MB46501_IFU_EN_V2302

# NZY Bis-Tris Precast Gel

## (4-12%, 12 wells)

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|---|---|
| **Catalogue number** | MB46501 |
| **Presentation** | 10 gels |
| **Gel percentage** | 4-12% |
| **Well format** | 12 wells |
| **Capacity** | 25 µL/well |
| **Cassete size** | Mini gel (10 x 8.3 cm) |
| **Gel dimensions** | 8.1 x 7.4 x 0.1 cm (width x length x thickness) |
| **Buffer system** | MOPS and MES |

## Description

NZY Bis-Tris Precast Gel is a high-performance and user-friendly precast polyacrylamide gel designed for electrophoresis in the Bis-Tris buffer system (MOPS or MES). With its optimized formula, the NZY Bis-Tris Precast Gel exhibits enhanced resolution, accurate results, and an extended shelf-life compared to conventional Laemmli Tris-HCl gels.

The NZY Bis-Tris Precast Gels are available in a 4 to 12% gradient concentration, offering excellent separation capabilities. Precast gels come in a convenient 12-well format, making them ideal for various electrophoresis applications. These gels are offered in a Mini cassette size (10 x 8.3 cm) and are compatible with most popular protein electrophoresis systems such as Bio-Rad®.

Choose NZY Bis-Tris Precast Gels for superior performance, ease of use, and reliable results in your electrophoresis experiments.

## Key Features

- Enhanced band sharpness
- Great resolution of small proteins
- Compatible with most popular protein electrophoresis systems
- Easy sample loading: numbered and framed wells
- Labelled warning sign and green tape as reminder
- Stable for shipping at room temperature

## Standard Procedures

### Gel Running recommendations

1. Before starting, remove both comb and tape.
2. Use fresh 1X running buffer for the inner cathode chamber.
3. Do not use Tris-Glycine running buffer for NZY Bis-Tris Precast Gels.
4. Prior to loading samples, rinse the wells.

### Sample preparation for SDS-PAGE

1. Mix protein sample with 2X sample buffer.
2. Heat diluted samples at 95°C for 5 min or at 70°C for 10 min.
3. Cool the diluted samples to 4°C and spin down the water condensed on the tube surface. In case there is a high viscosity portion at the bottom of the tube, transfer the supernatant to a new tube.

**Prepare Precast gel for sample loading**

1. Open the blister tray of NZY Bis-Tris Precast Gel.
2. Briefly rinse the gel cassette with distilled H2O.
3. Remove tape and comb; avoid squeezing the gel.
4. Adapt NZY Bis-Tris Precast Gel to the electrophoresis system. NZYtech recommends using BioRad Mini-PROTEAN® Core Electrophoresis System.
5. Use a pipette to gently wash the wells with running buffer to remove residual storage buffer.
6. Fill the wells with running buffer prior to sample loading.
7. Load samples and protein marker into numbered wells.
8. Fill both inner and outer chambers with running buffer to the highest level. Ensure gel wells are completely covered.
9. Configure the electrophoresis system based on the table below. If needed, optimize both voltage and running time.

**Gel running power configuration**

| **VOLTAGE** *1 | 130 V | 180 V | 230 V *2 |
|---|---|---|---|
| **RUNNING TIME** *3 | 45-60 min | 25-40 min | 15-30 min |
| **EXPECTED CURRENT** | | | |
| Initial (per gel) | 60-70 mA | 100-110 mA | 130-140 mA |
| Final (per gel) | 20-25 mA | 40-50 mA | 60-70 mA |
| **EXPECTED TEMPERATURE** | 25-30°C | 25-35°C | 35-45°C |

**1 It is recommended to set voltage higher than 100 V.*

**2 For higher voltage conditions, use fresh running buffer for inner and outer chambers.*

**3 Running time varies depending on running buffer, temperature, and power supply.*

**Remove NZY Bis-Tris Precast Gel from Cassette**

1. Open cassette immediately after electrophoresis. Avoid gel drying.
2. Insert the cassette opener into corners of cassette.
3. Gradually lever the opener to detach the two plates.
4. Gently pull two plates apart from the top of cassette.
5. Carefully detach the gel either from the bottom or the top side of the cassette. Avoid diagonally peeling the gel from the corner. Use water to help gel detachment if needed.
6. Gently remove the gel for further staining or Western blotting.

