



Criterion™

Precast Gels

Advancing the art of precast gel electrophoresis

BIO-RAD

Simply what you'd expect from Bio-Rad:

Masterful results that transcend the

The Standard in Precast Gel Systems

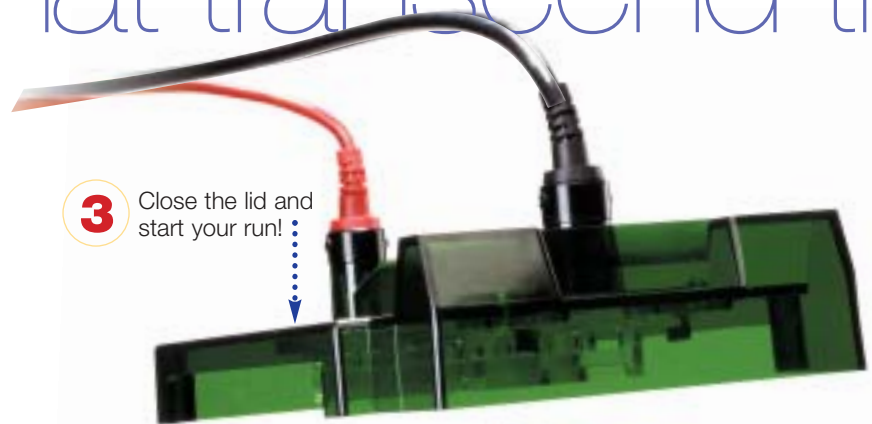
Criterion is a revolutionary mini precast gel electrophoresis system that is remarkably easy to use and offers the ultimate in precast gels.

The innovation behind the Criterion system is the cassettes' patented* integrated buffer chamber, which simplifies assembly and ensures that the system will never leak. Locator slots for the cassettes allow you to slide the gels into place without alignment hassles or bulky clamps. Easily run a single gel or two gels without the need for buffer dams. Replaceable electrode carriers with prestrung platinum wires even make electrode changes easy.

Using the Cell Is Simple

1. Drop in cassettes
2. Pour in buffer and load samples
3. Close the lid and start your run!

* US patents #5,073,246 and #5,656,145 and other patents issued and pending.



3 Close the lid and start your run!

2 Pour in buffer and load samples

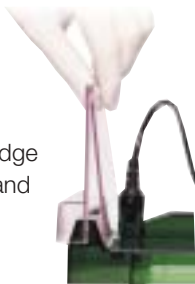
1 Drop in cassettes



ordinary

Safe and Easy-to-Open Cassettes

The Criterion cell lid features a built-in wedge that opens Criterion gel cassettes easily and consistently in one simple step. A built-in wedge means there is no extra tool to keep track of.



Vital Information Printed on Each Gel

Never lose track of critical gel information. Lot number, expiration date, and gel and buffer type are printed on every gel cassette.



The Combs You Need

The Criterion system features five comb styles, including three multi-well formats (12+2, 18-, and 26-well), two IPG combs for 2-D electrophoresis, and a prep comb.

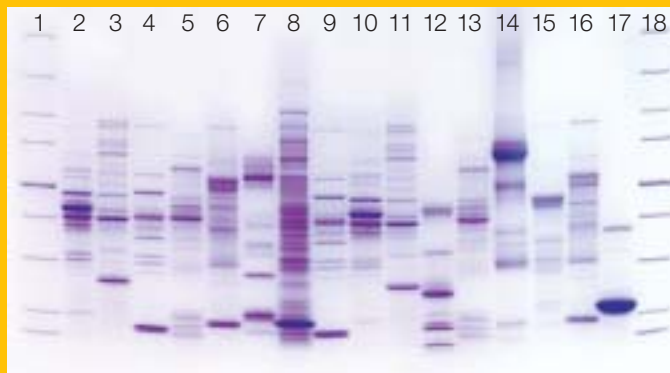
J-Foot Cassette Design

Our J-foot design (patent pending) at the lower edge of the cassette allows the gel to be lifted easily from the cassette and to lie flat on filter paper, cellophane, or blotting membrane without cutting or trimming.



Gel Loading Made Easier

From patented sample loading guides that direct your loading tip directly to the bottom of each well, to outlined and numbered wells printed on each gel cassette, the Criterion system makes it easy to see and load wells.



See all your data on one gel, not two. An 18-well Criterion Tris-HCl 4–20% gradient gel is capable of running twice as many samples as a standard mini gel. Lanes 1 and 18, Precision Protein™ electrophoresis standards; lanes 2 and 10, chicken extract; lanes 3 and 11, shrimp extract; lanes 4 and 9, fish extract; lanes 5 and 13, ADH; lanes 6 and 16, catalase; lane 7, snake venom; lane 8, *E. coli* lysate; lane 12, peroxidase; lane 14, raccoon serum; lane 15, urease; lane 17, myosin.



