

# Mixing Instructions



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## AV-118 DURIFLEX

Most manufacturers of equipment used for placing AV-118 Duriflex chemical grout have standardized on two 30-gallon chemical tanks, shown below as TANK A and TANK B. When properly mixed, one 50 liter (14.7 gallon) container of AV-118 Duriflex Chemical Grout results in a 10% strength grout mix.

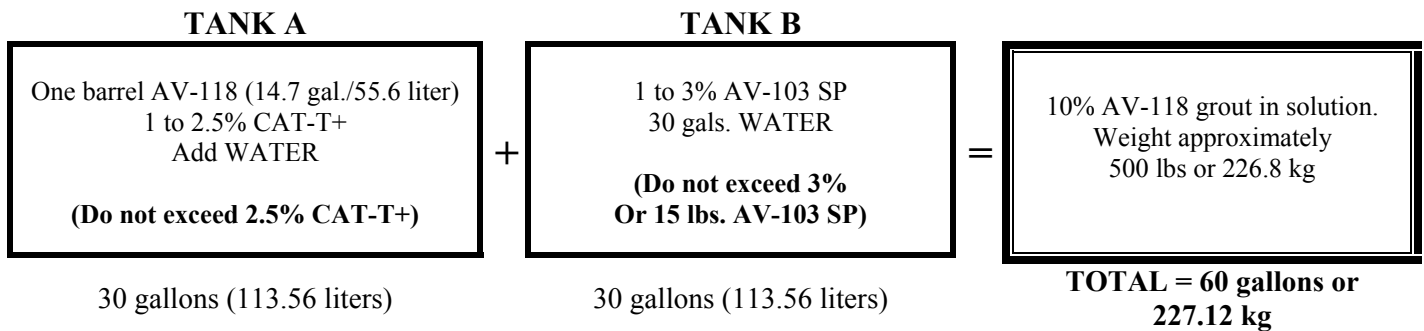
The 50 liter (14.7 gallon) container contains the equivalent grout of a 50-lb. bag of AV-100 that has been dissolved in water.

One container will make a 60-gallon batch of grout. For best results, these grouts should be used at solids concentrations of 10% or greater. Concentrations of up to 10% are favored for higher-strength gels and greater ability to handle dilution prior to gelation.

- TANK A**
1. Fill Tank A with approximately 15 gallons (56.79 liters) of water.
  2. Pour the 14.7 Gallons (15 Gallon/57 liter Drum) of AV-118 Duriflex blend into Tank A
  3. Add the AV-101 CAT-T+ (Standard Mix uses 0.5 gallons) (1.89 liters)
  4. Add water to Tank A to complete the 30-gallon (113.56 liters) mix and stir until all of the liquids are mixed together
- TANK B**
1. Fill Tank B with 20 – 25 gallons (76 – 95 liters) of water.
  2. Add AV-103 SP to achieve desired gel time (Standard Mix uses 4.0 lbs. or 1.814 kg)
  3. Stir until AV-103 SP is completely dissolved.
  4. Add water to 30 gallon (113.56 liters) fill line and stir until completely mixed.

Note: Before grouting, perform a “cup test” which consists of using two (2) cups, filling one ¼ full with TANK A solution and the other ¼ full with the solution from TANK B. Using a watch with a second hand, track the time required for the solutions to gel as you mix the solutions together, pouring from cup to cup. The normal gel time should be approximately 22 – 28 seconds.

For additional information regarding gel times, call your Avanti representative.



**Ratio AV-101 CAT T+**

1% = 0.5 Gallons (1.89 liters)  
 2% = 1 Gallon (3.79 liters)  
 2.5% = 1.25 Gallons (4.73 liters)

Typical Pitcher = 0.5 Gallons (1.89 liters)

**Ratio AV-103 SP**

1% = 5 lbs. (2.27 kg)  
 2% = 10 lbs. (4.54 kg)  
 3% = 15 lbs. (6.80 kg)

Typical Scoop = 5 lbs. (2.27 kg)

For normal use, the catalyst system is composed of AV-101 CAT T+ (Triethanolamine plus additives) and AV-103 SP (Sodium Persulfate).

**AV-101 CATALYST T+**

1. A heavy syrup-like liquid supplied in 55-gallon (208.2 liters) drums or 5-gallon (18.93 liters) plastic pails and is the chemical most commonly used as the activator in the polymerization reaction of the chemical grout. AV-101 CAT-T+ weighs 9 lbs/gal (15.82 kg/liter).
2. Added to the tank containing the AV-100 solution and should only be added after dissolving both components of AV-100 completely in water.
3. Incompatible with oxidizing compounds, such as AV-102 AP, and should be stored in a tightly closed container in an area isolated from other chemicals.
4. Blended with ethylene glycol to reduce its freezing temperature from 70°F to 0°F (21.1°C to -17.78°C)

**AV-103 CATALYST SP**

1. Initiator that triggers the polymerization reaction. It is added to the second chemical tank, pumped through its own hose, and mixes with the AV-118/AV-101 solution in the mixing chamber of the sealing packer or in the void area of the packer.
2. A white granular material normally supplied in 225-lb (102.06 liters) fiber drums or 50-lb (22.68 kg) plastic pails. It is a very strong oxidizing agent. Exposure to moisture will reduce the effectiveness of the catalyst as an oxidizer.

**Optional Additives**

1. **AV-105 Ethylene Glycol** – Protects against freezing and dehydration
  - a. Amount: 3 to 5 Gallons (11.36 to 18.93 liters) (replaces water, either tank)
  - b. Supplied as: Pails (5 Gallons or 18.93 liters) or Drums (55 Gallons or 208.12 liters)
2. **AV-257 Icosec** – Increases compressive and tensile strength. Caution should be taken to ensure the equipment valve mechanism can function using this additive (similar to latex).
  - a. Amount: 3 to 5 Gallons (11.36 to 18.93 liters) – replaces water, ADD TO THE GROUT SIDE TANK ONLY
  - b. Supplied as: Pails (5 Gallons) or Drums (55 Gallons or 208.2 liters)
3. **Potassium Ferricyanide (KFe)** – An inhibitor used in small quantities to extend the gel time. Used when working in high temperatures or a long gel time is required.
  - a. Amount: Very small amount (1 to 2 teaspoons to start) (1 US teaspoon = 0.9857 Metric teaspoon)
  - b. Supplied as: Technical Grade, 1 lb. bottles (0.4536kg)
4. **AC-50W Root Inhibitor** – Additive slows new growth of roots in the sewer joints.
  - a. Amount: 3.2 ounces (90.72 grams) by weight – ADD TO THE GROUT SIDE TANK ONLY
  - b. Supplied as: 4 lb. (1.814 kg) bag