

Mixing Instructions



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AV-100 POWDER

When using AV-100 Acrylamide and AV-100 MBA Emulsion

See the Safe Operating Practices Program (SOPP) booklet for further mixing instructions and information.

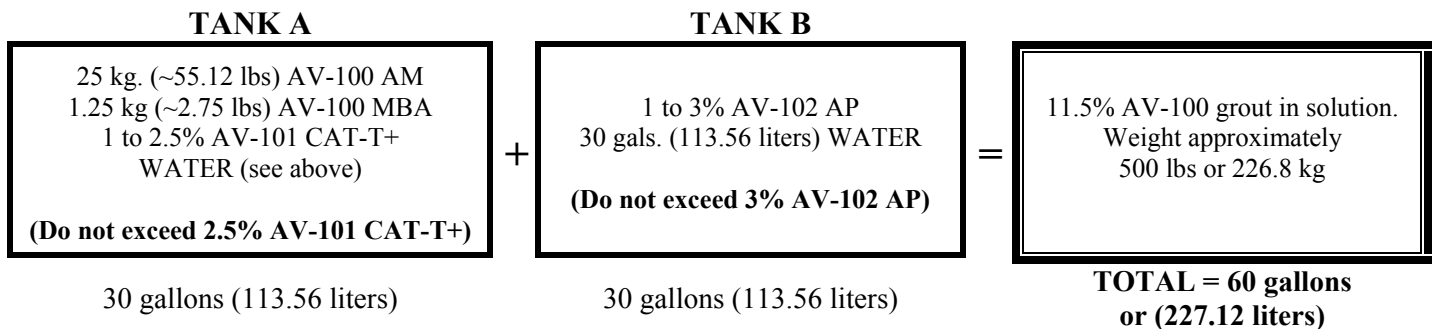
When mixing the AV-100 Chemical Grout solution (TANK A in the description below) using AV-100 AM (Acrylamide Monomer) and AV-100 MBA (Methylenebisacrylamide), follow these steps:

- TANK A**
1. Fill Tank A with approximately 15-20 gallons (57 – 76 liters) of water and add emulsified AV-100 MBA.
 2. Rinse the empty bottle of MBA and add to TANK A (may need to be done more than once).
 3. Pour the 25 kg bag of AV-100 AM into Tank A.
 4. Add water to Tank A, leaving room for the AV-101 CAT-T+ to be added.
 5. Add the AV-101 CAT-T+ to complete the 30-gallon (113.56 liters) mix.
 6. Stir until all of the powder is in solution.

- TANK B**
1. Fill Tank B with 20-25 gallons (76 – 95 liters) of water.
 2. Add AV-102 AP to achieve desired gel time.
 3. Stir until AV-102 AP 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.



Most equipment used for placing acrylamide chemical grout have standardized 30-gallon (113.56 liters) chemical tanks. When mixed, one 25kg (55.12 lbs) bag of AV-100 Acrylamide and one container of AV-100 MBA emulsion result in an 11.5% strength grout mix. Increasing the water to 34.5 gallons (130.59 liters) in each tank will reduce the strength to approximately 10%. Percentages refer to parts (by weight) of chemical per 100 parts of total grout solution mixed.

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-102 AP

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-102 AP (Ammonium Persulfate).

AV-101 CATALYST T+

1. A heavy syrup-like liquid supplied in 55-gallon (208.2 liter) 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-102 CATALYST AP

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-100/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 liter) 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 – 18.93 liters) (replaces water, either tank)
 - b. Supplied as: Pails (5 Gallons or 18.93 liters) or Drums (55 Gallons or 208.12 liter)
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 – 18.93 liters) replaces water, ADD TO THE GROUT SIDE TANK ONLY
 - b. Supplied as: Pails (5 Gallons or 18.93 liters) or Drums (55 Gallons or 208.2 liter)
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 teaspoons)
 - b. Supplied as: Technical Grade, 1 lb. bottles (0.4536 kg)
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