MIXING GUIDELINES

AVANTI
Stop leaks. Stabilize soil.
Control groundwater. Permanently.

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AV-100® Chemical Grout – Granules (50 lb. bag)

One 50 lb. of AV-100 Chemical Grout will make 1 each 60-gallon (75.7 liters) batch of ~10% injectable grout. For best results, these grouts should be used at a solids concentration of 10% or greater. Concentrations of up to 20% are favored for higher-strength gels and greater ability to lessen grout concentration dilution prior to gelation.

When mixing the AV-100 Chemical Grout from a 50 lb. bag, follow these steps for a standard batch of ~10 percent grout concentration. If a higher grout concentration is desired, please refer to the table below for Tank A and Tank B volumes.

Standard Batch using 50 lb. bag of AV-100 Chemical Grout - Granules

TANK A

1. Wear the Appropriate PPE in accordance with Avanti's SDS
2. Fill Tank A with approximately 10 - 15 gallons (56.8 liters) of water.
3. Open the 50 lb. bag carefully and unfold the inner plastic bag long neck.
4. Pour all the contents of the 50 lb. bag of AV-100 into Tank A by submerging the long neck under water. Stir well.
5. Add the AV-101 CAT-T+ (5.5lbs.; 78 fl. oz.).
6. Add enough water to Tank A to reach the 30-gallon (113.6 liters) mark.

TANK B

1. Fill Tank B with 10 - 15 gallons (56.8 liters) of water.
2. Add the AV-102 AP (5.5 lbs.).
3. Stir until AV-102 AP is completely dissolved.
4. Add enough water to Tank B to reach the 30-gallon (113.6 liters) mark.

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 at 72˚F should be approximately 30 – 40 seconds for a standard batch ~10% grout concentration. Higher concentrations will cure marginally faster.

Grout Concentration (%)	Tank A Volume (gallons) Mark	Tank B Volume (gallons) Mark
~10	30	30
~12	25	25
~15	22.5	22.5
~20	15	15

Refer to the table Estimated Gel Times on the next page for estimated gel times at various temperatures or call your Avanti International representative for assistance.

TANK A		TANK B		
AV-100 Chemical Grout – 50 lb. bag AV-101 CAT-T+: 5.5lbs. (78 fl. oz.) WATER: enough to reach 30-gallon mark **(Do not exceed 5% AV-101 CAT-T+)**	+	AV-102 AP: 5.5 lbs. WATER: enough to reach 30-gallon mark **(Do not exceed 5% AV-102 AP)**	=	~10% AV-100 grout in solution.
30 gallons (113.6 liters)		30 gallons (113.6 liters)		**TOTAL = 60 gallons or (227.1 liters)**

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Estimated Gel Time in seconds

AV-100	AV101 and AV102 % on Total Batch				
Temp	**1%**	**2%**	**3%**	**4%**	**5%**
80°F	18				
70°F	32	8			
60°F	58	18	8		
50°F	97	34	20	8	
40°F	140	44	30	21	8

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's the sole responsibility of the user to verify and monitor gel times of their specific grout mix.

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 grout tank containing the AV-100 solution, Tank A.
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.

AV-102 CATALYST AP

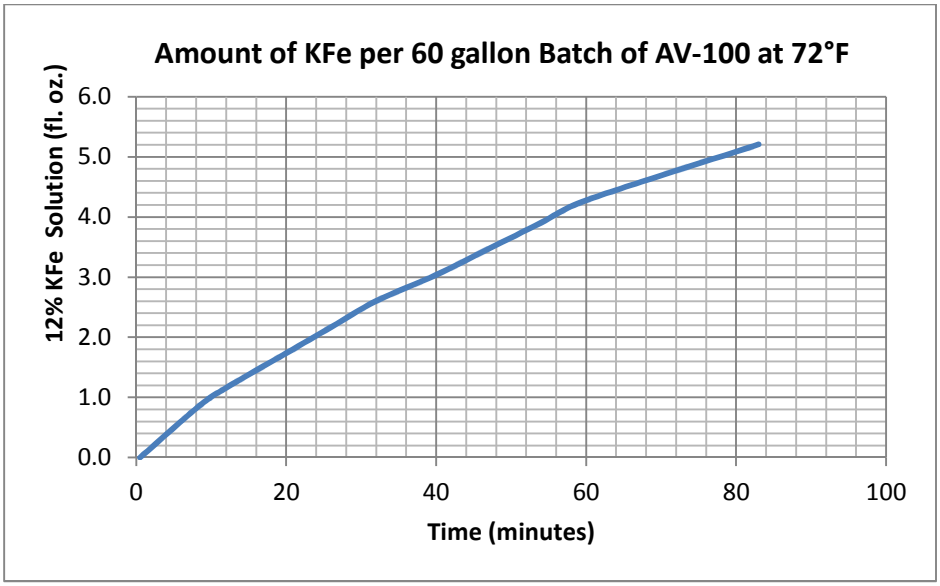
1. Initiator that triggers the polymerization reaction. It is added to the catalyst chemical tank, pumped through its own hose, and mixes with the AV-100/AV-101 solution in the mixing chamber of the sealing packer or in the void area of the packer.
2. A white granular material normally supplied in 220-lb (99.790kg) 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.
3. Added to Tank B.

Optional Additives

1. **AV-257 Icoset** - 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: Maximum 3 Gallon (11.4 liters) – replaces water, ADD TO TANK B ONLY
    b. Supplied as: Pails (5 Gallons, 18.93 liters) or Drums (55 Gallons, 208.12 liters)
2. **Potassium Ferricyanide (KFe)** - Extends gel time. (See KFe TDS for more details)

    Use the following guidelines to extend gel time.

    a. Mix 1lb of KFe into 1 gallon (3.8 liters) of planned mix water. This will create a 12 percent KFe solution.
    b. Using the graph below determine your desired set time. Actual set times will vary for each specific site and temperature. Avanti recommends a KFe Panel Test be performed by the customer to determine their site specific set times. Please reference **KFe Panel Testing Guide** by Avanti International.
    c. Add the desired amount of solution to the GROUT SIDE OR TANK A and mix thoroughly.



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