



# TechnoPur® InjectoSeal 1K-M

Hydrophobic, Phthalate free, Semi-flexible Polyurethane Injection Resin Grout for leak sealing and stopping active leaks in cracks.

## Description:

TechnoPur®InjectoSeal 1K-M is a closed cell, high performance hydrophobic polyurethane injection grout designed to initiate expansion in the product to seal leaking cracks and joints in concrete structure and fill voids in generally inaccessible locations. TechnoPur®InjectoSeal 1K-M only reacts when it comes into contact with water, producing a non-toxic, semi-flexible polyurethane foam and quickly cures to a tough, flexible, closed-cell polyurethane foam that is generally unaffected by common corrosive environments and is not subject to shrinkage due to wet/dry cycles.

TechnoPur®InjectoSeal 1K-M are all environmentally friendly and formulated without harmful phthalates or VOC's. It is comprised of an "A" component-resin and a "B" component- Catalyst. The pre-mixed resin can be pumped by single component injection pump that is equipped for high pressure static in-line mixer to forms a semi flexible polyurethane foam of great strength.

## Application Includes:

TechnoPur®InjectoSeal 1K-M is a multi-purpose injection resin used to seal leaking cracks, failed joints and to fill voids or fractures in concrete structures. The system utilizes an accelerator to "adjust" the reaction profile as needed for job site conditions. Typical applications include:

- Sealing against leaking cracks and joints
- Sealing against water in masonry and brickwork
- Void filling
- Back grouting

## Features:

- Phthalate free, environmentally safe, non-toxic
- Medium viscosity
- Variable reaction times
- Reacts with saline and mineral water
- Semi-flexible
- Non-toxic, 100% solids & Solvent free thus environmentally safe.

## Packaging

TechnoPur®InjectoSeal 1K-M is supplied in 22 kg dual packs. TechnoPur®InjectoSeal 1K-M (resin): 20 kg metal drum. TechnoPur®InjectoSeal 1K-M (Catalyst): 2 kg plastic bottle. Packaging size may vary subject to local regulations and requirements.

## Directions for use

### Surface preparation

Clean area of concrete so cracks are identifiable. It is recommended to use TechnoFix® Series of packers especially when injecting against running water. Other techniques may be used, but are application specific. Drill holes to suit the specific dimensions of the packers and should be spaced at between 150 to 500mm intervals depending upon the crack width, depth and pressure of water.

Angle should be at approximately 45° and bisect the crack in the centre of the concrete where possible. If rebar is struck, stop drilling and move drilling point to adjacent area. Where possible stagger the injection points either side of the crack. Insert packers and ensure they are tight to the concrete. If necessary they may be sealed with TechnoSeal® EPA 1500 or TechFin® FastPlug as well.

### Sealing cracks by injection.

Make off-set holes on the sides of the cracks. The size of the holes should fit the diameter of the TechnoFix® injectors that will be used. TechnoFix® Expansion injectors with a non-return valve can be easily fixed by self-tapping completely to the walls of the hole. If there is no water ingress, normal copper, steel or PVC tubes with a diameter of approximately 14 mm can be used and can be fixed with TechnoSeal® EPA 1500. However, it is necessary to inject water before injecting TechnoPur® InjectoSeal 1K-M in order to obtain an expanding reaction.

## Typical Properties at 20°C

Colour	Brown liquid		Light yellow liquid	
<b>Consistency</b>	liquid		liquid	
<b>Density (g/cm<sup>3</sup>)</b>	1.18 g/cm <sup>3</sup>		1.16 g/cm <sup>3</sup>	
<b>Viscosity at 20 °C</b>	250 - 500 mPa·s Brookfield DV 11 spindle no. 2 at 60 rpm		< 20 mPa·s Brookfield DV 11 spindle no. 2 at 60 rpm	
<b>Flash point</b>	> 202 °C		> 99 °C	
<b>Cream Time</b>				
<b>TechnoPur®InjectoSeal 1K-M Resin</b>	2.5%	5%	7.5%	10%
<b>15°C</b>	50 sec	40 sec	30 sec	20 sec
<b>25°C</b>	35 sec	30 sec	25 sec	20 sec
<b>Rise Time</b>				
<b>TechnoPur®InjectoSeal 1K-M Catalyst</b>	2.5%	5%	7.5%	10%
<b>15°C</b>	25 min	11 min	5 min	3 min 40 sec
<b>25°C</b>	10 min	3 m; 20 sec	5 m; 20 sec	2 m; 45 sec
<b>Tack free time</b>				
<b>TechnoPur®InjectoSeal 1K-M Catalyst</b>	2.5%	5%	7.5%	10%
<b>15°C</b>	50 min	18 min	10 min	6 m; 40 sec
<b>25°C</b>	35 min	10 min	6 m; 30 sec	4 m; 10 sec
<b>Foaming Ratio</b>				
<b>TechnoPur®InjectoSeal 1K-M Catalyst</b>	2.5%	5%	7.5%	10%
<b>15°C</b>	> 8X	> 10X	> 20X	> 25X
<b>25°C</b>	> 8X	> 15X	> 25X	> 30X

## Shelf Life & Storage

Both components of TechnoPur®InjectoSeal 1K-M are extremely hygroscopic. They can be stored for a maximum of 12 months from the date of manufacturing in unopened, original sealed and dry condition in a dry sheltered place in their original sealed packaging at a temperature between +5°C and +30°C. Products that have been opened, must be used immediately.

