ClearPAGE™ Precast Gels & Accessories

# TEO ClearPAGE™ Precast Gel Running Instructions for SDS PAGE and DNA/Native Gels

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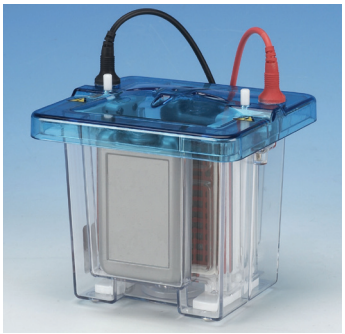


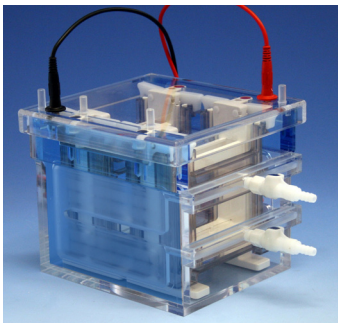

C.B.S.★SCIENTIFIC
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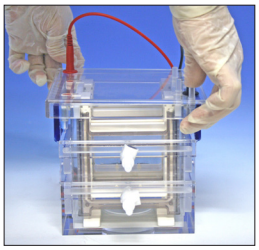
# ClearPAGE ™ Gel Running Instructions

**FOR USE WITH: C.B.S. Scientific's Combo 2-place Dual Cool System (DCX-700) and Combo 4-place Quadra Systems (QNC-700 & QNX-700)**

## GENERAL INSTRUCTIONS

**1) Use ONLY ClearPAGE buffers with ClearPAGE TEO gels. Ordering information for these reagents is on pages 12-14. Alternatively, you can make your own by following the buffer formulations on pages 9-10.**
2) The running and loading buffers must be consistent with the type of gel being used (SDS PAGE or DNA/Native)
3) Do not substitute or mix reagents with those from other sources.
4) Use only ultrapure water for washing and dilution purposes.
5) These products should only be used by qualified personnel who have had laboratory safety instruction.
6) The complete instructions should be read and understood before attempting to use the product.
7) Products should be used before the "Best by" date on the product label.
8) **Wear gloves at all times when handling gels, buffers, etc.**
9) Before running first gel in the DCX-700, QNC-700 or QNX-700 please read the Dual Cool/Quadra Instruction manual for important safety and general use instructions. To open DualCool/Quadra, push thumbs down on white/clear posts while pulling lid up with fingers as shown on right. DO NOT PULL UP ON LEADS!



## RUNNING BUFFER PREPARATION

| Type of Gel | Running Buffer Cat. #'s | Dilution factor |
|---|---|---|
| ClearPAGE Neutral pH -TEO | SDS-Non-Reducing: (cat. # FB50053 or FB50500)<br>SDS-Reducing: (cat. # FB60053 or FB60500)<br>Turbo SDS: (cat.# CB13500) | 20X<br>20X<br>20X |
| ClearPAGE "Classics" TGS | Transfer and ClearPAGE "Classics" (FB82500) | 20X |
| DNA/Native | DNA/Native: (cat. # GB61053 or GB61500) | 20X |

ClearPAGE™ SDS or ClearPAGE DNA/NATIVE Running Buffers ***MUST*** be used to run these gels. To make 1 liter of 1x running buffer (for example: dilute 50ml 20x Running Buffer with 950ml ultrapure water or dilute 100mls of 10X buffer with 900mls of ultrapure water) for a run. For the ClearPAGE Running Buffer bottle included in the Sampler Kits, dilute by adding its contents to 950ml ultrapure water. Remember, to save time and money you can use reconstituted ClearPAGE running buffer for the bottom reservoir by following instructions below:

**RECYCLING BUFFER INSTRUCTIONS:** The buffer may be reused on the anode side, but fresh buffer is ***ALWAYS*** required in the cathode chamber. When reusing buffer make sure used buffer from upper core gets recycled as well. This can be accomplished by removing the gel cassettes while the core is still in the unit and letting the buffer drain into the lower chamber. Pour this reconstituted buffer into a separate container for reuse in the **anode** chamber of your next gel run! This buffer can be used time and time again. For fresh upper core buffer dilute 10 ml of ClearPAGE™ Running Buffer (20x) to 200 ml with ultrapure water.

## SAMPLE PREPARATION

Sample Preparation - Prepare samples using ClearPAGE sample buffers for optimal resolution. Other buffers can be used but resolution will suffer. 1 part ClearPAGE 4x LDS sample buffer can be added to 5 parts existing sample to aid with loading and stacking into the gel.

1) For DNA/Native Gels, ClearPAGE 4x DNA/Native Sample Buffer (Cat # GB33002) is required for sample preparation.
2) For SDS Gels, ClearPAGE 4x LDS Sample Buffer (Cat # FB31002/FB31010) is required for sample preparation.
   a) Allow Sample Buffer to equilibrate to room temperature
   b) For **reducing** conditions
      i) Combine Sample and ultrapure water (if necessary) to achieve 65% of the final volume
      ii) Add 25% of the final volume of 4x LDS Sample Buffer
      iii) Add 10% of the final volume of reducing agent (e.g., Cat # FB32001 DTT Reducing Agent 10x).
      iv) Heat the samples for 10 minutes at 70°C (preferred) or 3 minutes at 100°C.
      v) Once reduced, run samples within 2 hours to prevent reoxidation.
   c) For **non-reducing** conditions
      i) Combine Sample and ultrapure water (if necessary) to achieve 75% of the final volume
      ii) Add 25% of the final volume of 4x LDS Sample Buffer (Cat # FB31002/FB31010)
      iii) Heat the samples for 10 minutes at 70°C (preferred) or 3 minutes at 100°C.

