

Product No. 07831

WIDE RANGE Gel Preparation Buffer (4x) for PAGE

Features

- WIDE RANGE Gel Preparation Buffer is a 4X concentrated neutral pH buffer for preparation of both stacking and separating gels with the same simple protocol as casting a single percentage gel.
- It offers wide separation range of proteins just like a gradient gel.
- The improved gel stability provides a longer shelf life than the gel with Laemmli buffer system.
- The increased tensile strength allows easy handling even a low percentage gel.

Protocol

- Replace the Tris-HCl buffer in Laemmli buffer system with this buffer for preparation of both stacking gel and separating gel.
*Refer to the table "Preparation of polyacrylamide gel" published in the web manual.
- Use Laemmli buffer formulations as the sample and running buffers.

Products : Running Buffer Solution (10x) for SDS-PAGE, Tris-Glycine (Product No.30329)
Sample Buffer Solution with 2-ME (2x) for SDS-PAGE (Product No.30566)

<Separation of WIDE RANGE Gel vs Laemmli gel>

	WIDE RANGE Gel	Laemmli gel
Gel %	10 %	12 %
Separation	M.W.(kDa) 200→ 45→ 22→ 6.5→	M.W.(kDa) 200→ 45→ 22→

Attention

- Although this gel system may improve resolution for small molecular weight components, it may not improve resolution for large molecular weight proteins compared to Laemmli SDS-PAGE systems at equivalent acrylamide concentrations. Lower the acrylamide concentration about 2% in such a case.
- Use of ethanol to overlay the gel running layer in the glass plate enclosure will not influence electrophoretic separation and gel staining.
- Although this system is SDS-free, proteins will be denatured by SDS contained in the sample and running buffer formulations.
- Sil-Best Stain One (Product No.06865) is recommended for silver staining. If a high background is observed with other silver staining products, a longer fixing step (over 40 minutes) may decrease the background.

Storage

2 – 8 °C

Expiration

Expiration date is stated on the product label.

Packing

250 mL (Product No.07831-94)

Reference

Laemmli, U. K. : Nature, 227, 680, (1970)

<This document is not attached to the product>

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Preparation of polyacrylamide gel

Preparation with 40(w/v)%-Acrylamide/Bis Mixed Solution

Separating gel

unit : mL

Concentration of Acrylamide	Solution	10 mL	20 mL	30 mL	40 mL
6%	Purified water	5.9	11.8	17.7	23.6
	40(w/v)%-Acrylamide/Bis Mixed Solution	1.5	3.0	4.5	6.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.008	0.016	0.024	0.032
8%	Purified Water	5.4	10.8	16.2	21.6
	40(w/v)%-Acrylamide/Bis Mixed Solution	2.0	4.0	6.0	8.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024
10%	Purified Water	4.9	9.8	14.7	19.6
	40(w/v)%-Acrylamide/Bis Mixed Solution	2.5	5.0	7.5	10.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024
12%	Purified Water	4.4	8.8	13.2	17.6
	40(w/v)%-Acrylamide/Bis Mixed Solution	3.0	6.0	9.0	12.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024
15%	Purified Water	3.6	7.3	10.9	14.6
	40(w/v)%-Acrylamide/Bis Mixed Solution	3.8	7.5	11.3	15.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024

Stacking gel

unit : mL

Concentration of Acrylamide	Solution	2 mL	4 mL	6 mL	8 mL
3%	Purified Water	1.33	2.66	3.99	5.32
	40(w/v)%-Acrylamide/Bis Mixed Solution	0.15	0.30	0.45	0.60
	WIDE RANGE Gel Preparation Buffer(4x)	0.50	1.00	1.50	2.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.02	0.04	0.06	0.08
	TEMED	0.002	0.004	0.006	0.008

Preparation with 30(w/v)%-Acrylamide/Bis Mixed Solution

Separating gel		unit : mL			
Concentration of Acrylamide	Solution	10 mL	20 mL	30 mL	40 mL
6%	Purified water	5.4	10.8	16.2	21.6
	30(w/v)%-Acrylamide/Bis Mixed Solution	2.0	4.0	6.0	8.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.008	0.016	0.024	0.032
8%	Purified Water	4.7	9.5	14.2	18.9
	30(w/v)%-Acrylamide/Bis Mixed Solution	2.7	5.3	8.0	10.7
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024
10%	Purified Water	4.1	8.1	12.2	16.3
	30(w/v)%-Acrylamide/Bis Mixed Solution	3.3	6.7	10.0	13.3
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024
12%	Purified Water	3.4	6.8	10.2	13.6
	30(w/v)%-Acrylamide/Bis Mixed Solution	4.0	8.0	12.0	16.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024
15%	Purified Water	2.4	4.8	7.2	9.6
	30(w/v)%-Acrylamide/Bis Mixed Solution	5.0	10.0	15.0	20.0
	WIDE RANGE Gel Preparation Buffer(4x)	2.5	5.0	7.5	10.0
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.1	0.2	0.3	0.4
	TEMED	0.006	0.012	0.018	0.024

Stacking gel		unit : mL			
Concentration of Acrylamide	Solution	2 mL	4 mL	6 mL	8 mL
3%	Purified Water	1.28	2.56	3.84	5.12
	30(w/v)%-Acrylamide/Bis Mixed Solution	0.20	0.40	0.60	0.80
	WIDE RANGE Gel Preparation Buffer(4x)	0.50	1.00	1.50	2.00
	10(w/v)%-Ammonium Peroxodisulfate Solution	0.02	0.04	0.06	0.08
	TEMED	0.002	0.004	0.006	0.008

Required Reagents for preparation of above gel

Product Name	Product No.	Grade
WIDE RANGE Gel Preparation Buffer(4x) for PAGE	07831	SP
40(w/v)%-Acrylamide/Bis Mixed Solution(29:1)	06119	SP
40(w/v)%-Acrylamide/Bis Mixed Solution(37.5:1)	06121	SP
30(w/v)%-Acrylamide/Bis Mixed Solution(29:1)	06141	SP
30(w/v)%-Acrylamide/Bis Mixed Solution(37.5:1)	06144	SP
10(w/v)%Ammonium Peroxodisulfate Solution	02634	SP
N,N,N',N'-Tetramethylethylenediamine (TEMED)	33401	SP