**Gel Staining**

Proteins separated using NZY Bis-Tris Precast Gel can be further stained with most popular staining reagents, such as BlueSafe (MB15201) or Coomassie dye.

**Transferring Protein from NZY Bis-Tris Precast Gel to Blotting Membrane**

1. After protein separation using NZY Bis-Tris Precast Gel, gently detach gel from cassette and then equilibrate it in transfer buffer.
2. Pre-soak blotting membrane and filter papers in transfer buffer.

***Note:*** *Activate PVDF membrane in methanol before soaking in transfer buffer. Prepare 6 filter papers for one gel/membrane sandwich.*

3. Assemble transfer sandwich by orientating cathode, sponge, filter papers, gel, membrane, filter papers, sponge, and anode. The protein goes to the direction of cathode to anode.
4. Carefully move roller over the gel/membrane to remove air bubbles and excess buffer until complete contact is established.
5. Insert transfer cassette into transfer module. Notice that black side of cassette should be next to black side of module.
6. Fill transfer tank with pre-cooled transfer buffer to the highest water level.
7. Set constant voltage at 100 V. Transfer for 90 minutes at low temperature condition. Pre-stained protein marker should be visible on the membrane after transfer is completed. Transfer of proteins to the membrane can be checked using Ponceau S staining before blocking step.

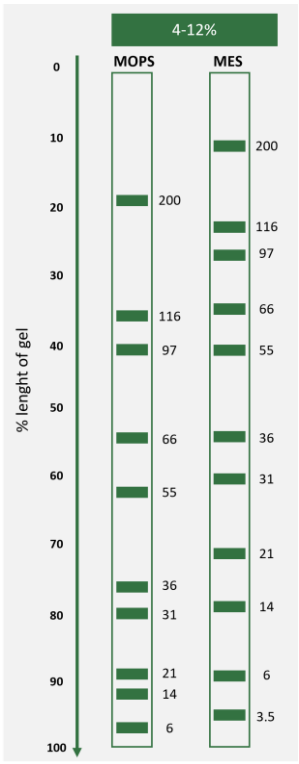
## Shipping Conditions

This product must be shipped at room temperature.

## Storage Conditions

Store NZY Bis-Tris Precast Gels at 2-8°C. Please do not freeze NZY Bis-Tris Precast Gels. During storage, it is essential to keep the NZY Bis-Tris Precast Gels flat to maintain their integrity and optimal performance. Keep the gels away from the cold air vent. Prior to electrophoresis, ensure to remove the tape and comb from the gels.

## Migration pattern




## Supplemental information

**Adapting NZY Bis-Tris Precast Gel to BioRad Mini-PROTEAN® Core**

1. After removing comb and tape, place the NZY Bis-Tris Precast Gel with notched plate facing toward inner chamber.
2. Align the notched plate to ensure the edge sits just below the notch at the top of green gasket.
3. Gently press gel cassette toward green gasket and then lock gel cassette with two green arms. Avoid squeezing the cassette and gel.
4. Fill inner chamber with running buffer to check tightness of seal. If necessary, reassemble and check the seal again.
5. Fill inner chamber with running buffer to ensure gel wells are completely covered.
6. Fill outer chamber with running buffer to the highest level.

***Note:*** *for other electrophoresis system, please follow the manufacturer's instructions*

**Buffer recipes**

**2X sample buffer with reducing agent**

62.5 mM Tris-HCl pH 6.8, 2% SDS, 25% (v/v) glycerol, 0.01% bromophenol blue, 5% β-mercaptoethanol or 100 mM DTT (added fresh)

**10X MOPS running buffer**

60.6 g Tris base, 104.6 g MOPS, 10.0 g SDS, 3.0 g EDTA.

Bring up the volume to 1 L with dd$H_2O$.

**10X MES running buffer**

60.6 g Tris base, 97.6 g MES, 10.0 g SDS, 3.0 g EDTA.

Bring up the volume to 1 L with dd$H_2O$.

**1X running buffer**

Dilute 100 ml 10X running buffer with 900 ml dd$H_2O$.

**10X transfer buffer**

30.0 g Tris base, 144.0 g Glycine. Bring up the volume to 1 L with dd$H_2O$.

**1X transfer buffer**

Dilute 100 ml 10X transfer buffer with 200 ml methanol and 700 ml dd$H_2O$.

***Note:*** *Cool 1X transfer buffer to 4°C before using. Add SDS to 0.1% to promote transfer of high molecular weight proteins.*