Below is an example on how to prepare 100 $\mu$l of 1 mg protein/ml running sample from a 5 mg protein/ml initial sample.

| Solution | Reduced | Not Reduced |
|---|---|---|
| Sample | 20µl | 20µl |
| Water | 45µl | 55µl |
| Sample Buffer | 25µl | 25µl |
| Reducing Agent | 10µl | None |

| Well Type | Max. Volume | 40% Max. Vol. |
|---|---|---|
| 12-well | 35µl | 14µl |
| 17-well | 17µl | 6.8µl |
| 1 Prep well | 400µl | 280µl |
| 2D-well | 300µl | 210µl |

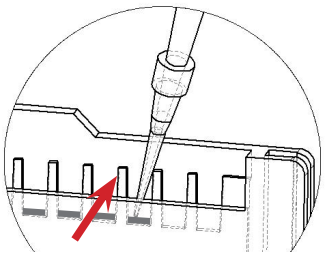
## GEL PREPARATION

1) The comb has been removed from these gels prior to shipping and there is also no tape to remove. Just before use remove the gel cassette from it's plastic storage bag and shake gel off upside down.
2) Rinse entire gel cassettes using ultrapure water with a wash or squeeze bottle.
3) Rinse wells two times using ultrapure water with a wash bottle, shake to remove water from wells after each wash.

## LOADING SAMPLES ONTO THE GEL:

1) To load samples slide precast gel cassette into core assembly so that the notched plate faces towards the core upper reservoir.
2) After rinsing wells, fill with ultrapure water. Density differential between water and sample buffer aids protein stacking into the gel. If filling with running buffer, leaving for an extended period will adversely effect resolution.
3) When running one gel, use white plastic adaptor plate to seal the other side. Close core doors and press down on white latches. Fill upper core reservoir

with ≈ 200mls of buffer. Acrylamide gel well fingers are red (SDS Protein) or green (DNA/Native) and extend above cassette for ease in loading and the wells are numbered. Using thin pipette tips underlay the samples near the bottom of the well as shown at right. Red arrow indicates how acrylamide gel well fingers extend above cassette for ease in loading. Maximum sample capacity is 35µl for 12-well gels and 17µl for 17-well gels.



**Note:** Gel samples may also be loaded on the bench-top and then transferred to the DCX-700. With gels clamped into DCX/Quadra core, fill the wells with running buffer and underlay sample with thin pipette tips prior to transferring to your DCX-700.

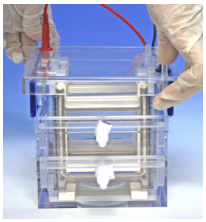
## RUNNING THE GEL

1) After filling the upper core reservoir with fresh running buffer and loading the samples, add a minimum of 400ml running buffer to the DCX-700 lower reservoir. See chart below if using freezer blocks. To the Quadra Systems add a minimum of 550mls to the lower reservoir.

| # of freezer blocks used | DCX-700 lower buffer volume |
|---|---|
| 0 | 810 mls (max) |
| 1 | 685 mls (max) |
| 2 | 560 mls (max) |

**2)** The red or green dye in the loading area of the gel will run ahead of the bromphenol blue. Run the gel(s) until the blue dye front nears the bottom of the cassette as follows:
**For DNA/Native Gels**, run the gel(s) at 180VDC constant until the blue dye nears the bottom of the cassette (40-80 minutes depending on gel percentage).
**For SDS Gels,** run the gel(s) until the blue dye front nears the bottom of the cassette as follows:

| Run Voltage | Starting Current | Ending Current | Approx. Run Time |
|---|---|---|---|
| 180VDC | 90mA/gel | 40mA/gel | 30-75 minutes |



## AFTER THE RUN

1) Turn off the power supply 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 the red and black connectors, then pushing down while pulling up with fingers under lid as shown in figure at right. **Do not remove safety cover by pulling up on leads wires!**
3) Leave core in place and pull up on core latches and open gel door. Remove gel cassette(s). Allow upper buffer to mix with lower buffer and **save for reuse as anodal side of next run.**
4) ***Completely immerse core and all DCX-700 or Quadra components with deionized or UP water and soak for at least a few minutes.***

## OPENING THE CASSETTE & PREPARING GEL FOR STAINING

1) Using wedge plate separator, dime, comb or gel knife, gently lever apart all four corners of the cassette, first on one side, then the other. Not much force is required to open these cassettes.