Mouse liver extract separated on an 11 cm ReadyStrip™ IPG strip, pH 3–10, followed by second-dimension separation on a 4–12% Criterion XT Bis-Tris gel with Precision Plus Protein™ standards. The gel was run with XT MOPS buffer and stained with SYPRO Ruby protein gel stain.

Separate More Samples in Fewer Runs

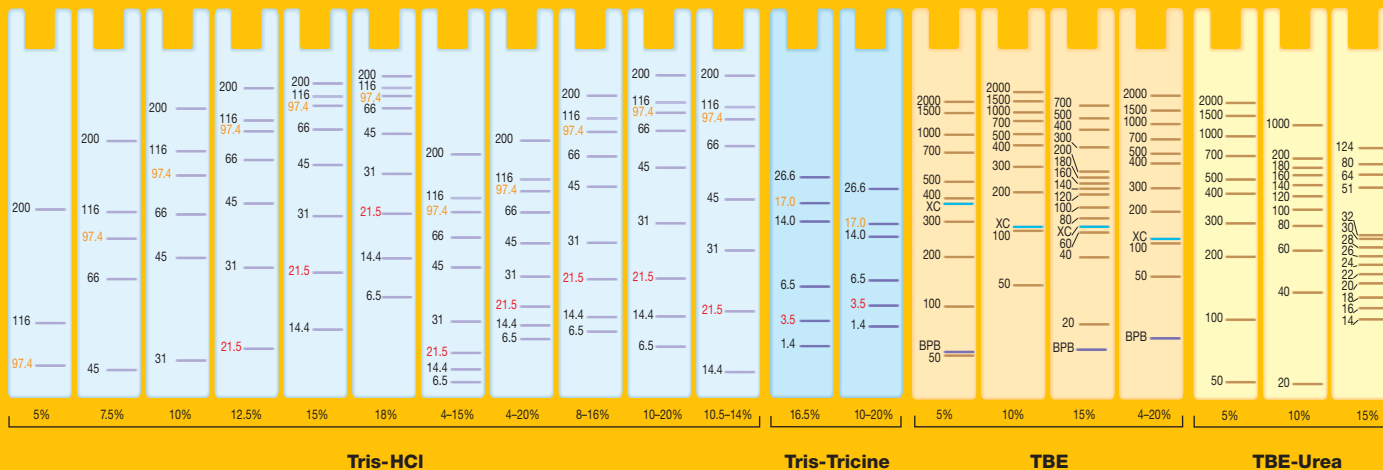
Criterion gels offer the sample capacity to outperform any other precast gel system. Using 12+2, 18-, or 26-well combs, you can analyze more results on a single Criterion gel than on two standard mini gels — and a Criterion Tris-HCl gel runs in as little as 45 minutes to further maximize your time savings.

Resolve More Proteins on Every Gel

The Criterion system together with ReadyStrip IPG strips can provide more 2-D spots on a single gel than any other mini 2-D system. Criterion IPG combs have a separate well for standards and are designed to hold 11 cm ReadyStrip IPG strips, providing 35% more focusing area in your first-dimension separation and 20% more gel area in the second dimension. Run 12 gels at once on a Criterion Dodeca cell with the confidence of consistent, sharply resolved spots every time.

Migration Charts of Protein Standards on Criterion Gels*

(Sizes in kD except for TBE and TBE-urea gels, where sizes are in bp; IEF and zymogram patterns not included.)



* Also see Criterion XT migration chart on opposite page.

Bio-Rad Offers a Precast Gel for Virtually Every Application

Bis-Tris and Tris-Acetate Gels

For SDS-PAGE and Native PAGE

Criterion XT precast gels enable the separation of proteins using just two gel buffer systems: Bis-Tris gels for small to mid-size proteins and Tris-acetate gels for large proteins. Criterion XT gels are formulated at a neutral pH, significantly delaying acrylamide hydrolysis compared to traditional Laemmli systems.

Criterion XT Tris-acetate gels do not contain SDS and can be used with Tris-glycine buffer when native PAGE conditions are required. Our nonreducing, nondenaturing XT sample buffer maintains protein secondary structure and native charge density for native PAGE conditions. For SDS-PAGE applications, the sample buffer should be supplemented with XT reducing agent, a pH-neutralized and stabilized solution of tris(2-carboxyethyl)phosphine, and SDS to ensure denaturation of the sample proteins.

