TECHNICAL DATA SHEET

# HYDROCRYL 2000

## Hydrophobic Polyurethane Injection Resin




PREMCRETE

# HYDROCRYL 2000




## DESCRIPTION

HYDROCRYL 2000 is a high-performance hydrophobic polyurethane injection resin designed for the sealing of water-bearing cracks, joints, voids and interstices within concrete and masonry structures. The product is supplied as a single-component resin and is used in conjunction with HYDROCRYL Catalyst to control reaction characteristics. HYDROCRYL 2000 is based upon MDI polyurethane technology and possesses a very low viscosity, enabling deep penetration into fine cracks and voids. Upon contact with water, HYDROCRYL 2000 rapidly reacts to form a semi-rigid, closed-cell polyurethane foam. The cured foam effectively arrests water ingress whilst providing a durable and long-lasting seal. In static or non-moving cracks, the cured material may also contribute towards restoring the integrity of the structure.

HYDROCRYL 2000 is suitable for concrete injection for the ductile filling of cracks, voids and interstices in accordance with EN 1504-5.

## USES

HYDROCRYL 2000 is specifically designed for the sealing of active water ingress and groundwater infiltration within below-ground and water-retaining structures.

Typical applications include:

- Tunnels and underground structures
- Basements and retaining walls
- Water tanks and reservoirs
- Lift pits
- Culverts and drainage structures
- Underpasses
- Dams and waterways
- Car parks
- Concrete structures subject to groundwater penetration
- Cracks, joints and voids requiring rapid water cut-off

# HYDROCRYL 2000

## ADVANTAGES

- Very low viscosity for excellent crack penetration.
- Reactivates in the presence of water and moisture.
- Rapid reaction and curing characteristics.
- Solvent-free formulation.
- Free from VOCs, CFCs and halogens.
- Produces a homogeneous closed-cell foam structure.
- Provides effective water cut-off under pressure.
- Suitable for application within damp and saturated substrates.
- Easy to apply using conventional injection equipment.
- Good chemical resistance.
- Catalyst dosage can be adjusted to suit site conditions.
- Suitable for ductile filling of cracks and voids in accordance with EN 1504-5.

## TECHNICAL & PERFORMANCE PROPERTIES

| Property | Test Method | Value |
|---|---|---|
| Appearance | N/A | Amber Liquid |
| Density | N/A | @ 23°C 1.10 – 1.15 g/cm³ |
| Viscosity | N/A | @ 23°C 60 – 100 cP |
| Mixing Ratio | N/A | 100 : 5–10 (Resin : Catalyst) |
| Start of Reaction | N/A | 10 Seconds |
| End of Reaction | N/A | 90 Seconds |
| Curing Time | N/A | 1 Hour |
| Expansion Ratio | N/A | 38 Times |
| Free Foam Density | N/A | 34 kg/m³ |
| Yield | N/A | 28 Litres/kg |

# HYDROCRYL 2000

## INSTALLATION PROCEDURE

### Surface Preparation

Correct preparation is essential to the successful performance of the injection system.
Cracks, joints and voids must be free from loose material, dust, oil, grease and any other contaminants which may impair adhesion or prevent resin penetration.
Injection holes should be drilled at approximately 45° to intersect the crack line.
Hole diameters should be typically drilled at 1mm larger than the injection packer system employed.
All drilling dust should be removed prior to installation of injection packers.
Suitable injection packers should then be securely installed and tightened to ensure an effective seal during injection operations.



HYDROCRYL PACKER

### Mixing

HYDROCRYL 2000 should be mixed with HYDROCRYL Catalyst immediately prior to use.
The catalyst should be added at a dosage rate of between 5% and 10% by weight depending upon ambient conditions and the desired reaction profile.
The material should be mixed thoroughly using a slow-speed drill fitted with a suitable mixing paddle until a homogeneous consistency is achieved. Part-mixing of packs should be avoided wherever possible.

| Temperature | Catalyst Dosage | Start | Mid | End |
|---|---|---|---|---|
| 7°C | 10% | 35 sec | 120 sec | 180 sec |
| 15°C | 10% | 10 sec | 90 sec | 150 sec |
| 23°C | 5% | 10 sec | 100 sec | 135 sec |
| 30°C | 5% | 10 sec | 80 sec | 130 sec |

### Application

The mixed material should be transferred directly into a clean single-component injection pump.
Injection should commence at the lowest packer and proceed sequentially along the crack. Pumping should continue until material is observed emerging from adjacent packers or from the crack itself.
Injection should then continue through successive packers until the entire crack or void has been treated.
Where permanent structural sealing is required following water cut-off, consideration may be given to a secondary injection using a suitable non-foaming flexible polyurethane resin.
Following completion of injection works, the material should be allowed to cure fully before packers are removed and injection holes made good using an appropriate waterproof repair mortar.

### Equipment Cleaning

All tools, pumps and associated equipment should be cleaned immediately following use with PREMCRETE CLEANING SOLVENT or another suitable polyurethane resin cleaning solvent.
Injection equipment must not be allowed to stand containing uncured resin as cured foam may cause permanent blockage of internal components.
Following solvent cleaning, it is recommended that a light machine oil is circulated through the equipment to provide protection during storage.

# HYDROCRYL 2000

## PACKAGING & COVERAGE

**Pack Size**

HYDROCRYL 2000 is supplied in 25kg packs.
HYDROCRYL Catalyst is supplied separately.




**Yield**

The quantity of material required will depend upon crack width, crack depth and the volume of voids being treated.
Under free-foaming conditions, HYDROCRYL 2000 will typically yield approximately 28 litres of foam per kilogram of resin.

## STORAGE & SHELF LIFE

HYDROCRYL 2000 should be stored in clean, dry conditions at temperatures between 5°C and 30°C.
When stored in unopened original containers under recommended conditions, the product has a shelf life of 12 months.
As the material reacts with atmospheric moisture, opened containers should be resealed immediately after use and consumed as soon as practicable. Where possible, partially used containers should be protected using a dry nitrogen blanket.

## HEALTH & SAFETY

HYDROCRYL 2000 contains isocyanates and appropriate precautions should be taken during handling and application.
Suitable gloves, eye protection and protective clothing should be worn at all times. Contact with skin and eyes should be avoided.
In the event of skin contact, wash immediately using soap and plenty of clean water.
Dispose of empty containers and unused material in accordance with local regulations.
Refer to the separate Material Safety Data Sheet for full health and safety information.

## ANCILLARY ITEMS



**HYDROCRYL PACKERS**

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