# GEL STAINING

These composite polymer gels are very strong and change shape minimally when placed in different solutions. However, the composite polymer tends to hold SDS strongly compared to other 1mm thick mini-gels, so a pre-wash or extra staining time is necessary to remove the SDS which competes with the proteins for the stain in more sensitive staining methods. **This step is NOT necessary when using the ClearPAGE™ Instant Blue Stain.**

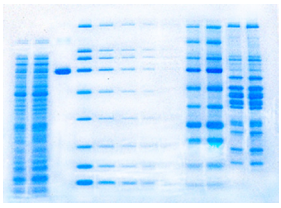
**1) Staining with ClearPAGE™ Instant Blue Stain**

a) BEFORE USE: Mix the Instant Blue solution immediately before use by gently inverting the bottle a few times (do not shake the bottle to mix the solution). One may rinse the gel surfaces briefly with ultrapure water, but do NOT wash the gel, as standing in water before staining will reduce band sharpness. Fixing is also NOT recommended.

b) GEL STAINING: Place each gel in a separate small container (lids for yellow pipette tips work well). Use the following amount of stain for different size gels: Use 25ml per gel for gels approximately 8 x 8 cm (from 10 x 10 cm cassettes, such as ClearPAGE or Invitrogen Gels). Use 20 ml per gel for gels approximately 6 x 8cm (from 8 x 10cm cassettes, such as BIO-RAD, Precise or Gradipore gels) Larger Volumes are required for larger gels and for larger containers.

c) Shake gently until desired band intensity is achieved. Generally, 50ng or less can be seen in 10 minutes. Band intensity reaches a maximum in 30 to 60 minutes depending on gel thickness.

d) Destaining does NOT improve sensitivity, but the gels may be washed in ultrapure water for 15 minutes to remove the free stain from the gel and get clear backgrounds. The gel may be stored in ultrapure water.



*Instant Blue stained ClearPAGE 12% SDS 12-well gel (30 minutes), followed by brief water wash (5 minutes).*

| Lane | Samples loaded |
|---|---|
| 1-2 | E. Coli Extract |
| 3 | Bovine Serum Albumin (2μg) |
| 4-8 | Broad Range MW Marker 500/200/100/50/25ng per band |
| 9-10 | ClearPAGE Two-Color SDS™ Marker 2μl / 4μl |
| 11-12 | Chicken Muscle Extract |

**2) Staining with Coomassie™ Brilliant Blue R-250**

When using R-250 stain solutions (40% ethanol/10% acetic acid/0.1% Brilliant Blue R-250), follow standard protocols or use the following recommended by ClearPAGE. Use 20% ethanol/5% acetic acid as the R250 destain solution, half the usual destain concentration, combined with an absorbent paper such as paper towel or lab wipes, which will prevent the proteins from destaining.

| STEP | Heated Protocol | Ambient Temperature Protocol |
|---|---|---|
| Stain | Rock with 50ml warm (50-65ºC) stain 15 min. | Rock with 50ml R250 stain 1 to 2 hours |
| Destain | Rock with 50ml warm R250 destain with paper towels or lab wipes for 1 to 24 hrs | Rock with 50ml R250 destain 3 to 24 hrs. |

**3) Staining with "Safe" Stains (Coomassie G250-based stains)**

For use with Simply Blue™ and Gel Code™ Blue or Bio-Safe™ stains:

| STEP | Heated Protocol | Ambient Temperature Protocol |
|---|---|---|
| Fix and Wash | Heat 20% Ethanol at 50º-70º. Rock 5 minutes, 50ml/gel **You must do this step.** | Rock 30 minutes with 50ml 20% Ethanol per gel |
| Water Wash | Heat water to circa 80ºC. Rock 2 minutes, 100ml/gel. **Repeat once. Do not use temperatures higher than 80ºC.** | Rock 5 minutes with 100ml water per gel. **Repeat twice.** |
| Stain | Heat stain to 70º-80ºC. Rock 10 minutes, 25ml/gel | Use 25ml stain per gel. Rock 1 hour. |
| Destain | Heat 10% Ethanol (50ml/gel) at 50º-70ºC. Rock 15 minutes - 16 hours with adsorbent paper | Use 100ml 10% ethanol per gel. Rock 2 to 16 hours. |
| Storage | Add 20ml 20%NaCl in water (w/v) per 100ml 0f 10% ethanol to preserve results for up to 2 days before drying. | |

## GENERAL NOTES ON USING COOMASSIE STAINS

One may use either the heated or ambient protocol at any step, but the first step works best when heated as it fixes the proteins better. For the sharpest bands and fastest results, C.B.S. Scientific recommends using the heated protocols. Notes on heating solutions in a microwave:

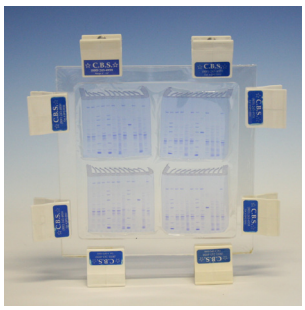
1) Do not heat gel in microwave for temperatures above 70ºC, as solution may get too hot and dissolve the agarose.
2) For 10% or 20% Ethanol solutions, heat 50ml for 30 seconds on high (600W). The water portion may be heated separately, and alcohol added after heating.
3) For water, heat 100ml for 1 minute on high (600W) and then add to the gel.
4) Microwave ovens may vary. Check temperature results for your oven and adjust times.

**d) Staining with Silver-Stain Solutions**

For ammoniacal silver staining protocols (e.g., Pierce Silver SNAP™ or Invitrogen SilverXpress™ Silver Stain kits), fix proteins for 10 minutes with 200ml per gel of 50% methanol/10% acetic acid/20mM sodium bisulfite. For the bisulfite, use Cat. No. LB30001 Antioxidant: 1ml per 200ml fixative. For the SilverXpress kit, use the Tris Glycine protocol using the above fixative, then follow the remaining protocol. For the Silver SNAP kit, use the Tris Glycine protocol using the above fixative, then follow then follow the remaining protocol.

