansion joint injection). The diameter of boreholes depends on the diameter of the used injection lances (for example: 20 mm packer diameter = 21 mm borehole diameter). The packers must be set tightened by using the right tools, so they do not release even at high injection pressures.

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**Material**

PT PUR Injection-Gel will be processed through 2K injection devices (please send inquiry). The mixing ratio should be variable adjustable at the injection device, also during injection. The mixing of material (gel + water) will be done in the mixing lance of injection device, that means immediately before injection. The mixing ratio must be adjust at the injection device before starting injection. The injection proceeds with an initial pressure of maximum 7.5 bar. Depend of situation the injection pressure can change.

**Area injection:**

The area to be sealed will be provided with PT Injection Lances in a horizontal grid of max. 20 to 30 cm. The holes must be drilled to a depth of 2/3 of wall thickness. The lances mounted horizontally and every second row is offset. The injection begins after the mixing ratio is adjusted at the injection device and starts with the lowermost lance row line by line and is upwardly continued. The material will be injected until injection gel exiting at the adjacent lance or the appropriate amount of material is injected. The injection has to take place continuously, so that no material reacting in the mixing device.

**Curtain wall injection:**

The area to be sealed will be provided with PT Injection Lances in a horizontal grid of max. 20 to 30 cm. The holes must be drilled through the construction/wall. The lances mounted horizontally and every second row is offset. The injection begins after the mixing ratio is adjusted at the injection device and starts with the lowermost lance row line by line and is upwardly continued. The material will be injected until injection gel exiting at the adjacent lance or the appropriate amount of material is injected. The injection has to take place continuously, so that no material reacting in the mixing device.

**Expansion joint injection:**

For expansion joint injection PT PUR Injection-Gel has to be mixed with water in a ratio of maximum of 1:5 (gel : water). With this mixing ratio the material forms a foam and achieve a high bonding to the joint edges. The WFP Injection Lances must be set in a 45° direction to the joint with a gap of 30 cm (depend on joint width), so that holes cross the joint in the middle of the joint. Before starting injection clean out the joint from all material. The joint must be closed to the inside, for example, with PE round rod and a wooden board so that PT PUR Injection-Gel cannot run out of the joint.

After PT PUR Injection-Gel is completely cured the boreholes have to be sealed with PT Waterstop Mortar or PT Swelling Mortar. Depend of cavity occurrence the mentioned consumption quantities can change. Changes in temperatures (air, substrate, material, water) will have changes in the reaction characteristics of material. Please note that PT PUR Injection-Gel cannot be inject in alkaline water, this effects reaction problems. After PT PUR Injection-Gel is completely cured it is alkaline stable.

Tools and equipment should be cleaned immediately after use with PT Cleaner PUR. Cured material can only be removed mechanically.

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**Recommended tools**

2-K injection device, gloves, safety glasses

PT Injection Lances

PT Waterstop-Mortar

PT Swelling Mortar

PT Cleaner PUR

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**Application areas:****Remarks**

The information given in this technical data sheet corresponds to the current state of development and is based on our experience, our knowledge and is non-binding. An investigation has to be done with focus on the respective building project and the area of application. The technical expert advice of proof-tec employees does not exclude the planning or control by an engineer. We are liable within the scope of our general delivery and sales conditions, we are not liable for the application of our materials. The generally accepted rules of technology must be observed. If necessary, preliminary tests have to be carried out.

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All previous versions of this technical data sheet are not valid anymore and should not be used anymore.