Tris-HCl Gels

For SDS-PAGE and Native PAGE

SDS-PAGE is the most common choice for protein electrophoresis. SDS-PAGE separates complex protein mixtures by molecular weight and allows estimation of

the molecular weights of sample proteins.

Bio-Rad's Tris-HCl gels are made without SDS so that, by also omitting SDS from the running buffer, they can be used to run proteins under nondenaturing conditions for analysis of their native conformation and activity. Native analysis does not provide accurate molecular weight information.

Tris-Tricine Gels

For Small Protein and Polypeptide Analysis

Tris-Tricine gels are ideal for separation of peptides and small proteins with molecular weight <10,000. Superior resolution is achieved by slowing the migration rate of the peptide-SDS complexes. This helps achieve separation from the faster-moving SDS micelles that interfere with peptide resolution in Tris-glycine buffer systems.

IEF Gels

For Isoelectric Focusing

IEF separates proteins based on their net charge rather than molecular weight. IEF gels are cast with carrier ampholytes to create a pH gradient within the gel. Proteins migrate to their isoelectric point (pI), the pH at which their net charge is zero. IEF gels contain no denaturing agents, and allow separation under native conditions.

Zymogram Gels

For Protease Detection

Zymogram gels contain either gelatin or casein, which are substrates for various proteases. Samples are run under nonreducing conditions, then allowed to renature and consume the substrate. Samples with proteolytic activity can be visualized as clear bands against a blue background after Coomassie Blue R-250 staining.

TBE Gels

For dsDNA Separation

TBE gels are suitable for the electrophoresis of nucleic acids from 50 to 2,000 base pairs. TBE gels are ideal for analysis of the purity of PCR products, standard dsDNA analysis, and RNase protection assays.

TBE-Urea Gels

For ssDNA and RNA Separation

Denaturing TBE-urea gels are polyacrylamide gels that maintain denaturing conditions for analysis of single-stranded DNA and RNA. Nucleic acids between 60 and 200 bases are resolved as sharp, distinct bands. Applications include oligonucleotide purity analysis, RNase protection assays, and northern blotting.

Timeless Beauty



Criterion™ XT Advantages

- 12-month extended shelf life for Bis-Tris gels and 8 months for Tris-acetate gels
- Room temperature storage: no more refrigerator crowding problems
- Optimized running buffers for equivalent migration patterns to other neutral-pH gels
- Buffer sample sizes for low-cost trial runs
- Ease of use and convenience, plus the same superior Criterion format

With a 12-month shelf life, new Criterion XT gels give you beautiful results anytime.

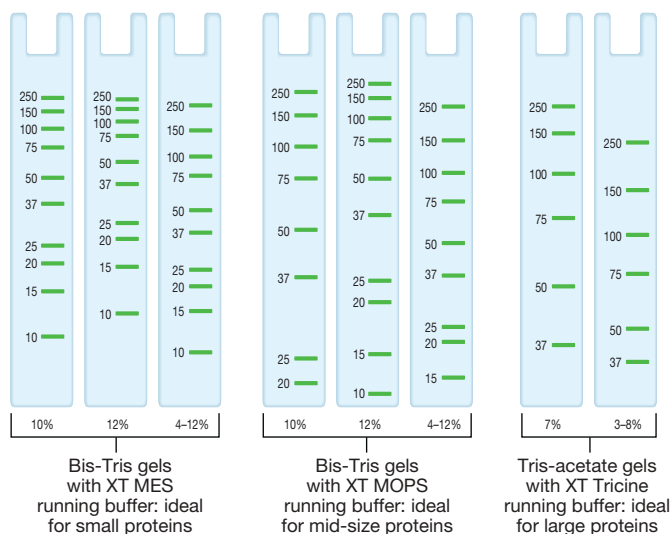
All the Benefits of the Criterion Format

Criterion XT gels, the newest addition to the Criterion product line, are the most convenient, highest-throughput, highest-quality extended-shelf-life precast gels available. Criterion XT gels provide a shelf life of up to 12 months at room temperature along with the superior format and numerous benefits of the Criterion system.

Criterion XT precast gels are formulated at a pH near neutrality, significantly delaying acrylamide hydrolysis. Specially optimized buffers result in tighter, better resolved bands throughout the entire life of the gel.

This high-performance, versatile system allows separation of small to large proteins using just two gel buffer systems: Criterion XT Bis-Tris precast gels for small to mid-sized proteins and Criterion XT Tris-acetate precast gels for large proteins.