# GEL DRYING

Gels may be dried without cracking between cellophane after equilibrating with ClearPAGE™ Drying Solution (HB04510) or with 5% glycerol in water (25ml per gel, rock for 30 minutes). No alcohol is required.



HB90001

**A) Instructions for Gel Drying stained gels using the HB90001 air drying frame:**

1. After de-staining, rinse the stained gel once in distilled water (100ml/gel) for 5 minutes.
2. Equilibrate the rinsed gel in ClearPAGE drying solution (HB04510) or water containing 5% glycerol (50ml/gel) for 10 minutes at room temperature.
3. Soak two pieces of cellophane (HB02025) in distilled water.
4. Place the solid frame on 1 or 2 pipette tip boxes.
5. Place one piece of wet cellophane evenly on top, followed by the gel (s), a second piece of wet cellophane, and finally the open frame. (Alternatively, use two open frames for faster gel drying).
6. Carefully smooth away any air bubbles between the cellophane sheets.
7. Clip the frames together, and place on lab bench. Allow to air dry horizontally overnight.
8. When the gel is completely dried, remove the frame and cut away excess cellophane for storage.

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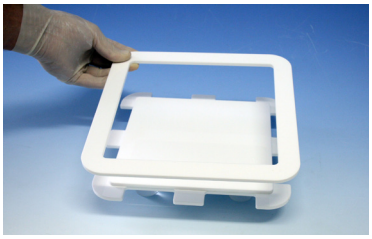
**B) Instructions for Gel Drying stained gels using the HB90025 air drying frame:**

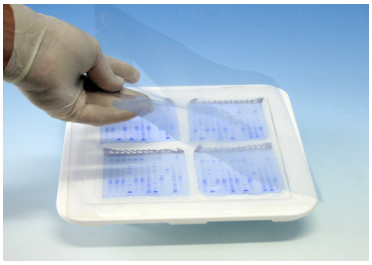
1. After de-staining, rinse the stained gel once in distilled water (100ml/gel) for 5 minutes.
2. Equilibrate the rinsed gel in ClearPAGE drying solution (HB04510) or water containing 5% glycerol (25ml/.gel) for 10 minutes at room temperature, rocking.
3. Soak two pieces of cellophane (HB02520) in distilled water.



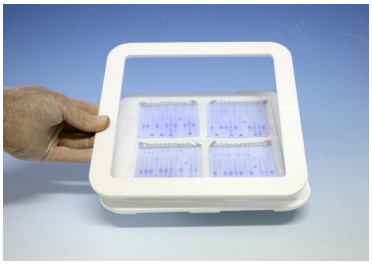
4. Place frame #1 onto clamping base, so that frame is flush with clamping platform as shown at right.

5. Place one piece of wet cellophane sheet evenly onto platform.

6. Place up to 4 ClearPAGE™ gels onto cellophane making sure all gels are inside frame perimeter.

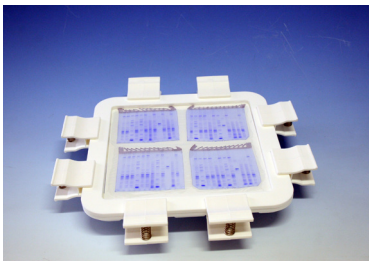


7. Place 2nd damp cellophane sheet on top of gels. Carefully smooth away any air bubbles between sheets.

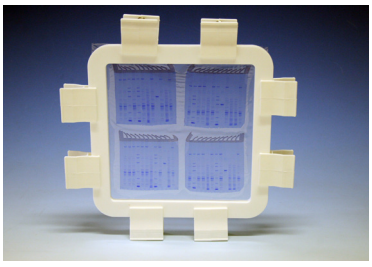


8. Place frame #2 on top of cellophane gel sandwich.

9. Taking advantage of the 8 cut-out areas of the base, clamp frame/ cellophane/gel sandwich ONLY.



10. Before lifting off clamping base make sure you apply all 8 clamps.



11. Lift off base (as shown) and then place in HORIZONTAL position (not shown) to dry overnight. When gel is completely dried, remove frame and cut away excess cellophane for storage.

# GEL BLOTTING

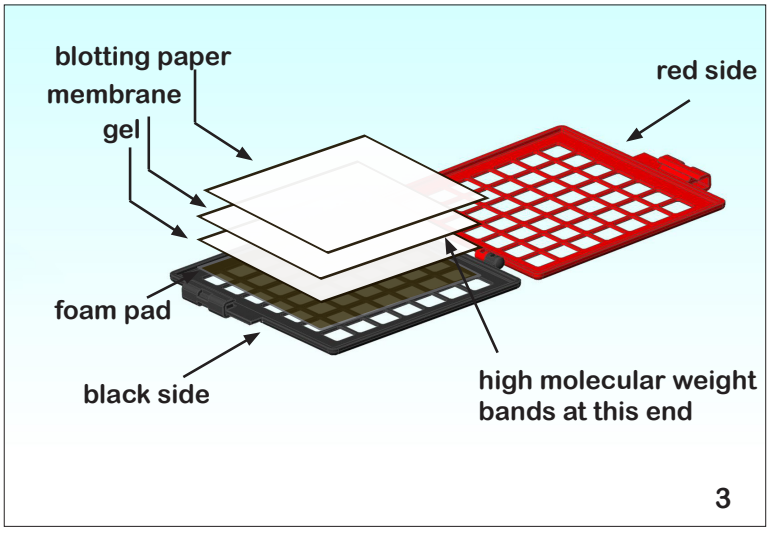
Follow general guidelines as indicated for respective blotting units. As a general recommendation, equilibrate gels (after running) with the diluted transfer buffer for 5 to 10 minutes prior transfer. Clear PAGE™ Transfer Buffer 10x concentrate contains 0.25 M Tris (base), 1.92M Glycine, 1% SDS.

