MULTIURETHANES DATA SHEET

MME UNIVERSAL RESIN

Semi-Rigid Hydrophobic Polyurethane Grout

Product Overview

MME UNIVERSAL RESIN is a low-viscosity, single-component polyurethane resin designed for injection into cracks and joints in concrete and rock. It reacts with water to form a semi-rigid hydrophobic foam barrier. Once cured, the hydrophobic seal repels water, does not shrink or expand, and serves as a long-term solution to water infiltration. This product is suitable for use near potable water and effectively stops high-pressure inflows, providing reliable protection in demanding environments. The reaction time of the resin can be adjusted using **MME UNIVERSAL ACCELERATOR**, a catalyst that allows for precise control of curing speed based on site-specific conditions.

Key Features

- **Suitable for Potable Water**: Certified safe for use in applications near drinking water sources.
- **Stops High-Pressure Inflows**: Provides a reliable barrier against high-pressure water infiltration in concrete and rock.
- **Stable After Curing**: Forms a semi-rigid foam barrier that does not shrink or expand, ensuring a long-lasting, durable seal.
- **Controlled Reaction Time**: The curing time can be adjusted by varying the dosage of accelerator to meet specific project requirements.
- **Resistant to Corrosive Environments and Temperature Fluctuations**: Maintains optimal performance in challenging conditions, including exposure to harsh chemicals and temperature fluctuations.
- **Solvent-Free and Non-Toxic**: Safe for use in sensitive environments and a wide range of applications.

Applications

MME UNIVERSAL RESIN is ideal for water cut-off applications in underground mines, rock fissures, tunnels, subways, buried chambers, large hydroelectric dams, and deep excavation sites. Designed for use in both concrete and rock, it provides a reliable solution for stopping high-pressure water inflows in demanding environments.

Physical Properties of Uncured Materials

Property	MME Universal Resin	MME Universal Accelerator	Test Method
Colour	Light brown	Clear to light yellow amber	Visual
Relative Density (25°C / 77°F)	1.12 – 1.14	1.009 – 1.02	ASTM D891
Viscosity (25°C / 77°F)	200 - 350 cP	32 – 52 cP	ASTM D2196
Storage Stability	Up to 12 months	Up to 12 months	
Packaging	4 kg bottles 20 kg pails	500 g bottles 2 kg bottles	

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

Physical Properties of Cured Materials

Property	Value	Test Method
Tensile Strength	1650 – 2350 psi	ASTM D638
Elongation	2.5 – 4.5%	ASTM D638
Shrinkage by Weight	0%	In-House
Shrinkage by Volume	0%	In-House
Toxicity	Non-Toxic	
Free-Rise Density	0.9 – 1.3 g/cc (lbs/ft³)	

Catalyst Effect on Gel Time (at 25°C/77°F)

Accelerator Level	Start of Rise	Top of Rise
2%	28 – 32 s	360 s (6 min)
4%	15 – 21 s	180 s (3 min)
8%	9 – 15 s	90 s
10%	4 – 8 s	75 s

Note: The temperature of the components also affects the reaction time; hotter materials decrease the reaction or working time, while colder materials increase it. Also, pH and other factors present within the application site may affect the reaction or work time.

MME MULTIURETHANES LTD.
5245 CREEKBANK RD, MISSISSAUGA, ON L4W 1N3
TEL: 905-564-7650 | TOLL-FREE: 1-800-663-6633
multiurethanes.com

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Application Guidelines

- **Hand-Mix Reactivity Check**: A pre-blend reactivity test can be performed by hand-mixing in cups. **MME UNIVERSAL ACCELERATOR** can be added to **MME UNIVERSAL RESIN** prior to mixing with water to accelerate the reaction time. The recommended procedure for a reactivity check is 100 parts by weight of resin, 10 parts by weight of accelerator, and 5 parts by weight of water.

- **Preparation**: Drill injection holes and flush to remove drilling dust and debris before installing packers. Select the appropriate accelerator ratio and verify that the curing time meets project specifications. Use as little as 1% accelerator dosage for a slow reaction time or up to 10% for a faster reaction time.

- **Application**: Wipe resin containers to prevent contamination by moisture. At a dry location, pre-mix with the desired ratio of accelerator. Mix thoroughly until the mixture is well-blended, ensuring no air is entrained. If necessary, pre-flush the injection site to ensure enough water is present to activate the resin. Inject using a single-component injection pump. Always use separate pumps for resin and water.

- **Activated Oakum Technique**: Saturate **Multiurethanes OAKUM** rope with water-activated resin. Pack the activated material firmly into the crack or joint 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

- Reaction occurs with any moisture present.
- Reaction times increase as ambient temperature decreases.
- Reduction in shelf life after the container has been opened.

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.

MME Universal Resin stops water inflow problems in deep excavation sites.

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