MULTIURETHANES DATA SHEET

MULTI-GEL

Flexible Hydrophilic Polyurethane Grout

Product Overview

MULTI-GEL is a solvent-free, non-toxic, single-component water-reactive polyurethane injection resin. It reacts with water to form a flexible hydrophilic barrier. Depending on the amount of water in the mixture and upon curing, the consistency will vary from firm, elastic, rubber-like foams to stable gels containing as much as 800% water. After curing, **MULTI-GEL** absorbs limited amounts of water and will shrink slowly if allowed to dry. These foams and gels help deflect excessive water away from penetrating the structure, ensuring a strong hydrophilic barrier.

Key Features

- **Suitable for Potable Water**: Certified safe for use in applications near drinking water sources.
- **Flexible Hydrophilic Barrier**: Forms a durable, water-reactive barrier suitable for diverse environments and conditions.
- **Water Deflection**: Effectively deflects excessive water away from penetrating structures.
- **Solvent-Free and Non-Toxic**: Safe for use in a variety of applications without harmful effects.
- **Versatile Consistency**: Depending on water content during curing, **MULTI-GEL** can range from resilient foams to expansive gels.

Applications

MULTI-GEL is ideal for sealing active cracks and joints in underground sewers and manholes, even in the presence of large seepages or flowing leaks.

Physical Properties of Uncured Material

Property	Value	Test Method
Colour	Light brown	Visual
Relative Density (25°C / 77°F)	1.09 – 1.12	ASTM D891
Viscosity (25°C / 77°F)	725 - 1025 cP	ASTM D2196
Storage Stability	Up to 12 months	
Packaging	20 kg pails	

NSF/ANSI/CAN 61 by WQA.
Refer to www.wqa.org for restrictions and limitations.

Physical Properties of Cured Material

	Water-to-Grout Ratio				
Property	**1:1**	**3:1**	**5:1**	**8:1**	**Test Method**
Gel Time	110 s	100 s	90 s	100 s	
Tensile Strength	431.1 psi	261 psi	>163.9 psi	>145 psi	ASTM D638
Elongation	462.1%	1140%	>1250%	>1250%	ASTM D638
Die-C Tear	49 pli	51.7 pli	43.1 pli	43.3 pli	ASTM D624
Physical Form	Resilient Foam	Resilient Foam	Expansive Gel	Expansive Gel	

Note: This table represents physical properties at various resin-to-water ratios. These values were generated while simulating a situation where **MULTI-GEL** was applied under pressure similar to typical field condition applications.

Temperature Effects on Viscosity

Temperature	Viscosity
12°C (55°F)	1500 cP
25°C (77°F)	875 cP
30°C (85°F)	725 - 1025 cP
30°C (86°F)	750 cP

Note: The temperature of the chemical affects its viscosity (liquid thickness). **MULTI-GEL** is often used underground where temperatures can fluctuate, so the viscosity can also vary.

Temperature Effects on Reaction Times

	Water-to-Grout Ratio		
Temperature	**1:1**	**5:1**	**10:1**
21°C (70°F)	110 s	90 s	110 s
27°C (80°F)	85 s	65 s	70 s
32°C (90°F)	65 s	55 s	60 s

Note: Temperature also influences the reaction (working) time. Hotter temperatures will decrease reaction times, while colder temperatures will increase them.

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Application Guidelines

- **Preparation**: Site preparation will depend on the injection method specified in the project requirements. **MULTI-GEL** can be injected as a single-component system when sufficient water is present in the substrate. In conditions where moisture is limited or controlled reaction time is required, it is recommended to inject water as a second component using a mixing and metering machine.

- **Application**: Install using a fixed-ratio or variable-ratio two-component injection pump to produce a controlled gel. Select the appropriate water-to-resin ratio based on site conditions to achieve optimal penetration and gel time.

- **Crack Injection**: Drill holes at a 45° angle to intersect the crack or construction joint at mid-wall depth. Alternate drill holes on either side of the crack. Flush holes to remove dust and debris before installing packers and initiating the grout injection process.

- **Manhole Construction Joints**: Mix equal parts of **MULTI-GEL** and water. The mixture can be injected directly into the joint using standard injection techniques.

- **Curtain Injection**: Drill full-depth holes from inside the structure through to the exterior, spaced in a diamond pattern. Install injection packers and begin injecting grout from the lowest point, progressing upward. Continue injecting each packer until refusal. Re-inject earlier ports as needed to ensure complete formation of an external grout curtain that seals the structure from the outside.

- **Activated Oakum Technique**: Saturate **Multiurethanes OAKUM** rope with **MULTI-GEL**, then immerse in water to initiate reaction. Pack the activated material firmly into the leaking crack or joint to reduce heavy water inflow. Once the flow is reduced, proceed with crack or curtain injection as required.

- **Cleanup**: Flush all pumps, hoses, and injection accessories with **Multiurethanes PUMP CLEANER** immediately after use to prevent material buildup and damage to equipment.

Limitations

- Low temperatures significantly affect viscosity.
- Avoid splashing water into open containers as the material is water-activated.
- Do not exceed 32°C when warming pails with heat bands or heated water baths.

Safety & Handling

Wipe resin containers to avoid contamination by moisture. Keep the container closed when not pouring. Beware of pressure build-up in a closed container. Follow all current regulations and standards. Wear suitable protective equipment to prevent contamination of your skin or eyes. Ensure adequate ventilation and avoid breathing vapours. This material is intended for use by trained professionals with the proper equipment and training. Refer to the Safety Data Sheet (SDS) for detailed information on first aid.

Related Equipment

Use with **Multiurethanes** chemical grout injection pumps such as the **IMPACT X410 PUMP**, **PRESIDENT PUMP**, and **LEVER GUN**.

Customer Service & Orders

For additional information, please contact us at 1-800-663-6633 or info@multiurethanes.com.

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