For C.B.S. Scientific's EBU-204, EBX-700, DCX-700, EBU-4000 and EBU-6000 Blotter Buffers:

| **Component** | **EBX-700 EBU-204 Tank Blotters** | **DCX-700 Blotter** | **EBU-4000 and EBU-6000 Semi-Dry Blotters** |
|---|---|---|---|
| ClearPAGE™ Transfer Buffer 10X or 20X dilution (cat. FB82500) | 50ml (1:20 dilution) | 100ml (1:10 dilution) | 10ml (1:10 dilution) |
| Methanol | 200ml | 200ml | 20ml **(for PVDF membrane: reduce 50%)** |
| Ultrapure water | 770ml | 720ml | 72 ml **(PVDF: add water for less MeOH)** |

| **Typical Blotting conditions** | **EBX-700, EBU-204 Tank Blotters** | **DCX-700 or Quadra** | **EBU-4000 & EBU-6000 Semi-Dry Blotting** |
|---|---|---|---|
| Power Supply Setting | 50-60V constant | 200V constant | 25 Volts |
| Blot time | 2-4 hours with stirring. Exchange cooling blocks after 1.5 hours | 1.5 - 2.0 hours with stirring, cooling blocks | 30-60 minutes |
| Expected current | 250-300mA | 180mA / 1 gel<br>220mA / 2 gels<br>440mA/ 4 gels | Initial 200-300mA / Final 60-100mA |

Refer to figure below to assemble blotting stack. With cassette wide open assemble components on black side in the following order: buffer saturated sponge pad, gel equilabrated in transfer buffer, buffer saturated transfer membrane, then buffer saturated blotting paper. Smooth with gloved finger or roll with glass rod to be sure no bubbles exist between the gel and the transfer membrane.



# BUFFER FORMULATIONS

**As an alternative to the buffers ClearPAGE sells, these formulations may be used to prepare buffers yourself. Use high-quality, low-conductance ingredients. Do NOT use acid or base to adjust the pH!**

## Standard SDS Running Buffer, 20X for Reduced Samples (FB60500)

| Ingredient | MW | Molarity | Qty/Liter |
|---|---|---|---|
| Tricine (free acid) | 179.17 | 0.8M | 143.4 g |
| Tris (free base) | 121.14 | 1.2M | 145.2 g |
| SDS (2%) | 288.38 | - | 20.0 g |
| Sodium Meta-bisulfite | 104.06 | 50mM | 5.0 g |
| Ultrapure water (fill to) | - | - | 1000ml |

* pH should be between 8.4 and 8.5 at 25° C.
* For non-reduced samples (especially antibodies), omit the Sodium Meta-bisulfite

## Turbo SDS Running Buffer, 20X FB13500

| Ingredient | MW | Molarity | Qty/Liter |
|---|---|---|---|
| MPS (free acid) | 209.26 | 0.6M | 125.6 g |
| Tris (free base) | 121.14 | 1.2M | 145.2 g |
| SDS (2%) | 288.38 | - | 20.0 g |
| Sodium Meta-bisulfite | 104.06 | 50mM | 5.0 g |
| Ultrapure water (fill to) | - | - | 1000 ml |

* pH should be between 8.3 and 8.4 at 25° C.
* For non-reduced samples (especially antibodies), omit the Sodium Meta-bisulfite

## LDS Sample Buffer, 4x -FB31010

| Ingredient | MW | Molarity | Qty/Liter |
|---|---|---|---|
| Glycerol (40%) | - | - | 400 g |
| Ficoll-400 (4%) | - | - | 40 g |
| Triethanol amine, pH7.6 | 149.2 | 0.8M | 120.0 |
| 6 N HCL | 36.46 | - | 93.0 g |
| Lithium Dodecyl Sulfate (4%) | - | - | 40 g |
| EDTA Di-Sodium | 372.2 | 2mM | 7.44 g |
| Brilliant Blue G250 (0.025%) | - | - | 0.25g |
| Phenol Red | - | - | 0.25 g |
| Ultrapure water (fill to) | - | - | 1000 ml |

* pH should be between 7.7 and 7.8 at 25° C.

## Tris-Glycine-SDS Transfer Buffer, 10X (FB82500) and ClearPAGE "Classics" Run Buffer, 20X (FB82500)

| Ingredient | MW | Molarity | Qty/Liter |
|---|---|---|---|
| Tris (free base) | 121.14 | 0.25M | 30.3 g |
| SDS (2%) | 288.38 | - | 20.0 g |
| Glycine | 75.07 | 1.92M | 144.1 g |
| Ultrapure water (fill to) | - | - | 1000 ml |

* pH should be between 8.4 and 8.6 at 25° C.

## Standard DNA/Native Running Buffer, 20X (GB61500)

| Ingredient | MW | Molarity | Qty/Liter |
|---|---|---|---|
| Tricine (free acid) | 179.17 | 0.8M | 143.4 g |
| Tris (free base) | 121.14 | 1.2M | 145.2 g |
| Ultrapure water (fill to) | - | - | 1000ml |

* pH should be between 8.35 and 8.45 at 25° C.

