Bio-Tek Agarose- Directions for Use

Product Codes: AGA0100, AGA0050, AGA0020, AGA0010, AGA0005.

Important: The following information will assist you in the proper preparation of Bio-Tek Agarose for electrophoretic purposes. Proper heating of your agarose/buffer mixture is important in obtaining a gel mixture that is easy to cast and that will polymerize correctly.

In general, heating times are shorter for Bio-Tek Agarose than other brands of agarose.

When agarose is placed in a buffer such as TAE (Tris/Acetate/EDTA) or TBE (Tris/Borate/EDTA), it is generally insoluble. However, when this agarose solution is heated, the agarose particles become hydrated and thus go into solution. This hydration process is time-dependent, and different types of agarose will have varying hydration points. Bio-Tek Agarose is extremely pure and comprised of ultra-fine particles. This ultra-fine structure is important in providing a porous, highly resolving matrix for electrophoretic applications. As a result of this structure, Bio-Tek Agarose will have a faster rate of hydration than many other types of agarose. If you have used other brands of agarose you may mistakenly boil Bio-Tek Agarose much longer than is needed, which results in a thick gelatinous solution that is difficult to cast and brittle when polymerized.

Helpful Hints For Preparing Bio-Tek Agarose

Preparation of a typical 100 ml, 1% agarose gel in 1X TAE or 1X TBE buffer.

- In an appropriate container (an Erlenmeyer flask or Schott bottle at 2-5X the volume of the required gel solution volume is optimal), slowly add agarose crystals to your buffer solution while gently swirling. This will help to eliminate clumping of the agarose.
- Heat the solution in a microwave on high power for 30 seconds. (For smaller or larger volumes, increase or decrease heating times proportionally to volume size). Heating times will vary depending on your microwave oven (wattage), size of the flask used and the % agarose.
- Swirl the agarose solution gently to re-suspend the particles.
- Heat the solution another 30 seconds on high power, remove and swirl the agarose solution.
- Place the solution back in the microwave and heat on high power until the solution just starts to boil (boiling point will probably take 10-30 seconds). Use caution when handling the hot flask. Microwaved solutions may become superheated and can boil vigorously when moved or touched. After removing the boiling solution from the microwave oven, allow to cool briefly (1-2 minutes) at room temperature, then gently swirl the solution to release entrapped air (some air bubbles will remain).
- Place the agarose solution back in the microwave, heat on high power and let the solution boil for approximately 15 seconds. Inspect the solution for agarose crystals (they will appear as floating "lenses") while gently swirling. If there are particles present, repeat this step until all crystals are dissolved.
- Allow the agarose solution to cool to ~50-55°C on the lab bench prior to pouring into a prepared gel tray. This is conducive to a more uniform pore size and will prevent the warping of your gel apparatus. Before pouring the gel, gently swirl the agarose solution to help dissipate most of the remaining air bubbles.
- Pour the appropriate volume of gel solution into the prepared gel tray. Immediately after pouring, check to see that there are no air bubbles under or between the teeth of the gel comb.
- Allow the gel to completely polymerize at room temperature (about 15-30 minutes) before gently removing the comb and loading your samples.

Optimal Running Conditions

	Gel %	Optimal Separation (bp)	Recommended Buffer
Bio-Tek Agarose	0.80	800-22,000	TAE
	1.00	500-10,000	TAE/TBE
	1.20	400-7,000	TAE/TBE
	2.00	250-5,000	TBE

NOTE: TAE buffer is recommended for general use, in-gel manipulations and band recovery procedures, but TBE buffer will offer improved resolution of small bands.