Criterion XT Migration Chart



Converting to Criterion XT Gels

If you use ...	Then go with ...
10–20%, 16.5% peptide/Tricine gels	10%, 12%, 4–12% Bis-Tris gels with XT MES buffer
10% Tris-HCl gels	10% Bis-Tris gels with XT MOPS buffer
12% Tris-HCl gels	12% Bis-Tris gels with XT MOPS buffer
15%, 4–15%, 4–20% Tris-HCl gels	4–12% Bis-Tris gels with XT MOPS buffer
5% Tris-HCl gels	3–8% Tris-acetate gels with XT Tricine buffer
7.5% Tris-HCl gels	7% Tris-acetate gels with XT Tricine buffer



Criterion XT gels separate more samples in fewer runs. Precision Plus Protein standards separated on a 12% Criterion XT Bis-Tris 18-well gel with XT MOPS buffer (left) and on a competitor's 12% Bis-Tris 10-well mini gel (right).

Criterion XT Specifications and Ordering Information

For specifications and ordering information for other Criterion precast gels, see back page.



Specifications (Criterion XT Gels)

Gel dimensions (W x L)	8.7 x 13.3 cm
Gel thickness	1.0 mm
Cassette dimensions	10.6 x 15 cm
Cassette material	Styrene copolymer
Comb material	Polycarbonate
Storage tray material	PET
Gel storage conditions	Room temperature for Bis-Tris gels 4°C for Tris-Acetate gels
Gel shelf life	12 months for Bis-Tris gels 8 months for Tris-Acetate gels

Ordering Information

Description	12+2 Well Comb* ** 45 µl Samples	18-Well Comb 30 µl Samples	26-Well Comb* 15 µl Samples	Prep+2 Well Comb** 800 µl Samples	IPG+1 Well Comb** 11 cm IPG Strip	IPG-Well Comb 11 cm IPG Strip
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Criterion XT Bis-Tris Gels

10% Resolving Gel	345-0111	345-0112	345-0113	345-0114	345-0115	345-0116
12% Resolving Gel	345-0117	345-0118	345-0119	345-0120	345-0121	345-0122
4-12% Resolving Gel	345-0123	345-0124	345-0125	345-0126	345-0127	345-0128

Criterion XT Tris-Acetate Gels

3-8% Resolving Gel	345-0129	345-0130	345-0131	345-0132	345-0133	345-0134
7% Resolving Gel	345-0135	345-0136	345-0137	345-0138	345-0139	345-0140

Criterion XT Buffers and Reagents

161-0788	XT MOPS Running Buffer, 20x, 500 ml	161-0793	XT MOPS Buffer Kit, includes 500 ml 20x XT MOPS running buffer, 10 ml 4x sample buffer, 1 ml XT reducing agent
161-0789	XT MES Running Buffer, 20x, 500 ml	161-0796	XT MES Buffer Kit, includes 500 ml 20x XT MES running buffer, 10 ml 4x sample buffer, 1 ml XT reducing agent
161-0790	XT Tricine Running Buffer, 20x, 500 ml	161-0797	XT Tricine Buffer Kit, includes 500 ml 20x XT Tricine running buffer, 10 ml 4x sample buffer, 1 ml XT reducing agent
161-0791	XT Sample Buffer, 4x, 10 ml		
161-0792	XT Reducing Agent, 1 ml		

* Multichannel pipet compatible.

** Includes reference well(s).



Take advantage of comprehensive, in-person demos, easy-to-follow literature, and more. To schedule a demo or for more information, visit us on the Web at criterion.bio-rad.com or contact your local Bio-Rad representative.

Specifications (Criterion Gels)

Gel dimensions (W x L)	8.7 x 13.3 cm
Gel thickness	1.0 mm
Cassette dimensions	10.6 x 15.0 cm
Cassette material	Styrene copolymer
Comb material	Polycarbonate
Storage tray material	PET
Gel storage conditions	Store flat at 4°C; do not freeze
Gel shelf life	~12 weeks for Tris-HCl, Tris-Tricine, TBE, zymogram, TBE-urea; ~26 weeks for IEF



The Criterion gel cassette with integral buffer chamber, 10.5 x 15.0 cm, runs exclusively on Criterion cells. The Criterion gel is 13.3 wide x 8.5 cm long and 1.0 mm thick.



The Criterion cell runs 1 or 2 Criterion gels. Lower buffer chamber holds 720 ml; upper buffer chamber/gel cassette chamber holds 60 ml.



The Criterion Dodeca™ cell runs up to 12 gels. Runs with 6 L of buffer.



The Criterion blotter is highly efficient, transferring most proteins in 30 min to 1 hr. Has unique gel blot assembly tray for easy setup. Runs with 1.3 L of buffer.