## DNA/Native Sample Buffer, 4x (GB33002)

| Ingredient | MW | Molarity | Qty/Liter |
|---|---|---|---|
| Glycerol (40%) | - | - | 400 g |
| Ficoll-400 (4%) | - | - | 40 g |
| Triethanol amine, pH7.6 | 149.2 | 0.8M | 120.0 |
| 6 N HCL | 36.46 | - | 93.0 g |
| EDTA Di-Sodium | 372.2 | 2mM | 7.44 g |
| Brilliant Blue G250 (0.025%) | - | - | 0.25g |
| Phenol Red | - | - | 0.25 g |
| Ultrapure water (fill to) | - | - | 1000 ml |

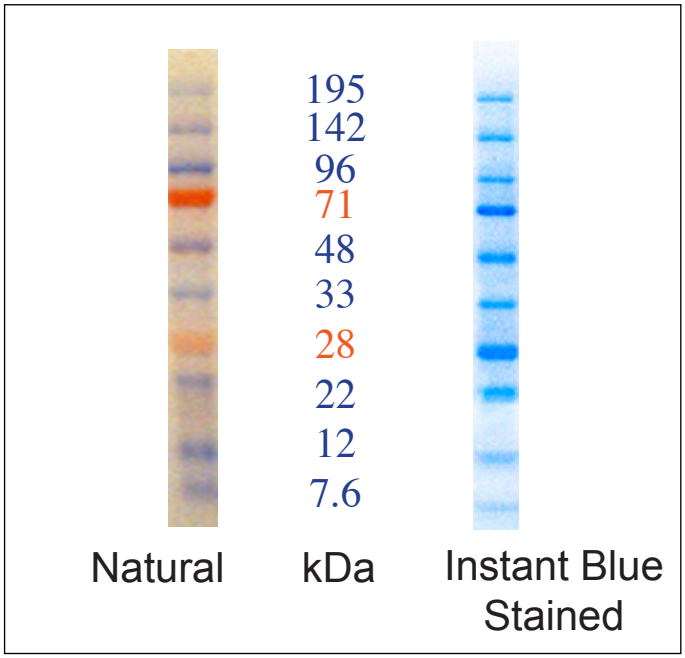
* pH should be 7.6 at 25° C.

## ClearPAGE TWO-COLOR SDS MARKER

An orange/blue prestained protein marker is also available for SDS PAGE. The recombinant proteins range in size from 7.6 kDa to 195 kDa. The orange markers are 28 kDa and 71 kDa, the other eight bands are blue. ClearPAGE Two-Color SDS Marker is sold ready to use in a 1x LDS sample buffer with 600$\mu$l per vial (catalog #HM05160). The purity and band sharpness mean the markers can be used for visualizing the separation while running the gel, checking effectiveness on your blot, or as a routine marker in place of other unstained markers.

Recommended volumes to load are:

| Application | 12-well gels (4.2mm wide) | | 17-well gels (2.2mm wide) & Marker well on 2D gels | |
|---|---|---|---|---|
| | load volume | loads/vial | load volume | loads/vial |
| See during run | 10$\mu$l | 60 | 5$\mu$l | 120 |
| See on blot membrane | 4$\mu$l | 150 | 2$\mu$l | 300 |
| See with stain | 4$\mu$l | 150 | 2$\mu$l | 300 |




Comparison of Marker on ClearPAGE 12%, 12 well SDS gel with or with Instant Blue stain. Molecular weights are the apparent weights in the ClearPAGE SDS gel system.

