Mixing Guidelines: AV-160 SuperGel™ Drum (135 lbs.) – Standard 10% Concentration

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When properly mixed, (1) 135 lb. drum of AV-160 SuperGel results in a 60-gallon (227.12 liters) batch of ~10% injectable grout. For best results, these grouts should be used at solids concentrations of 10% or greater. Concentrations of up to 20% are favored for higher-strength gels and greater ability to handle dilution prior to gelation.

If a higher grout concentration is desired, refer Table 2 below for Concentrations based on Total Fill Volume for Tank A and Tank B. Most manufacturers of equipment used for mixing acrylic chemical grout have two standardized 30 gallon (113.56 L) chemical tanks, shown below as Tank A and Tank B.

Refer to Avanti's Safe Operating Practices Program (SOPP) for further safety, handling, and product use information or call your Avanti representative.

WHAT YOU WILL NEED:

- (1) 135 lb. drum of AV-160 SuperGel
- 5.5 lbs. (78 fl. oz.) AV-101 Catalyst T+ (triethanolamine (TEA))
- 5.5 lbs. AV-103 Catalyst SP (sodium persulfate)
- Water (potable water or clean site water)
- Personal Protective Equipment (PPE) in accordance with Avanti's Safety Data Sheet (SDS)
- Optional but encouraged – tracer dye to mixture to track grout travel

MIXING TANK A (Grout Tank) - See Table 1

1. Wear the appropriate PPE in accordance with Avanti's Safety Data Sheets (SDS). Up to date SDS can be found online at avantigrout.com.
2. Fill Tank A (grout tank) with 10 gal. (37 L) of water.
3. Pour or pump the contents of one drum (135 lbs.) of AV-160 SuperGel to Tank A.
4. Add AV-101 Catalyst T+ (5.5 lbs. 78 fl. oz.) to Tank A. Stir well.
5. Add enough water to Tank A to reach 30 gal. (113.6 L) mark. Stir well.
6. Optional but encouraged – add tracer dye to mixture to track grout travel

MIXING TANK B (Catalyst Tank) – See Table 1

1. Fill Catalyst Tank (Tank B) with 20-25 gallons (76-95 L) of water.
2. Add AV-103 Catalyst SP (5.5 lbs.) to Tank B. Stir until AV-103 is completely dissolved.
3. Add enough water to Tank B to reach 30 gal. (113.6 L) mark. Stir well.
4. Optional but encouraged – tracer dye to mixture to track grout travel

TANK A		TANK B		
Water: 10 gal. (37 L) AV-160 SuperGel: (1) 135 lb. drum AV-101 Cat-T+: 5.5 lbs. (78 fl. oz.) Water: add to 30 gal. mark *Cat T+ - min. amount – 1%, max. amount - 5% Based on total batch weight	+	Water: 20-25 gal. (76-95 L) AV-103 SP: 5.5 lbs. Water: add to 30 gal. mark *SP – min. amount – 1%, max. amount - 5% Based on total batch weight	=	**10% AV-160 in solution. Weighs approx. 500 lbs. or 226.8 kg**
30 gal. (113.6 L)		**30 gal. (113.56)**		**60 gal. (227.12 L)**

Table 1. Mix Component Steps by Tank

Grout Concentration	Total Tank A Fill Volume (gal.)	Total Tank B Fill Volume (gal.)
~10%	**30.0**	**30.0**
~12%	**25.0**	**25.0**
~15%*	**20.0**	**20.0**
~20%*	**15.0**	**15.0**

Table 2. Concentrations Based on Total Fill Volume of Tank A and B

*Do not add water to Tank A before adding AV-160.

Note: Before grouting, perform a "cup test". A cup tests consists of using two (2) disposable cups, filling one cup 25% full of Tank A solution, and the other cup 25% full of Tank B solution. Using a watch with a second hand or stopwatch, track the time required for the solutions to gel – or cure - as you mix the solutions together, gently stirring the mixed solution. The normal gel time at 72°F should be approximately 60-75 seconds for a standard batch 10% grout concentration. Higher concentrations will cure faster. For additional information regarding gel times, call your Avanti International representative.

About the Products

- **AV-160 SuperGel™** – acrylamide free, acrylate gel
- **AV-101® Catalyst T+** - colorless liquid which is used as a required activator for the reaction of AV-160. The special blend of ingredients in AV-101 reduces its freezing point to 0°C and enhances the final gel. AV-101 is can only be added to the grout side tank. AV-101 is incompatible with oxidizing compounds such as AV-102 AP or AV-103 SP and should be stored in a tightly closed container in an area isolated from other chemicals.
- **AV-103® Catalyst SP** – Sodium persulfate, white crystalline solid used as the initiator for the radical polymerization reaction of acrylic and acrylate monomers. Required component and can be increased from 5 lbs. to a maximum of 25 lbs. AV-103 can only be added to the catalyst side tank. AV-103 is a strong oxidizing material which decomposes over time.

Optional Additives

- **Tracer Dyes** – dye powder or tablets used to track the travel of the grout. Various colors are available.
- **Potassium Ferricyanide (KFe)** – red crystal, chemical compound used in small quantities to extend gel times. See Technical Data Sheet for more details. Use the following guidelines to extend AV-160's gel time:
  - i) Mix (1) lb. of KFe into (1) gal. (3.8L) of planned mix water to create a 12% KFe solution based on weight.
  - ii) Actual set times vary for specific site and temperature conditions. Completing a panel test to determine site specific set times is recommended. Contact your Avanti representative for KFe Panel Testing Guidelines.
  - iii) Add desired amount of KFe/Water mixture to Tank A (grout side) only and mix thoroughly.

iv) **CAUTION:** The combination of KFe and AV-101 added to the grout tank will prematurely gel the grout tank when kept overnight.