

AV-278 Low Vis Hydro™ with AV-279 Low Vis Accel™ Catalyst Hydrophobic Polyurethane Grout



AV-278 Low Vis Hydro™ is tested and certified by
WQA against NSF/ANSI/CAN 61 Drinking
Water System Components

For product use restrictions visit www.wqa.org

Description

AV-278 Low Vis Hydro™ is a very low viscosity, moisture-activated MDI-based polyurethane resin. The water/moisture activation is a two-step chemical reaction and is catalyzed by mixing AV-279 Low Vis Accel™ with AV-278. Injected as a single-component system, AV-278 permeates loose, granular soils and reacts rapidly upon contact with moisture to form a strong, waterproof bond. Its high expansion rate makes it ideal for filling voids, sealing active or potential water leaks, and stabilizing the surrounding soil structure. To achieve optimal results, AV-278 must be injected into confined soils. Once cured, it forms a dense, rigid, and impermeable soil/grout matrix that withstands both wet and dry cycles, delivering long-lasting performance in challenging underground conditions.

Applications

- Fills voids on the exterior of below-grade structures
- Stops high flows in below-grade structures
- Stabilizes soil to prevent soil erosion, sink holes, sinking foundations, and infiltration of water and silty soils
- Great for use around below-grade structures such as manholes, vaults, tanks, elevator pits, tunnels and more

Features & Benefits

- **NSF/ANSI/CAN 61 Drinking Water Systems Component Certified**
- Low viscosity allows for excellent permeation
- Free rise expands 4,000-6,000%
- Pumped as a single component (pre-mixed with AV-279)
- Controllable reaction time by adjusting AV-279 volume
- Withstands wet/dry cycles
- Multiple grouting techniques: probe and curtain grouting, permeation grouting and pressure injection

Required Products

- AV-279 Low Vis Accel™ (catalyst)

How AV-278 Works

AV-278 uncured resin must be injected into a confined soil. It permeates the soil void space with unreacted resin. The resin will react with moisture to form a resilient seal accomplished by three mechanisms: first, the resin seeks out water in the space and pores of the soil particles and adheres to the particles' surface. Second, the resin/water reaction begins to expand forming a tight compressive seal in the confined soil, and third, the network of compressed grout material within all the soil particles establishes a mechanical lock. NOTE: Moisture activated resins require a minimum amount of water/moisture. If little or not enough water/moisture is present in the crack/joint to be sealed, water should be flushed through the crack/joint prior to injecting AV-278.

Packaging – product is packaged by net weight

Grout

- Jug – 8.8 lbs. (4.0 kg)
- Pail – 44 lbs. (20 kg)
- Drum – 484 lbs. (219.5 kg)

Catalyst

- Container - 78 fl. oz. (2.31 L)

Physical Properties*

UNCURED AV-278	
Appearance	Brown resin
Viscosity (water=1)	25 – 65 cP @ 72°F (22°C)
Flash Point	244.4°F (118°C)
Specific Gravity (water=1)	1.188 @ 72°F (22°C) ± 3%
Density	9.91 lbs./gal. ± 3% (1.188 kg/L ± 3%)

Rev. 07.2025

CURED AV-278	
Appearance	Milky colored, rigid
Compressive Strength	<i>Consult Avanti Representative</i>
Toxicity	Non-toxic
AV-279	
Appearance	Light yellow liquid
Viscosity (water=1)	5-10 cP @ 72°F (22°C)
Flash Point	>200°F (>93°C)
Specific Gravity (water=1)	0.879 @ 72°F (22°C) ± 3%
Density	7.33 lb./gal. ± 3% (0.879 kg/L ± 3%)

* Laboratory results

Mix Guidelines

Gently shake or stir container(s) before using. Only use one container of AV-279 per pail of AV 278 Low Vis Hydro. No more than 78 fl. oz. of AV-279 should be used per pail of AV-278 (see Cream / Gel (Cure) Times Chart below). Mix thoroughly, but slowly, to avoid creating bubbles in the solution.

Cream / Gel (Cure) Times for AV-278 Low Vis Hydro (Min:Sec) ^{*,Note,1,2}			
		Half Catalyst (39 oz.) 16:1	Full Catalyst (78 oz.) 8:1
Temperature	40°F / 4°C	0:18 / 0:46	0:10 / 0:27
	50°F / 10°C	0:16 / 0:43	0:10 / 0:25
	60°F / 15°C	0:15 / 0:43	0:09 / 0:24
	70°F / 21°C	0:12 / 0:39	0:08 / 0:23
	80°F / 27°C	0:10 / 0:31	0:06 / 0:20

*Laboratory results

Note: Do not use more than one container of AV-279 catalyst per pail of AV-278.

1. Resin and water temperatures may affect cream / gel times.

2. Actual results may be different in the field due to site water used or site conditions.

Performance

For the best results, use AV-278 between 60°F – 90°F (16°C – 32°C). Flush equipment with AV-208 Technical Grade Acetone™ before and after use to remove moisture and clean equipment. Performance will be influenced by site conditions. If site temperatures are low, use a heat source to warm to ~72°F (22°C) and/or increase catalyst amount by 1% – 2%. Do not exceed more than 78 fl. oz. (2.31 L) of AV-279 per pail of the AV-278 resin. Do not use open flame as a heat source. At temperatures of 45°F (7°C), the viscosity of the product is significantly increased, making the miscibility with the reaction-water more difficult. Excess amounts of AV-279 may adversely affect performance. Catalyzed resin will react with moisture from the air, use product soon after mixing. The times presented are laboratory results. Actual results may be different in the field due to site water used or site conditions. Perform a standard cup test with site water to determine the desired reaction time.

Cleaning

Do not use water to clean equipment. AV-278 is water activated and will setup or cure in your hoses and equipment. Flush with AV-284 Pump Wash™ to remove uncured resin in hoses and equipment. Purge equipment and hoses with AV-208 Technical Grade Acetone™ before use to remove any remaining AV-284 and moisture.

- AV-208 Technical Grade Acetone™ – removes moisture from equipment (see Performance section)
- AV-222 Cleaner™ – removes cured resin from equipment
- AV-284 Pump Wash™ – removes uncured resin from pump hose

Storage

Store in temperatures within or near 45°F – 95°F (7°C – 35°C) in a dry atmosphere. Keep container tightly closed when not in use. Packaged under dry nitrogen to keep moisture out and extend shelf life. Storage of opened/partial containers at the lower range of the recommended storage temperature is not advised as moisture in the air above a partial container might condensate and might cause the grout to premature gel in the container. Avanti does not recommend storing full or partially filled containers of AV-278 that have been catalyzed or mixed with AV-279. Catalyzed grout may react over time or if not stored correctly.

Safety

Always use OSHA-approved personal protective equipment (PPE). Refer to the SDS for complete safety precautions. The Safety Data Sheets and Mixing Guidelines are available 24/7 at avantigrout.com.

Shipping – Motor and Air Freight available

- Not regulated under US DOT Regulations

Notice

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