## Health and Safety instructions

Some people are sensitive to resins so gloves and a barrier cream should be used when handling TechnoPur® InjectoSeal 1K-M. If contact with the resin occurs, it must be removed, before it hardens, with a resin removing cream. Follow by washing with soap and water.

Do not use solvent. The use of goggles is recommended but should accidental eye contamination occur, wash thoroughly with plenty of water and seek medical treatment immediately.

Ensure adequate ventilation in volume and pattern in working area and do not smoke during use. Consider property in proximity of the application area to prevent loss or damage. Protect your jobsite from unauthorized persons. Store all materials and equipment safely and out of reach of children and animals.

Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment.

Product only for professional use.

**Additional Information:** Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

\*Separate datasheet are available on these products.

All tests carried out using the following mix ratio:

TechnoPur®InjectoSeal1K-M resin: 100 parts by weight.

TechnoPur®InjectoSeal1K-M Catalyst:As a percentage of TechnoPur®InjectoSeal1K-M resin by weight, as stated in the results. Water: In all tests, 10 parts by weight. All technical data stated herein is based on tests carried out under laboratory conditions.

## Preparing the product and injecting TechnoPur®InjectoSeal1K-M

TechnoPur® InjectoSeal 1K-M resin is mixed directly in its drum with approximately 2-10% of TechnoPur®InjectoSeal 1K-M Catalyst (10% if a very quick reaction is needed). After mixing, in the absence of damp or water, it can be injected for approximately 1 hour (it is necessary to protect the product from contact with damp air by covering the drum with its lid).

Note: the reaction times vary depending on the percentage of accelerator added and the temperature of the substrate to be injected. If after mixing with the Catalyst, TechnoPur® InjectoSeal 1K-M should not be protected from moisture, a film of small thickness can be formed (within 30 minutes of preparation) on the surface, but it still allows the use of the material.

Inject TechnoPur®InjectoSeal1K-M continuously into the crack. TechnoPur®InjectoSeal 1K-M increases its volume as soon as it is in contact with water sealing cracks and blocking water seepages. (After about 20-40 seconds as a function of a temperature and humidity).

## Consolidating ground and rock

The product is prepared following the same instructions as for injecting cracks in concrete units. While injecting and when TechnoPur®InjectoSeal 1K-M is in contact with water, it increases in volume. This creates pressure on the ground components resulting in compaction. As a consequence, a polyurethane waterproof layer is formed, which varies in thickness, and permanently consolidates the injected material.

## Finishing

Once the injection process has finished, remove injection packers and fill with TechnoSeal® EPA 1500 or TechFin® FastPlug as well or other appropriate TechFin® material. Scrape off any foam residue from the cracks and dispose of appropriately.

## Cleaning

The pump and line of Components must be thoroughly cleaned with TechnoPur® Eco Cleaner and preserved with flushing oil through pumping it through the pump. Curing process might take place with residual product left in the pump and injection line with the air humidity.

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**EDITION:** 09/2017/001

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Please note that this datasheet supersedes all previous versions.

## Consumption

The consumption of the product depends on the size of the void volume to be filled and the foam expansion factor after mixing the two components, in relation to the amount of water present. The consumption has to be assessed from time to time depending on different factors. Therefore, in order to enhance the TechnoPur® InjectoSeal 1K-M usage and performance, we suggest you to contact our technical service representative for verifying and evaluating the local conditions of application.

## Limitations

TechnoPur®InjectoSeal1K-M (resin)/TechnoPur®InjectoSeal 1K-M (Catalyst) is a complete system for void filling and leak sealing in concrete or masonry structures and sandy soils by injection into soils.

Adaptable reaction time is possible by varying the catalyst ratio from between 2% to 10%. Reaction with water results in the formation of a semiflexible polyurethane foam which is hydrophobic and chemically resistant. The reaction time can be set from 1 to 50 minutes. (See table of reaction times.) The pre-mixed resin can be pumped by means of a single component injection pump that is equipped for high pressure. Following the injection, the pump must be thoroughly cleaned with TechnoPur® Eco Cleaner.

It is recommended that both resin and Catalyst drums are rolled or shaken before use. Always ensure the mixture is homogenous. Mix the resin using a dry clean drill and paddle mixer for a minimum of 15 seconds before application. It is recommended that the material be conditioned to appropriate temperatures for at least 12 hours prior to application.

**Important:** Keep containers sealed whilst not being used. Moisture may be absorbed into the TechnoPur®InjectoSeal 1K-M from the atmosphere causing it to react. Careful consideration should be given to application to below 10°C on a falling thermometer to avoid possible crystallisation. Temperature significantly affects viscosity. Protect material from excessive heating and cooling prior to grouting to avoid affecting viscosity. Do not reseal containers of contaminated materials as it can create pressure. Clean up spills with adequate ventilation and appropriate personal.