

Mixing Guidelines: AV-118® Duriflex Drum (135 lbs.) - Standard 10% Concentration

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When properly mixed, (1) 135 lb. drum of AV-118 Duriflex will make a 60-gallon (227.12 L) batch of ~10% concentration 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-118 Duriflex
- 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 of AV-118 Duriflex (135 lbs.) into 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 gal. (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 – add tracer dye to mixture to track grout travel

TANK A		TANK B	
Water: 10 gal. (37 L) AV-118 Duriflex: (1) 135 lb. drum AV-101 Cat-T+: 5.5 lbs. (78 fl. oz.) Water: add to 30 gal. mark *Do not exceed 2.5% AV-101 Cat T+	+	Water: 20-25 gal. (76-95 L) AV-103 SP: 5.5 lbs. Water: add to 30 gal. mark *Do not exceed 3% (15 lbs.) of AV-103 SP	=
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 more than 10 gallons of water to Tank A before adding AV-118.

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 30-40 seconds for a standard batch 10% grout concentration. Higher concentrations will cure faster. For additional information regarding gel times, call your Avanti International representative.

AV-118 Gel Times in Seconds

AV-118	AV-101 and AV-103 % on Total Batch				
Temp.	1%	2%	3%	4%	5%
80°F	18				
70°F	32	9			
60°F	90	20	9	5	
50°F	150	28	15	8	5
40°F	190	45	26	15	9

Table 3. Estimated Gel Times in Seconds

Note: The gel times presented are based on controlled laboratory conditions and are for reference purpose only. It should be expected that gel times will vary on the job site. It is the sole responsibility of the user to verify and monitor gel times of their specific grout mix.

About the Products

- **AV-118® Duriflex** – acrylic monomer solution used as an alternative to AV-100 (contains less acrylamide than AV-100).
- **AV-101® Catalyst T+** - colorless liquid which is used as a required activator for the reaction of AV-118. 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

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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-100's gel time:
 - i) Mix (1) lb. of KFe into (1) gal. (3.8 L) 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.