

1 component, polyurethane injection system, injected with a two component pump with water as the second component. It produces a flexible polyurethane foam, an elastomeric gel or a soft gel, depending on the amount of water added. Possible applications: expansion joints, heavy water leakages, screen injections, ...

APPLICATIONS

PURINJECT 1C HYDROGEL ALT only needs water to achieve the final product like foam or gel, to control the reaction speed and to flush the machine.

- Heavy water leakages**
 Because of the foaming capability at a 1:1 ratio in combination with water, PURINJECT 1C HYDROGEL ALT can be used for shutting off heavy water leakages (up to 5 m³ per minute). In this case, pure resin can also be used.
- Expansion joints**
 Because of the good adhesion to the aggregate and the good flexibility of the end product, PURINJECT 1C HYDROGEL ALT is used for expansion joints. The recommended ratio PURINJECT 1C HYDROGEL ALT to water is 1:4 to 1:5.
- Gel membrane/screen injection**
 Because of the low viscosity of the water/polymer mixture, PURINJECT 1C HYDROGEL ALT can be used as a liquid but solidifying gel membrane applied to the positive side of a concrete structure from the negative side. The recommended ratio PURINJECT 1C HYDROGEL ALT to water is 1:10. The gel mixture will fill the voids from the aggregates (like sand etc.) behind the wall, thus avoiding the entry of water into the wall construction. The procedure is drilling through the wall and pumping the PURINJECT 1C HYDROGEL ALT-water mixture via packers in the wall.
- Masonry walls/screen injection**
 Because of the low viscosity, PURINJECT 1C HYDROGEL ALT can be used in masonry walls as a vertical barrier to fill the voids/joints in masonry walls, to avoid that water comes through the voids to the surface of the wall. The recommended ratio PURINJECT 1C HYDROGEL ALT to water is 1:10. The procedure is drilling holes to 80 % of the wall thickness or until 5 cm from the back of the wall and pumping the PURINJECT 1C HYDROGEL ALT-water mixture via packers in the wall.
- Gel encapsulation**
 Because of the low viscosity in combination with a good adhesion, PURINJECT 1C HYDROGEL ALT can be used as a gel encapsulation method, filling voids a jelly material (e.g. delaminated concrete slabs etc.). The recommended ratio PURINJECT 1C HYDROGEL ALT to water is 1:8 to 1:10.
- Oakum technique**
 Because of the reactivity with water, PURINJECT 1C HYDROGEL ALT can be used for the activated oakum technique, where oakum or any other kind of carrier material is soaked in pure PURINJECT 1C HYDROGEL ALT. The oakum and the PURINJECT 1C HYDROGEL ALT are applied into voids where small water leakages can be a problem (pipe outlet through walls etc.).
- Injection hoses**
 Because of the low viscosity, PURINJECT 1C HYDROGEL ALT can be used for injection hoses being installed in new structures for immediate or later waterproofing. The recommended ratio PURINJECT 1C HYDROGEL ALT to water is 1:5 to 1:10.

TECHNICAL DATA

Colour	Clear yellow
Density 20 °C	1.04 g/cm ³
Viscosity at 20°C	1366 cP
Storage Stability in well-sealed drums	Min. 12 months

HOW DOES PURINJECT 1C HYDROGEL ALT WORK?

PURINJECT 1C HYDROGEL ALT consists of a MDI based, solvent free, isocyanate component and will only react when it comes in contact with water:

- at a ratio from 1:1 to 1:3 (polymer to water), forming a tight, impermeable, elastomeric foam.
- at a ratio 1:4 to 1:7 (polymer to water), forming a tight, impermeable, elastomeric, strong gel.
- at a ratio 1:8 to 1:10 (polymer to water), forming a tight, impermeable, elastomeric gel.

Properly applied, PURINJECT 1C HYDROGEL ALT adheres to the surface and forms a high resilient, rubbery gasket that immediately stops the water.

OPERATIONAL DATA

To prevent condensation on the liquids at the start of work, the temperature of the components should be at least as high as the ambient temperature. All opened drums of PURINJECT 1C HYDROGEL ALT should be purged with dry nitrogen and capped when not in use. PURINJECT 1C HYDROGEL ALT can be pumped by the use of a single component injection pump, equipped for higher pressures to withstand the water pressure. In case water is used as the second component, PURINJECT 1C HYDROGEL ALT should be pumped with a two component injection pump with variable ratio.

Due to the relative high reactivity, it is advisable to rinse the mixing head and injection hose with water after each injection, thus preventing the material from clogging in the hose. After the injection is completed, the pump must be cleaned with PURCLEAN.

APPLICATION PRESCRIPTIONS

Ratio PURINJECT 1C HYDROGEL ALT / water at 25°C	Gel Time - Tack Free Time	End of Expansion Time	End product
1:1	20 - 30 sec	7 min	Strong foam
1:5	30 – 35 sec		Strong gel
1:10	35 – 45 sec		Gel

The times were measured at 25°C. To check the reaction, we advise the free foaming conditions in a cup. Add water, according to the recipe, to the PURINJECT 1C HYDROGEL ALT and mix with a spatula. To measure the Gel time and the End of expansion time, use the following procedure:

- Start Time (point 0) = water has been added, the mixing starts.
- Gel Time - Tack Free Time = the material is no longer able to flow and the gel is tack free.
- End of Expansion Time = no further expansion of the elastomeric foam is noted.

STORAGE

To avoid problems, it is very important to understand that these materials are both temperature and moisture sensitive. Therefore, materials should be stored in an area with temperatures not exceeding 30°C or not lower than 10°C. All partially used drums should be covered by nitrogen and re-sealed to prevent the ingress of moisture.

PACKAGING

Metal drums of 10 kg or 25 kg.

SAFETY AND HEALTH PRECAUTIONS

For more information, consult the safety data sheet.