

AV-160 SuperGel™

Chemically Reactive Gel



AV-160 SuperGel™ 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-160 SuperGel™ is a non-toxic, ultra-low viscosity acrylate resin that's chemically activated. With a mixed viscosity similar to water, AV-160 can successfully penetrate soil and rock, and cures within a controllable range of 5 seconds to around 10 hours. Once cured, it forms a durable, long-lasting water barrier and delivers excellent soil stabilization.

Applications

- Stops water infiltration into manholes, sanitary and storm sewer mainlines, joints, laterals, tunnels, mines, and various other geo-technical applications and underground structures by creating an impermeable solid and stabilizing external substrate
- Permeation grouting of non-cohesive soils for water control and soil improvement

Features & Benefits

- NSF/ANSI/CAN 61 Drinking Water Systems Component Certified
- Ultra-low mixed viscosity chemistry, 2-4 cP (water=1)
- Can be injected through remote packer equipment
- Controllable reaction times from seconds to hours
- Will not undergo syneresis
- Greater longevity compared to silicates
- Multiple grouting techniques including Tube-A-Manchette (TAM), probe, curtain and remote packer equipment

Required Products

- AV-101® Catalyst T+ (Triethanolamine)
- AV-102® Catalyst AP (Ammonium Persulfate) **or** AV-103® Catalyst SP (Sodium Persulfate)

How AV-160 Works

AV-160 and its catalysts are injected using a stainless steel, dual-component pump from two tanks (see Mix Guidelines). When the contents of both tanks are combined, free radicals are generated that initiate the Free Radical Polymerization process of the AV-160 monomer grouts to form a poly-acrylate copolymer. Injecting at a 1:1 ratio into the soil or external substrate will produce a strong, impermeable gel. Various additives can be used to adjust the reaction process and the properties of the cured gel. For optimal performance, AV-160 should be applied at a solids concentration of 10% or higher, with concentrations up to 20% recommended for achieving greater gel strength.

Optional Additives

- AV-105 Gel Guard™ – reduces freezing point
- AV-257 Icoset™ – increases adhesive qualities
- KFe (Potassium Ferricyanide) – extends gel time
- Tracer Dyes - used for tracking grout flow

Note: It is recommended to add KFe to Tank B (Catalyst Tank). The combination of KFe and AV-101 added to Tank A (Grout Tank) might prematurely gel the grout in the tank.

Packaging – product is packaged by net weight

- Pail – 46 lbs. (20.8 kg)
- Drum – 135 lbs. (61 kg)
- Tote – 2,300 lbs. (1,020 kg)

Physical Properties*

UNCURED	
Appearance	Orange-tinted liquid
Viscosity (water=1)	2–4 cP @ 72°F (22°C) as 20% solution
Viscosity (water=1)	1–2 cP @ 72°F (22°C) as 10% solution
pH	6.5-7.5

Specific Gravity (water=1)	~1.185-1.195 @ 72°F (22°C) ± 3%
Density	~ 9.93 lbs./gal. ± 3% (1.19 kg/L ± 3%)
Water Solubility	Completely miscible
CURED	
Appearance	Orange-tinted gel mass
Hydraulic Conductivity	< 10 ⁻⁸ cm/s
Compressive Strength	120 psi in sand
Toxicity	Non-toxic

* Laboratory results

Mix Procedure Example for AV-160 Chemical Grout (60-gal. mix at 10% Concentration with 1% catalysts)

Percentage of catalysts is calculated on total batch mix (Tank A + Tank B).

See detailed Mixing Guidelines for various acrylic monomer grout concentrations and tank sizes at avantigrout.com

Grout Tank (Tank A)

1. Add 10 gallons (37.8 L) of water.
2. Add one 135 lb. drum of AV-160.
3. Add 0.5 gallons (1.9 L) of AV-101® Catalyst T+.
4. Fill with water up to 30-gallon mark.
5. Mix thoroughly. AV-160 should be mixed well prior to use to avoid settlement.

Catalyst Tank (Tank B)

1. Add 10 gallons (37.8 L) of water.
2. Add 5 lbs. (2.27 kg) of AV-102® Catalyst AP or AV-103® Catalyst SP.
3. Fill with water up to 30-gallon mark.
4. Mix thoroughly.

IMPORTANT: At elevated temperatures, AV-102 or AV-103 dissolved in water loses its effectiveness rapidly.

Note: Ingredients for both tanks are only compatible with stainless steel or plastic.

Performance

Performance may be affected by site conditions. Injection should occur the day the grout tank is mixed. AV-101 in the grout tank may be consumed over time which will affect the gel time. Mixing the grout tank with AV-101 days in advance might produce a much longer gel time than initially set and might require additional AV-101. Always perform a cup test before injecting.

The temperature of the material will also affect the reaction time. If site temperatures are low, warm up the product to the recommended operating range of 60°F to 100°F (16°C to 38°C). A decrease in pH may lengthen the cure time. AV-160 grout may expand or swell after curing when exposed to water. The extent of expansion will depend on the grout concentration and/or the confining pressures.

Cleaning

If cross contamination has occurred, remove all cured gel, dissolve baking soda in water, and rinse grouting equipment thoroughly followed by multiple clean water rinses. Dispose of water in accordance with local, regional, national and international regulations.

Storage

Store in temperatures within or near 45°F – 95°F (7°C – 35°C) in a dry atmosphere. Keep out of direct sunlight.

Safety

Use of AV-160 is authorized by Avanti International only after completion of the required Safe Operating Practices Program (SOPP). 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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