# Ordering Information for ClearPAGE Precast SDS Gels and Accessories

| SPECIAL PROMOTIONS & SAMPLER KITS for SDS PRECAST GELS<br>Part number | Description |
|---|---|
| FM95005 | Special offer includes: FREE DCX-700 with purchase of 50 ClearPAGE gels and related buffers |
| FM91006 | Special offer includes: DCX-700 and EPS-300-II Power Supply |
| FM90002 | ClearPAGE Sampler Kit with trial size buffers and 2 SDS gels of customer's choice |
| FM90005 | ClearPAGE SUPER Sampler Kit with trial size buffers and 2 SDS gels of customer's choice, trial size 2-Color SDS marker and trial size Instant Blue Stain |
| **BUFFERS, REDUCING SOLUTIONS, MARKERS & STAINS FOR PROTEIN SEPARATIONS**<br>**Part number** | **Description** |
| FB31002 | ClearPAGE LDS Sample Buffer -2ml |
| FB31010 | ClearPAGE LDS Sample Buffer -10ml |
| FB32001 | ClearPAGE DTT Reducer 10x, 1ml |
| FB50053 | ClearPAGE SDS-Non-Reducing Running Buffer - 50ml, 20x |
| FB50500 | ClearPAGE SDS-Non-Reducing Running Buffer - 500ml, 20x |
| FB60053 | ClearPAGE SDS-Reducing Running Buffer -50ml, 20x |
| FB60500 | ClearPAGE SDS-Reducing Running Buffer - 500ml, 20x |
| FB14053 | ClearPAGE TURBO Reducing Running Buffer- 50ml, 20x |
| FB14500 | ClearPAGE TURBO Reducing Running Buffer- 500ml, 20x |
| FB82500 | ClearPAGE TGS Transfer Buffer-500ml |
| HG73010 | ClearPAGE **Instant Blue** Stain, 1 liter, enough for 40-50 mini-gels |
| HG73050 | ClearPAGE **Instant Blue** Stain, 50ml, trial size |
| HM05160 | 2-Color SDS Marker, 0.6ml, recombinant protein range: 7.6kDa - 195kDa |
| **PRECAST GELS-SDS- 10cm x 10cm for use with TEO Buffer (tris-trycine with tri-ethanol amine)**<br>**Part number** | **Description** |
| FK00812-10 | ClearPAGE SDS Gel 8%, 12 well, package of 10 |
| FK00827-10 | ClearPAGE SDS Gel 8%, 17 well, package of 10 |
| FK01001-10 | ClearPAGE SDS Gel 10%, 1 well, package of 10 |
| FK01012-10 | ClearPAGE SDS Gel 10%, 12 well, package of 10 |
| FK01027-10 | ClearPAGE SDS Gel 10%, 17 well, package of 10 |
| FK01201-10 | ClearPAGE SDS Gel 12%, 1 well, package of 10 |
| FK01212-10 | ClearPAGE SDS Gel 12%, 12 well, package of 10 |
| FK01227-10 | ClearPAGE SDS Gel 12%, 17 well, package of 10 |
| FK01612-10 | ClearPAGE SDS Gel 16%, 12 well, package of 10 |
| FK01627-10 | ClearPAGE SDS Gel 16%, 17 well, package of 10 |
| FK40812-10 | ClearPAGE SDS Gel 4-8%, 12 well, package of 10 |
| FK40827-10 | ClearPAGE SDS Gel 4-8%, 17 well, package of 10 |
| FK41212-10 | ClearPAGE SDS Gel 4-12%, 12 well, package of 10 |
| FK41227-10 | ClearPAGE SDS Gel 4-12%, 17 well, package of 10 |
| FK42001-10 | ClearPAGE SDS Gel 4-20%, 1 well, package of 10 |
| FK42002-10 | ClearPAGE SDS Gel 4-20%, 2D, package of 10 |
| FK42012-10 | ClearPAGE SDS Gel 4-20%, 12 well, package of 10 |
| FK42027-10 | ClearPAGE SDS Gel 4-20%, 17 well, package of 10 |
| FK82001-10 | ClearPAGE SDS Gel 10-20%, 1 well, package of 10 |
| FK82012-10 | ClearPAGE SDS Gel 10-20%, 12 well, package of 10 |
| FK82017-10 | ClearPAGE SDS Gel 10-20%, 17 well, package of 10 |
| **PRECAST GELS- SDS- 10cm x 8cm- for use with TEO Buffer (tris-trycine with tri-ethanol amine)**<br>**Part number** | **Description** |
| BRGK-100 | Replacement Gasket adapts Bio Rad's Mini-Protean II for use with 8cm x10cm ClearPAGE gels |
| BK01212-10 | ClearPAGE SDS Gel 12%, 12 well, package of 10 |
| BK01227-10 | ClearPAGE SDS Gel 12%, 17 well, package of 10 |
| BK40812-10 | ClearPAGE SDS Gel 4-8%, 12 well, package of 10 |
| BK40827-10 | ClearPAGE SDS Gel 4-8%, 17 well, package of 10 |
| BK42012-10 | ClearPAGE SDS Gel 4-20%, 12 well, package of 10 |
| BK42027-10 | ClearPAGE SDS Gel 4-20%, 17 well, package of 10 |
| **BLOTTING & DRYING ACCESSORIES for SDS GELS**<br>**Part number** | **Description** |
| FB82500 | ClearPAGE TGS Transfer Buffer - 500ml |
| HB90025 | 4-place Drying Frame with "cut-out", 25cm x 25cm with 8 clamps, 20 pieces of cellophane, and 125mls of drying solution |
| HB90013 | 4-place Drying Frame, with 8 clamps and 20 pieces of cellophane |
| HB01320 | Precut cellophane - 13 x 13 cm, package of 20 sheets |
| HP19001 | ClearPAGE Blot Sandwich NC 90x85mm 2/pk. 0.2µ Nitrocellulose/1mm blotting paper |
| HP19020 | ClearPAGE Blot Sandwich NC 90x85mm 20/pk. 0.2µ Nitrocellulose/1mm blotting paper |
| HP29301 | ClearPAGE Blot Sandwich PVDF 90x85mm 2/pk. 0.2µ PVDF/1mm blotting paper |
| HP29320 | ClearPAGE Blot Sandwich PVDF 90x85mm 20/pk. 0.2µ PVDF/1mm blotting paper |
| HB04510 | ClearPAGE Gel Drying Solution - 1 liter |
| HB02520 | Precut Cellophane - package of 20 sheets |
| HB90001 | Drying frame with 8 clamps and 20 sheets of cellophane |