Ordering Information

Criterion Tris-HCl Gels

(All Tris-HCl gels except 4–15% and 4–20% gels have a 4% stacking gel.)

	12+2 Comb* 45 µl Samples	18-Well Comb 30 µl Samples	26-Well Comb* 15 µl Samples	Prep+2 Comb 800 µl Samples	IPG+1 Comb 11 cm IPG Strip	IPG Comb 11 cm IPG Strip
5% Resolving Gel	345-0001	345-0002	345-0003	345-0004	—	—
7.5% Resolving Gel	345-0005	345-0006	345-0007	345-0008	—	—
10% Resolving Gel	345-0009	345-0010	345-0011	345-0012	345-0101	345-0013
12.5% Resolving Gel	345-0014	345-0015	345-0016	345-0017	345-0102	345-0018
15% Resolving Gel	345-0019	345-0020	345-0021	345-0022	—	—
18% Resolving Gel	345-0023	345-0024	345-0025	345-0026	—	—
4–15% Gradient Gel	345-0027	345-0028	345-0029	345-0030	345-0103	345-0031
4–20% Gradient Gel	345-0032	345-0033	345-0034	345-0035	345-0104	345-0036
8–16% Gradient Gel	345-0037	345-0038	345-0039	345-0040	345-0105	345-0041
10–20% Gradient Gel	345-0042	345-0043	345-0044	345-0045	345-0106	345-0046
10.5–14% Gradient Gel	345-9949	345-9950	345-9951	345-9952	345-0107	345-9953

Criterion IEF Gels

IEF Gel, pH 3–10	345-0071	345-0072	345-0073	345-0074	—	—
IEF Gel, pH 5–8	345-0075	345-0076	345-0077	345-0078	—	—

Criterion Zymogram Gels

(Zymogram gels have a 4% stacking gel.)

10% Gel, gelatin	345-0079	345-0080	345-0081	—	—	—
12.5% Gel, casein	345-0082	345-0083	345-0084	—	—	—

Criterion Tris-Tricine/Peptide Gels

(Peptide gels have a 4% stacking gel.)

16.5% Gel	345-0063	345-0064	345-0065	345-0066	—	—
10–20% Gradient Gel	345-0067	345-0068	345-0069	345-0070	—	—

Criterion TBE Gels

5% Gel	345-0047	345-0048	345-0049	345-0050	—	—
10% Gel	345-0051	345-0052	345-0053	345-0054	—	—
15% Gel	345-0055	345-0056	345-0057	345-0058	—	—
4–20% Gradient Gel	345-0059	345-0060	345-0061	345-0062	—	—

Criterion TBE-Urea Gels

5% Gel	345-0085	345-0086	345-0087	—	—	—
10% Gel	345-0088	345-0089	345-0090	—	—	—
15% Gel	345-0091	345-0092	345-0093	—	—	—

Catalog # Description

Criterion Mini Vertical Cells and Blotters

165-6001	Criterion Cell, includes tank, lid with power cables, 3 sample loading guides to match 12+2, 18-well, and 26-well combs, instructions
165-4130	Criterion Dodeca Cell, includes tank and lid with power cables, instructions
170-4070	Criterion Blotter With Plate Electrodes, includes tank, lid with cables, 2 gel holder cassettes, filter paper (50 sheets), 4 fiber pads, gel blot assembly tray and roller, sealed ice cooling unit, instructions
170-4071	Criterion Blotter With Wire Electrodes, includes tank, lid with cables, 2 gel holder cassettes, filter paper (50 sheets), 4 fiber pads, gel blot assembly tray and roller, sealed ice cooling unit, instructions

Sample Loading Guides

165-6006	Criterion Sample Loading Guide, 12+2 well, 1
165-6007	Criterion Sample Loading Guide, 18-well, 1
165-6008	Criterion Sample Loading Guide, 26-well, 1

Criterion Membrane/Filter Paper Sandwiches

162-0232	0.2 µm Nitrocellulose/Filter Paper Sandwich, 20 pack
162-0233	0.2 µm Nitrocellulose/Filter Paper Sandwich, 50 pack
162-0234	0.45 µm Nitrocellulose/Filter Paper Sandwich, 20 pack
162-0235	0.45 µm Nitrocellulose/Filter Paper Sandwich, 50 pack
162-0236	Sequi-Blot™ PVDF/Filter Paper Sandwich, 20 pack
162-0237	Sequi-Blot™ PVDF/Filter Paper Sandwich, 50 pack

* Multichannel pipet compatible.

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