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# ProductInformation

**PRESTAINED SDS MOLECULAR WEIGHT MARKERS**

Technical Bulletin **MWM-105A**
Mol. Wt. approx. 27,000-180,000
For SDS-PAGE and Protein Transfer

## TECHNICAL BULLETIN

**Product Information**
Sigma Prestained SDS-PAGE Molecular Weight Markers consist of 7 standard proteins conjugated to a blue dye. After electrophoresis these prestained markers can be transferred from SDS-PAGE gels to solid phase supports such as nitrocellulose, nylon, or polyvinylidene difluoride (PVDF), thus providing a visual check of transfer efficiency. In addition, it is possible to visually monitor the migration of proteins while electrophoresis is in progress.

The electrophoretic mobilities of the marker proteins are altered by the attachment of dye. Lot specific apparent molecular weights of the prestained markers, which are determined using Sigma High Molecular Weight Standard Mixture (Product No. SDS-6H) and printed on the label of each vial, are to be used for generalized approximation of molecular weights. For precise molecular weight determinations on Western blots, Sigma Biotinylated SDS Molecular Weight Standard Mixture (Product No. SDS-6B) is recommended.

| Product No. | Prestained Protein | Native* Mol. Wt. (subunit) |
|---|---|---|
| M3398 | $\alpha_2$-Macroglobulin from Human Plasma | 180,000 |
| G6017 | β-Galactosidase from *E. coli* | 116,000 |
| F0387 | Fructose-6-Phosphate Kinase from Rabbit Muscle | 84,000 |
| P5788 | Pyruvate Kinase from Chicken Muscle | 58,000 |
| F0262 | Fumarase from Porcine Heart | 48,500 |
| L3891 | Lactic Dehydrogenase from Rabbit Muscle | 36,500 |
| T9400 | Triosephosphate Isomerase from Rabbit Muscle | 26,600 |
| SDS-7B | Prestained SDS-Molecular Weight Standard Mixture | |

*The protein-dye conjugates migrate differently than the native proteins. Molecular weights of the prestained proteins are standardized using Sigma SDS-6H markers on a 9.5% Laemmli gel (1). The apparent molecular weight of each prestained protein is indicated on the label of each vial.

**Reagents**
Each vial contains enough prestained protein for 80 uses on standard size gels or 160 uses on minigels.

**Storage**
Store vials at 2-8°C. After reconstitution with sample buffer, store at -20°C or below.

**Preparation Instructions**

Preparation of Reagent Solutions*

1. Urea Solution (8 M Urea)

   | | | |
   |---|---|---|
   | Combine: | Urea (Product No. U6504) | 24.0 g |
   | | Deionized water | 25 ml |

   Warming to 37° C may be required to obtain complete solution. Dilute to 50 ml with deionized water and filter through filter paper.

2. Sample Buffer (0.125 M Trizma-HCl, pH 6.8, containing 4%°SDS, 10%°2-mercaptoethanol, 20%°glycerol and 0.004% bromphenol blue)

   | | | |
   |---|---|---|
   | Combine: | Trizma Base (Product No. T8404) | 1.51 g |
   | | Glycerol (Product No. G8773) | 20 ml |
   | | Deionized water | 25 ml |

   Adjust pH to 6.8 with concentrated HCl and then add:

   | | |
   |---|---|
   | Lauryl Sulfate, Sodium (SDS, Product No. L3771) | 4 g |
   | 2-Mercaptoethanol (Product No. M7154) | 10 ml |
   | Bromphenol Blue (Product No. B0126) | 0.004 g |

   Dilute to a final volume of 100°ml with deionized water, filter and store at -20°C or below in approx. 1°ml aliquots.

Preparation of Prestained Protein Marker Mixture (SDS-7B) and Individual Prestained Markers (M3398, G6017, F0387, P5788, F0262, L3891 and T9400)

3. Preparation of Markers

   Dissolve contents of each vial in 0.5°ml of 8°M urea solution. Then add 0.5°ml of sample buffer. Mix on a vortex mixer until homogeneous. Aliquot and freeze at -20°C or below.

4. Usage

   Incubate the aliquot in a boiling water bath for 1-2 minutes immediately before application of markers to gel.

   Apply 10°µl/well for a standard size gel (16x14°cm).

   Apply 5°µl/well for a minigel (10x10°cm).

*For SDS-PAGE (Laemmli) system only.

**Reference**

1. Laemmli, UK., Nature **227**, 680 (1970)

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