## Ordering Information for ClearPAGE DNA/Native Precast Gels & Accessories

| SPECIAL PROMOTIONS & SAMPLER KITS for DNA/NATIVE PRECAST GELS<br>Part number | Description |
|---|---|
| FM90003 | ClearPAGE Sampler Kit with trial size buffers and 2 DNA/Native gels of customer's choice |
| **BUFFER SOLUTIONS FOR DNA/NATIVE PROTEIN SEPARATIONS<br>Part number** | **Description** |
| FB82500 | ClearPAGE TGS Transfer & Running Buffer - 500ml |
| GB33010 | ClearPAGE DNA/Native Buffer -10ml |
| GB61053 | ClearPAGE DNA/Native Running Buffer-50ml |
| GB61500 | ClearPAGE DNA/Native Running Buffer- 0.5 liters |
| **PRECAST GELS-DNA/NATIVE<br>Part number** | **Description** |
| GN01012-10 | ClearPAGE DNA/Native Gel 10%, 12 well, package of 10 |
| GN01027-10 | ClearPAGE DNA/Native Gel 10%, 17 well, package of 10 |
| GN20812-10 | ClearPAGE DNA/Native Gel 2-8%, 12 well, package of 10 |
| GN20827-10 | ClearPAGE DNA/Native Gel 2-8%, 17 well, package of 10 |
| GN32012-10 | ClearPAGE DNA/Native Gel 3-20%, 12 well, package of 10 |
| GN32027-10 | ClearPAGE DNA/Native Gel 3-20%, 17 well, package of 10 |
| **DRYING ACCESSORIES for DNA/NATIVE GELS<br>Part number** | **Description** |
| HB04510 | ClearPAGE Gel Drying Solution - 1 liter |
| HB02520 | Precut Cellophane - package of 20 sheets |
| HB90001 | Drying frame with 8 clamps |
| HB90025 | 4-place Drying Frame with "cut-out", 25cm x 25cm with 8 clamps, 20 pieces of cellophane, and 125mls of drying solution |

## Ordering Information for ClearPAGE "Classics" TGS Precast Gels & Accessories

| SPECIAL PROMOTIONS & SAMPLER KITS for ClearPAGE "Classics" TGS PRECAST GELS<br>Part number | Description |
|---|---|
| FM90003 | ClearPAGE Sampler Kit with trial size buffers and 2 DNA/Native gels of customer's choice |
| **BUFFER SOLUTIONS for TGS gels<br>Part number** | **Description** |
| FB82500 | ClearPAGE TGS Transfer and TGS ClearPAGE Classics Running Buffer - 500ml |
| **PRECAST GELS-DNA/NATIVE<br>Part number** | **Description** |
| TG01212-10 | ClearPAGE "Classics" TGS Gel 12%, 12 well, package of 10 |
| TG01217-10 | ClearPAGE "Classics" TGS Gel 12%, 17 well, package of 10 |
| TG42012-10 | ClearPAGE "Classics" TGS Gel 4-20%, 12 well, package of 10 |
| TG42017-10 | ClearPAGE "Classics" TGS Gel 4-20%, 17 well, package of 10 |
| TG81612-10 | ClearPAGE "Classics" TGS Gel 8-16%, 12 well, package of 10 |
| TG81617-10 | ClearPAGE "Classics" TGS Gel 8-16%, 17 well, package of 10 |
| **DRYING ACCESSORIES for ClearPAGE Classics<br>Part number** | **Description** |
| HB04510 | ClearPAGE Gel Drying Solution - 1 liter |
| HB02520 | Precut Cellophane - package of 20 sheets |
| HB90001 | Drying frame with 8 clamps |
| HB90025 | 4-place Drying Frame with "cut-out", 25cm x 25cm with 8 clamps, 20 pieces of cellophane, and 125mls of drying solution |

Note: ClearPAGE "Classics" TGS Precast gels have a separate set of instructions

## Ordering Information for Related Products

| DUAL COOL SYSTEM<br>Part number | Description |
|---|---|
| **DCX-700** | **Dual Cool System, CE.** 2 place Combo System. Fits precast gels or glass plate dimensions of 10x10cm or 10x8cm(h). Kit includes: lower reservoir, safety cover with attached leads, core, 2 blotting cassettes with sponge pads,<br>2 freezer blocks, single gel adapter plate and instruction manual |
| **QNX-700** | **Quadra System, CE,** 4 place Combo System without cooling. Two cores accomodate 4 gels or 4 blotting cassettes. Fits 4 precast gels or 4 sets of glass plates with dimensions of 10x10cm or 10x8cm(h). Kit includes: lower reservoir, safety cover with attached leads, 2 cores, 4 blotting cassettes with sponge pads, and instruction manual |
| **QNC-700** | **Quadra System, CE,** 4 place Combo System with double-sided cooling labyrinth. Two cores accomodate 4 gels or 4 blotting cassettes. Fits 4 precast gels or 4 sets of glass plates with dimensions of 10x10cm or 10x8cm(h). Kit includes: lower reservoir, safety cover with attached leads, 2 cores, 4 blotting cassettes with sponge pads, and instruction manual |
| **4-PLACE BLOTTING SYSTEM**<br>**Part number** | **Description** |
| **EBX-700** | **4-Place Blotter, CE.** Kit includes: lower reservoir, safety cover with attached leads, 4 blotting cassettes, 4 sponge pads, 4 freezer blocks, anode, cathode, and instruction manual |
| **POWER SUPPLIES**<br>**Part number** | **Description** |
| **EPS-300-II** | **Mini Power Supply with 24hr timer,** CV or CC, 10-300V, 110V/60Hz, current range: 4-500mA, 90 watts |
| **EPS-300-IIV** | **Mini Power Supply with 24hr timer,** CV or CC, 10-300V, 220V/50Hz, current range: 4-500mA, 90 watts |
| **EPS-200-II** | **High Current Electroblotting Power Supply with 24hr timer,** CV or CC, 5-200V, 110V/50-60Hz, current range: 4-2000mA, 200 watts |
| **EPS-200-IIV** | **High Current Electroblotting Power Supply with 24hr timer,** CV or CC, 5-200V, 220V/50-60Hz, current range: 4-2000mA, 200 watts |



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