

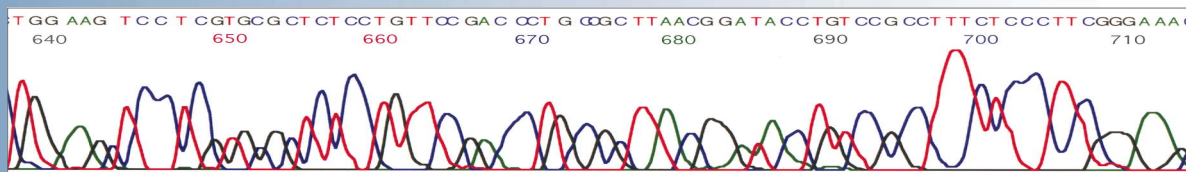
# AutoMatrix™ 4.5

Ready-to-Use Sequencing Gel Solution for the ABI 377



In a convenient ready to use format, AutoMatrix 4.5 is the best performing gel matrix available for the ABI 377.

- Maximum Separation and Read Length
- High Calling Accuracy
- Quality Controlled for Purity, Consistency, and Performance
- Easy to Use: Add TBE and Initiators Then Cast Your Gel



This sequence was provided by Rifat Hamoudi of the Institute of Cancer Research in Sutton, England, using an ABI 377 equipped with 36 cm WTR plates running at 2X speed for 7 hours. The gel matrix was AutoMatrix 4.5.

Convenient and economical, AutoMatrix 4.5 gives the best all around performance of any gel matrix for the ABI-377. Simply combine nine parts AutoMatrix 4.5 with one part 10X TBE to form a casting solution with 4.5%, 29:1 acrylamide:bis-acrylamide and 6M urea. According to

Applied Biosystems, this formulation matches the specialty matrices in long read sequencing and markedly outperforms them all in gene scanning and high throughput applications. See Applied Biosystems on the web for more information: <http://www.appliedbiosystems.com>.

As the originators of the first acrylamide gel solutions available in the marketplace, National Diagnostics has perfected the art of producing consistently pure and stable acrylamide solutions for all electrophoresis applications. Recognizing

the very high specifications of modern sequencing equipment, our proprietary production and quality control systems ensure that AutoMatrix 4.5 gives consistent results from one electrophoretic run to the next.

AutoMatrix 4.5 is made stable by the incorporation of a gaseous inhibitor that prevents the self-polymerization to which solid acrylamide is susceptible. It also inhibits the accumulation of oxidation products such as acrylic acid.

All of this results in crystal clear gels of easily reproducible molecular composition. Identical pore sizes guarantee consistent, reliable electrophoretic runs and R<sub>f</sub> values.

The Optimal  
Formulation  
for Automatic  
Sequencing

Ultra Pure

Reliable

Easy to Mix  
Ready to Use

Mix Automatrix  
with 10X TBE  
at 9:1



Add APS &  
TEMED



Cast  
Your Gel

# AutoMatrix™ 4.5



## Procedures for Using AutoMatrix 4.5 with the ABI 377

### Prepare Plates

- Plates must be scrupulously clean to avoid interference from background fluorescence.
- A) Clean in a dishwasher at  $\geq 90^{\circ}\text{C}$ . Use a minimal amount of nonfluorescent laboratory detergent.
- B) Rinse with hot deionized water ( $\geq 90^{\circ}\text{C}$ ).
- C) Air dry.
- D) Assemble gel cassette for casting.

### Prepare AutoMatrix

- A) To make 100 ml gel casting solution, add 10 ml 10X TBE to 90 ml AutoMatrix 4.5. (Use the same 10X TBE for both the gel and tank buffers to ensure 100% buffer compatibility). This solution is stable at room temperature for 2-3 days.
- B) For optimum reproducibility, de-gas solution prior to initiation by stirring under vacuum for 5 minutes.
- C) Initiate and cast: To 100 ml of gel solution, add 500 microliters 10% APS and 60 microliters TEMED. Swirl to mix and cast gel as specified in your sequencer user's manual. Allow AutoMatrix 4.5 gels to polymerize for at least 2 hours. Use gel within 24 hours of casting.

### Perform Plate Check

- A) Clean read region thoroughly with damp lab wipes. Do not allow water to run between plates and cassette, as instrument damage may subsequently occur.
- B) Mount cassette.
- C) Run plate check from run window. (Refer to dye set instructions for appropriate plate check module).
- D) Clean plates (if necessary).
- E) Install and fill buffer chambers with 1X TBE, diluted from the same 10X TBE used to make the AutoMatrix 4.5 gel.

### Instrument Settings

- A) Sample Sheet:
- Select the appropriate Instrument File. (The creation of a new Instrument File with the first use of AutoMatrix 4.5 may be necessary).
  - For AutoMatrix 4.5, select a 4% acrylamide DyeSet/Primer file.
- B) Run Sheet:
- Select the Run Module using the guidelines given by the tables within this flier.
  - Adjust data collection time if necessary.

### Beginning the Run

- A) Pre-run: Pre-run under appropriate module until optimum running temperature ( $50 - 51^{\circ}\text{C}$ ) is reached. Do not pre-run longer than necessary.
- B) Loading and Running Samples: AutoMatrix 4.5 gels require no alteration of standard loading and running procedures. Follow protocols recommended in the user's manual.

### Run Specifications

Ultra-Long Sequencing			
Plate Size WTR	Run Speed	Read Length	Run Specification
36 cm	2X (1200 scans/hr)	650 - 800 bp	Use standard 36 cm 2X speed run modules. Increase time to 9 hours.
36 cm	4X (2400 scans/hr)	550 - 700 bp	Use standard 36 cm 4X speed run modules. Increase time to 4 hours.
48 cm	2X (1200 scans/hr)	750 - 900 bp	Use standard 48 cm run modules. Increase time to 11 hours.

Fast Sequencing			
Plate Size WTR	Run Speed	Read Length	Run Specification
36 cm	2X (1200 scans/hr)	500 - 600 bp	Use standard 36 cm 2X speed run modules with a run time of 5.5 hours.
36 cm	4X (2400 scans/hr)	400 - 500 bp	Use standard 36 cm 4X speed run modules with a run time of 2.25 hours.
48 cm	2X (1200 scans/hr)	650 - 750 bp	Use standard 48 cm run modules with a run time of 7.8 hours.

Gene Scanning		
Resolution	Plate Size WTR	Run Time
2 bp	12 cm	45 min
1 bp	36 cm	2 hr

#### STORAGE

Keep AutoMatrix 4.5 frozen until ready to use. Product may arrive defrosted but should be refrozen to maintain quality for long-term storage (up to one year). Thawing and refreezing will not damage this product. Allow to thaw completely and return to room temperature before pouring solution. For best results, use thawed material within 4 weeks, storing at room temperature in a cool, dark place.

#### AUTOMATRIX 4.5

EC-854 450 ml  
1 Liter (1-3)  
1 Liter (4+)

#### TBE BUFFER (10X)

EC-860 4 Liter (1-3)  
4 Liter (4+)

#### TEMED

EC-503 25 ml

#### AMMONIUM PERSULFATE

EC-504 25 g  
100 g