

## Latitude® Midigel Chamber

Providing the best resolution performance from Latitude® Precast Agarose Midigels

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### Introduction

The Latitude® Midigel Chamber provides the best running conditions for optimal performance of Latitude® Precast Midigels from Lonza. The chamber is designed with a red/orange background to make loading easy and a compact buffer compartment to minimize buffer usage.

### User Information

This instruction manual will explain how to use this product safely and effectively. Please read and carefully follow the instruction manual in its entirety.

Failure to adhere to the instructions could result in personal and/or laboratory hazards, and may invalidate any warranty. Always turn off the DC power source prior to disconnecting power cords from the product.

Disconnect power cords from the power source first, and then from the product. For maximum safety, always operate this system in an isolated, low traffic area, not accessible to unauthorized personnel. Never operate damaged or leaking equipment.

### Specifications

#### Construction

Buffer Chamber	Acrylic
Safety Cover	Acrylic
Electrodes	Platinum wire .012" diameter
Power cords	FR Urethane rated 7500VDC, 200mA, 65°C

<b>Chamber size</b>	11.8 cm x 24 cm x 7 cm
without cover	(W x L x H)
Buffer volume	350 ml - 400 ml
Platform dimensions	10.5 cm x 15.5 cm
Distance between electrodes	23 cm

### Safety

Power to the Latitude® Midigel Chamber is to be supplied by an external DC voltage power supply that must be ground isolated, so that the DC voltage output floats with respect to ground. For any power supply used, the **maximum** specified operating parameters for this electrophoresis unit are:

- 250 VDC voltage
- 15 watts power
- 60 mA current
- 55°C temperature

Current to the unit, provided from the external power supply, must enter the unit through the lid assembly, providing a safety interlock to the user. Current to the unit is broken when the lid is removed. Do not attempt to use the unit without the safety lid, and always turn the power supply off before removing the lid, or when working with the unit in any way. Always follow safety precautions specified by the power supply manufacturer.

### Description of Parts

Please verify that your unit comes complete with the following components:

- Horizontal electrophoresis chamber
- Safety cover with attached DC power leads

**NOTE:** This electrophoresis unit is designed for use with Latitude® Precast Gels. Casting accessories are not available.

### Running Latitude® Precast Midigels

1. Place the Latitude® Midigel into the gel chamber, ensuring that the gel is oriented so that the DNA is loaded nearest the cathode (black connection on safety cover) to run towards the anode (red connection on safety cover). Add enough buffer to fill both reservoirs and to overflow to a depth of 3 mm-5 mm over the surface of the gel. Flush out any air bubbles in the wells.

2. Load DNA samples according to the Latitude® Midigel electrophoresis protocol.

**NOTE:** for best results, always follow the protocol supplied with Latitude® Precast Gels.

**NOTE:** For gels prestained with ethidium bromide, it may be necessary to add 0.5 µg/ml ethidium bromide to the running buffer to achieve optimal detection sensitivity.

3. Align safety cover over the unit and carefully attach, so as not to disturb the samples.
4. Connect the leads to the power supply. **See “Running Conditions” section for recommended power conditions.** Begin separation by electrophoresis.

## Running Conditions

### Recommended Power

The distance used to determine voltage gradients is the distance between the electrodes, not the gel length. If the voltage is too high, band streaking, especially for DNA  $\geq 12$  kb-15 kb, may result. When the voltage is too low, the mobility of small ( $\leq 1$  kb) DNA is reduced and band broadening will occur due to dispersion and diffusion. Electrophoresis Latitude<sup>®</sup> Midigels at 5-10 V/cm interelectrode distance (23 cm). Be sure the polarity is correct, ie., that the DNA is loaded near the cathode (black terminal) to run toward the anode (red terminal). Nucleic acid migration is monitored by the progress of the marker dyes. Run until the bromophenol blue is about 1 cm from the bottom of the gel or from the 2<sup>nd</sup> tier of wells.

