

**NIPPON CRACKJET GEL**

*Updated July'17*

**Description:**

**Nippon Crackjet Gel** is a one-component injection gel formulated from crosslinking PU and water-absorbing technology. **Nippon Crackjet Gel** absorbs and reacts with water from the leakage in the structure to form a chemically-resistant, resilient and tough gel material that instantly arrest water seepages. When it is cured, it is resistant against aggressive chemicals such as xylene, diesel and sulphuric acid which is commonly found in tunnels and sub-structures. Furthermore, in the presence of these chemicals it will retain its ability to expand and acts as active plug in the cracks. **Nippon Crackjet Gel** resists heat up to 70°C with no significant signs of degradation.

**Nippon Crackjet Gel** able to absorb water from 0.2 times up to 10 times of its volume. The gel structure varies from a soft gel (in the presence of 10 times of water) to a resilient gel (in the presence of 0.2 times of water), ensuring a complete sealing method that quickly stops water leakage and plugging the end with the use of only one single material.

**Nippon Crackjet Gel** has controlled and consistent gelation time with water, of about a minute upon contact. This will allow the injected resin deep penetration, and flow into adjacent and connecting cracks which are not leaking yet, and sealed them even before they pose problem later.

It is a much lasting and easy to use solution for restoration or remedial work in structures with cracks of mild to serious leakages. It is applied with a single injection pump, and there is no need for complicated mixing of accelerators and catalysts in conventional PU and acrylate-based gel materials.

**Uses:**

**Nippon Crackjet Gel** is suitable for waterproofing remedial applications such as:

- RC concrete structures
- Diaphragm walls and retaining walls
- Leaking ceilings and floors
- Precast sections
- Subway stations
- Tunnel Liners and Segments
- Water tanks
- Water features and Pools

**Advantages:**

- Tough and Elastic
- Excellent adhesion to substrate
- Fast cure
- Highly consistent gelling time
- Highly penetrative
- Excellent resistant to heat, chemicals and varying pH
- Excellent resistant to seawater and aggressive ground water
- Reacts with free water from 0.2 to 10 times of its volume- making it ideal even for cracks with gushing water
- Simple and user-friendly with no site mixing or use of sophisticated pumps
- Compliant to use in contact with water intended for human consumption-for use to repair works in portable water tanks

Product Type	Product Grade	Packsize	Finishing	Substrate
Crack Injection Material	<b>Nippon Crackjet Gel</b>	20kg	Soft to resilient Gel	Concrete

**Typical Technical Data**

Form	: Liquid
Color	: Brownish
Viscosity at 25°C	: 300-400 cps (Brookfield dv sp 2, 60 rpm)
Density	: 1.15 g/ml
Gelling Time (in 100g)	: 30-120 sec (2 to 10 times of water by volume)
Ability to react with water	: up to 15 times by volume (clean or ground water)
Adhesion Strength (after cured)	: 0.61 MPa
Water Absorption (after cured)	: 176%
Soil Resistance	: Pass
Resistance to Chemicals	
1. 10% sulphuric acid	: No damage (127% expansion)
2. Diesel	: No damage (12% expansion)
3. Alkaline pH 12	: No damage (181% expansion)
4. Xylene	: No damage (210% expansion)
Heat Resistance at 70°C	: no flowing, dripping, blistering or sagging, linear dimension change is very minimal (<2.7%)
Shelf Life	: Up to 12 months in original tight sealed container stored at dry cool place
Reaction to fire	: Will not ignite

**Application Method****Substrate Preparation****Concrete Substrate**

1. Inspect the cracks and voids of the structure and plan the best injection proposal based on placement of packers and its distance and directions
2. Drill holes into the affected area.
3. Use suitable packers size and depth to ensure **Nippon Crackjet Gel** can penetrate and function for its intended use

**Mixing**

1. Use a high pressure single injection pump.
2. Shake the material before use
3. No mixing is required by the applicator.
4. **Nippon Crackjet Gel** reacts rapidly with the presence of water, hence, the pump machine should be dried and free from water to avoid choking the machine or the tubes.
5. Gel time under normal temperature is about 30-120 sec upon contact with water.
6. Solvent should be used to flush the machine and the tube before application or after the initial flushing of the cracks with water.

**Application**

1. Inject Nippon Crackjet Gel with a pump system capable of reaching 200 bar pressure.
2. Observe for surface leaks during pumping, stop the pumping once leak of material shows up.
3. Seal the crack with Nippon Plug or approved method and materials.

**Limitation**

1. Nippon Crackjet Gel is not used for restoring structural integrity. Use **Nippon Crackjet EP** for this.

**Storage and Transportation**

This product is sensitive to moisture and must be sealed in its original containers in a dry area. Storage temperature must be between 5°C and 30°C. A 12-month shelf-life can be expected from the date of manufacturing if recommended storage condition is respected.

**Cleaning**

Clean up equipment or tools with **Nippon Crackjet Cleaner** immediately after use. Once cured, it can be removed with mechanical method. Allow the waste to cure, seal it into a suitable container and bury in landfill accordance to local authorities for disposing.

**Safety Precautions**

- Keep container tightly closed and keep out of reach children or away from food and drink.
- When applying, it is advisable to wear eye protection.
- Dispose off any waste in accordance with the appropriate Environment Quality Regulations.