

# Procedures for Gel Preparation with AcrylaGel and Bis-AcrylaGel

**national  
diagnostics**

National Diagnostics' AcrylaGel (EC-810) is a ready-to-use 30% acrylamide solution in distilled, deionized water. AcrylaGel can be cross-linked with Bis-AcrylaGel (EC-820), our ready-to-use, 2% solution of methylene bisacrylamide. Alternatively, any powdered acrylamide crosslinking reagent can be used with AcrylaGel. Store solutions tightly capped in a dark area at room temperature (20°C). *Acrylamide has been found to be neurotoxic. Protective eyewear and gloves should be worn while handling these products. If accidental exposure occurs, contact a physician immediately.*

## Mix Gel Solution

Calculate how much AcrylaGel and Bis-AcrylaGel you need to make your gels by using the formulas at right. Bring up to the desired final volume with your usual buffers and distilled water. Pour the solution into an Erlenmeyer flask with a side-arm. In most cases, AcrylaGel and Bis-AcrylaGel will gel without degassing. However, if degassing is desired, add a stirring bar to the solution and stopper the flask. Degas the solution under vacuum for 5 minutes while stirring on a magnetic stirrer.

$$V_a = \frac{(A)(V_t)}{30} \quad V_b = \frac{(A)(C)(V_t)}{200}$$

$V_a$  = Volume of AcrylaGel to be used (ml),  
 $V_b$  = Volume of Bis-AcrylaGel to be used (ml),  
 $V_t$  = Total volume of gel casting solution desired (ml),  
 $A$  = % acrylamide desired in gel,  
 $C$  = % crosslinker desired =  $\left( \frac{\text{g bis}}{\text{g acrylamide}} \times 100 \right)$

EXAMPLE: To make 100ml of a 10% acrylamide gel 2.7% crosslinked with bis, calculate the volume to be added as follows:

$$V_a = \frac{(10)(100)}{30} = 33.3\text{ml AcrylaGel}$$
$$V_b = \frac{(10)(2.7)(100)}{200} = 13.5\text{ml Bis-AcrylaGel}$$

## Add APS and Cast Gel

Add 1.0ml of 10% (w/v) FRESHLY PREPARED 10% Ammonium Persulfate for every 100ml of gel casting solution. Swirl gently to mix. Add 0.1ml of TEMED for every 100ml of gel casting solution. Swirl gently to mix. Pour the solution into the gel casting cassette. The gel should begin

to set in 10-20 minutes. NOTE: After two hours of polymerization wrap each end of the gel cassette with clear plastic wrap. This is important to keep the ends of the gel from drying and to maintain sample well integrity. Appropriately wrapped gels may be stored for up to 48 hours.

## Suggestions for Best Results

- Clean glass plates thoroughly. Rinse with ethanol and wipe dry. Apply Glass Free™ (Cat. #EC-621) to one plate to ensure release after electrophoresis.
- Degassing will ensure the reproducibility of results.
- Use fresh, high quality buffers and initiators.

## Other Products from National Diagnostics for Nucleic Acid Separation and Analysis

**SequaGel 4, 4.25, 4.75, 6 or 8** Order No. (see below)  
National Diagnostics' SequaGel Kits were created for laboratories repeatedly preparing the same percentage 19:1 acrylamide:bis-acrylamide gels. Order numbers are **EC-834, EC-832, EC-837, EC-836, and EC-838** respectively.

**SequaGel® Sequencing System** Order No. **EC-833**  
National Diagnostics' SequaGel Sequencing System consists of SequaGel Concentrate, SequaGel Buffer, and SequaGel Diluent. This three bottle system allows the researcher to prepare gels of varying percentages.

**SequaGel MD** Order No. (see below)  
Available as the SSCP Kit (**EC-846**), Heteroduplex Kit (**EC-847**), or alone as SequaGel MD Monomer Solution (**EC-845**), SequaGel MD is a proprietary gel formulation permitting minor mutational differences in DNA sequences to be readily detected.

**SequaGel XR** Order No. (see below)  
National Diagnostics' SequaGel XR is specially formulated to produce greater resolution and more sequencing information - up to 500 DNA bands on a single gel. SequaGel XR is available as a two bottle gel kit (**EC-842**) or concentrate (**EC-843**).

**10X TBE Buffer** Order No. **EC-860**  
National Diagnostics' proprietary production methods create the most pure and stable 10X TBE on the market. 10X TBE contains 0.89M Tris Borate pH 8.3 and 20mM Na<sub>2</sub>EDTA.

**Ammonium Persulfate** Order No. **EC-504**  
High quality gels require high quality ammonium persulfate. National Diagnostics' ammonium persulfate is ultra-pure, containing low absorbed water for consistent initiating capabilities.

**TEMED** Order No. **EC-503**  
National Diagnostics' TEMED has been fractionally distilled to remove all trace metals and amine impurities, ensuring excellent gel formation.

**Glass Free™** Order No. **EC-621**  
The application of National Diagnostics' Glass Free to glass casting plates allows the easy release of polyacrylamide gels.

**AquaPor™ GTAC Agaroses** Order No. (see below)  
National Diagnostics provides a complete line of premium quality agaroses, AquaPor LE, (General Purpose, **EC-202**), AquaPor ES (Ultra High Strength, **EC-203**), AquaPor HR (High Resolving, **EC-205**) and AquaPor LM (Low Melting, **EC-204**).

**TAE Buffer (50X)** Order No. **EC-872**  
TAE Buffer is used in agarose gel electrophoresis when the DNA of interest is to be isolated. National Diagnostics' TAE Buffer is ultra-pure.

**OligoPrep™ Kit** Order No. **EC-857**  
OligoPrep is the first truly melttable acrylamide separation matrix. OligoPrep combines the resolution of acrylamide with the convenience of melting for the purification of fractionated nucleic acids.

**AccuGel™ 19:1 OR 29:1** Order No. **EC-850 OR EC-852**  
40% monomer solutions of acrylamide and bisacrylamide, National Diagnostics' AccuGel solutions allow quick and easy preparation of native gels of the percent monomer you choose.

For Information or Ordering, Contact Us by Phone, Mail, E-Mail or on the Web at [www.nationaldiagnostics.com](http://www.nationaldiagnostics.com).

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