### Removing Latitude<sup>®</sup> Precast Midigels

1. Turn the power supply off and disconnect the leads from the power supply.
2. Remove the safety cover from the unit by placing thumbs on the white posts next to red and black connectors, then pushing down on the white posts while pulling up with fingers under the lid. **DO NOT pull on the power cords.**
3. Gently lift the Latitude<sup>®</sup> Midigel from the unit. Always wear gloves, eye protection and protective clothing if buffer or gel contain ethidium bromide. Ethidium bromide is a powerful mutagen and gloves, eye protection and protective clothing should be worn when handling the gel or buffer solutions.
4. View separated fragments following standard procedures, using proper protection for eyes and skin.

## Maintenance of Equipment

### Care and Handling

- The plastic components of the Latitude<sup>®</sup> Midigel Chamber are fabricated from acrylic and polycarbonate.
- Electrodes and connectors are made from pure platinum, stainless steel, and chrome plated brass. As with any laboratory instrument, adequate care insures consistent and reliable performance.

- After each use, rinse buffer chamber with de-ionized water. Wipe dry with soft cloth or paper towel, and allow to air dry. Whenever necessary, all components may be washed gently with water and a non-abrasive detergent, and rinsed and dried as above.
- Never use abrasive cleaners, glass cleaning sprays or scouring pads to clean the components, as these will damage the unit and components.

### Additional precautions

- Do not autoclave or dry-heat sterilize the apparatus or components.
- Do not expose the apparatus or components to phenol, acetone, benzene, halogenated hydrocarbon solvents or undiluted alcohols.
- Avoid prolonged exposure of the apparatus or components to UV light.
- Do NOT treat with diethylpyrocarbonate (DEPC) treated water for extended periods at 37°C. A brief rinse with DEPC-water is sufficient after a thorough wash, followed by a quick rinse in 70% ethanol.

### Maintenance

The following inspection and maintenance procedures will help maintain the safety and reliable performance of the Latitude<sup>®</sup> Midigel Chambers. Replacement parts can be ordered by calling Lonza Technical Service at 800-521-0390.

- Banana plugs and power cords should be inspected regularly. If the banana plugs become loose or do not feel friction tight, replace the plugs or power cords.
- Should power cord assemblies (connectors, wire, or shrouds) show any signs of wear or damage (e.g. cracks, nicks, abrasions, or melted insulation), replace them immediately.
- The platinum wire is secured to the banana jack by compression between a stainless washer and the jack nut. The nut/washer interface should be tight and free of corrosion.

## Ordering Information

Catalog No.	Description
56990	Latitude <sup>®</sup> Midigel Chamber

## Related Products for DNA analysis

Latitude<sup>®</sup> Precast Midigels  
Reliant<sup>®</sup> Precast Agarose Minigels  
AccuGENE<sup>®</sup> TAE and TBE Buffers  
AccuGENE MOPS Buffer  
DNA Ladders  
DNA Markers

**For more information contact Technical Service at  
(800) 521-0390 or visit our website at  
[www.Lonza.com](http://www.Lonza.com)**

## Warranty and Liability

This product was manufactured for Lonza and produced utilizing the highest practical standards of materials, workmanship and design. Lonza warrants that the product has been tested by the manufacturer and will meet or exceed published specifications. This warranty is valid only if the product has been operated and maintained according to the instructions provided.

Lonza warrants this product to be free from defects in materials and workmanship under normal service for one year from date of shipment. If the product proves defective during this period, Lonza will repair or replace it at our option, free of charge. This warranty does not cover: damage in transit, damage caused by carelessness, misuse or neglect, normal wear through frequent use, damage caused by solvent corrosion, damage caused by improper handling or user alteration, nor unsatisfactory performance as a result of conditions beyond our control. Lonza shall in no event be liable for incidental nor consequential damages, including without limitation, lost profits, loss of income, loss of business opportunities, loss of use and other related damages, however caused, nor any damage arising from the incorrect use of the product.

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