Azo-Grout™ 424

Hydrophobic Polyurethane Grout

Product Data Sheet

Product description

Azo-Grout™ 424 is a flexible, hydrophobic polyurethane designed to stop water infiltration in concrete structures. Azo-Grout 424 is a solvent-free, methyldiphenyl isocyanate (MDI)-based prepolymer, which will react with water. When cured in a free-rise situation, it will expand to about 750 percent of its original volume and yield to a 7-8 pound per cubic foot (pcf) foam.

Water Quality Association has tested Azo-Grout 424 in accordance with the National Sanitation Federation (NSF) standard 61 and has approved this material for contact with potable water.

Tested and certified by WQA according to NSF/ANSI-61 when mixed with Azo-Cat™ 25 and water

Application range

Azo-Grout™ 424 is used for stopping water infiltration in the following applications:

Concrete crack injection

- Flowing water leaks
- Dry cracks
- Wet cracks
- Honeycombed concrete areas

Municipal and utility facilities

- Wastewater containment tanks
- Cracks and joints

Underground parking garages

- Expansion joints
- Sealing pipe openings
- Beam joints

Concrete dams and powerhouse galleys

- Flowing water leaks
- Cracks and joints

Table 1: Physical properties of uncured materials

	Azo-Grout™ 424	Measurement	Test method
Color	pale yellow		visual
Specific gravity	1.04		ASTM D891
Viscosity at 77°F (25°C)	450-550	centipoise	ASTM D638
Storage stability	12	months	
pH	not established		
Toxicity	see MSDS		
Hazard class	not regulated		
Solids	100	percent	
Corrosiveness	non-corrosive		
Flash point	390 (199)	Fahrenheit (Celsius)	

CE standards certification

AZON USA INC., 643 W. Crosstown Parkway, Kalamazoo, MI 49008-1910
Tel: 269.385.5942 • Fax: 269.373.9295 • International web site: www.azonintl.com

ISO 9001:2008 Certification

Table 2: Physical properties of cured materials

	Azo-Grout™ 424	Measurement	Test method
Tensile strength	150 ± 10	psi	ASTM D638
Elongation	70 ± 10	percent	ASTM D638
Pot life at 77°F (25°C)	50-60	minutes	
Shrinkage by weight	0	percent	in-house
Shrinkage by volume	3.44	percent	in-house
Toxicity	non-toxic		

Site preparation

Prepare the work site by drilling holes at approximately 45 degree angles to intersect the application site at about half the depth of the fissure. Holes are typically drilled on opposing sides of the application site in an alternating pattern. The spacing is dependent on the crack size. Flush drill waste from the hole prior to installing packers. Securely install injection packers in the pre-drilled holes.

Grout preparation

Perform a pre-blend of the Azo-Grout 424 using on-site water to ensure the desired gel time meets the requirements for the application. Azo-Cat™ 25 can be added to the Azo-Grout 424 prior to mixing with water to accelerate the reaction time. The recommended procedure for a reactivity check of the Azo-Grout 424 / Azo-Cat 25 system is:

100 parts by weight of Azo-Grout™ 424
x parts by weight of Azo-Cat™ 25
5 parts by weight of water

- **Add the Azo-Cat™ 25 to the Azo-Grout™ 424 and homogenize.**
- **Add the water and mix thoroughly.**
- **Using the start time as the time mixing begins after the addition of the water:**

1. Determine the cream time: the time in which the material just begins to foam.

2. Determine the tack-free time: the time in which the surface of the material is no longer tacky.

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Table 3: Effect of Azo-Cat™ 25 on gel time 77ºF (25ºC)			
Azo-Cat™ 25 weight percent	**Cream time**	**Tack-free time**	**Product**
1%	95 seconds	25 minutes	resilient foam
2%	70 seconds	15 minutes	resilient foam
3%	42 seconds	8 minutes	resilient foam
6%	35 seconds	3.5 minutes	resilient foam
10%	27 seconds	2.75 minutes	resilient foam

Table 3 indicates how varying amounts of Azo-Cat™ 25 affect gel time. Note that the temperature of the components will also affect the reaction time; hotter materials will decrease the reaction or working time, and colder materials will increase the reaction time. Furthermore, pH and other factors present within the application site may affect the reaction or work time.

Application method

Premix the amount of catalyst needed for the desired gel time. Start with a quantity of material that can be used in a reasonable amount of time. Inject Azo-Grout 424 using a single-component injection pump. If the crack is dry, inject water through each packer first using a separate pump. The use of a second pump for injecting water reduces the risk of having a reaction, resulting in a clogged pump.

Flush the pump and all mechanical components of all residual grout when injection is finished with Azo-Purge MP2™.

Note: Depending on the scope of the project, it may be advisable to consult a manufacturer's representative during installation.

See Technical Bulletin 1 for more information about application and procedures.

Precautions

This material is intended to be used by trained professionals with the proper equipment. The following safety measures are recommended:

- Wear protective gloves, clothing, goggles, hearing protection for noise reduction and hard hats for falling debris.
- Do not eat, drink or smoke while in active contact with these materials.
- Avoid skin contact.
- Wash hands thoroughly with soap and cool water. Never wash the skin with a solvent.
- Anyone experiencing difficulty breathing when working with these materials or showing an allergic reaction should seek fresh air immediately and consult a physician if symptoms persist.

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Material storage

Open containers of material should be used quickly to avoid moisture contamination. If a container needs to be resealed, it should be blanketed with nitrogen or dry air [less than -40°C (-40ºF) dew point] to minimize water exposure. Refer to the material safety data sheets (MSDS) for further information regarding these materials. All spills of Azo-Grout 424 should be cleaned up by absorbing the grout into an inert material and then transferring the mixture to an open top drum. Do not seal the waste drums for 24 hours to allow the Azo-Grout 424 to react completely. Dispose of waste material in accordance with state and local regulations.

Packaging

Azo-Grout 424 is available in 5-gallon pails at 45 pounds and 55-gallon drums at 463 pounds.

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