

Technical Data

Certificate of Analysis

Caution: For Laboratory Use. A research chemical for research purposes only.

Multicolored Protein Markers, Wide Range

Molecular weight range 8 to 220 kDa

Catalog Number **NEL316001EA**

Storage Temperature $-20\text{ }^{\circ}\text{C}$

TECHNICAL DATA

Product Description

Multicolored Protein Markers are designed for qualitative molecular mass determinations in SDS-PAGE¹ systems and for visual confirmation of Western blot transfer efficiency.

Multicolored Protein Markers are ready for use. They are formulated in a solution that resists freezing.

Multicolored Protein Markers offer the following features and benefits:

- No need for chemical reduction of the markers before loading the gel.
- No boiling required.
- No freeze/thaw cycles confers diminished degradation and longer shelf life.
- Storage at $-20\text{ }^{\circ}\text{C}$ saves on precious $-70\text{ }^{\circ}\text{C}$ freezer space.
- Simply remove from the freezer, warm to room temperature, and load the gel.

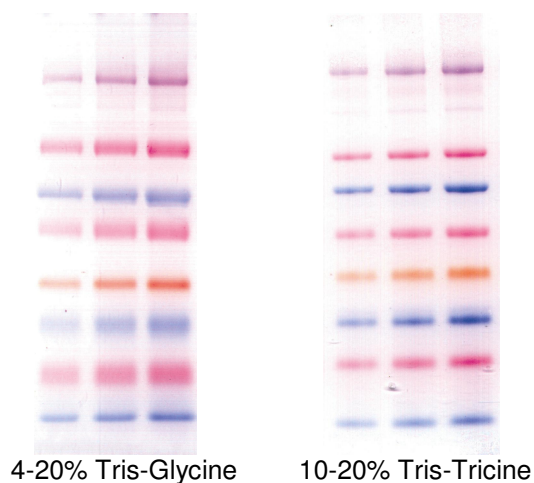
Multicolored Protein Markers are composed of 8 proteins, which have been chemically reduced, alkylated, and conjugated to brilliantly colored dyes. They can be readily visualized on a gel or membrane after transfer. Each vial of **Multicolored Protein Markers** contains 500 μl of solution, enough for at least 50 mini-gel applications.

Multicolored Protein Markers transfer cleanly to nitrocellulose or PVDF membranes using Towbin's² or CAPS buffers, respectively.

Storage/Stability

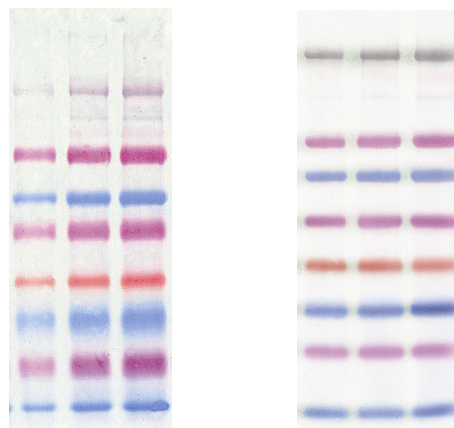
This product ships on wet ice and storage at $-20\text{ }^{\circ}\text{C}$ is recommended. **Multicolored Protein Markers** are stable for at least one year as supplied. Crystals may form in the solution during storage at $-20\text{ }^{\circ}\text{C}$. These crystals dissolve readily upon warming to room temperature. Repeated crystal formation will not affect the performance of the **Multicolored Protein Markers**.

Figure 1.
Wide Range Multicolored Protein Markers in SDS-PAGE Gradient Gels



Both gels were loaded (left to right) with 3, 5 and 7 μl of Wide Range Multicolored Protein Markers. The markers were run using standard conditions on 10 x 10 cm, 1 mm thick, 10-well precast gels.

Figure 2.
Wide Range Multicolored Protein Markers transferred to nitrocellulose membranes using Towbin's buffer.²



Bands transferred to nitrocellulose membranes from the gels in Figure 1 (Tris-Glycine on left and Tris-Tricine on right). Transfers were completed in 90 minutes at 70 volts with Towbin's buffer (Tris-Glycine in 20% methanol.)

Apparent Molecular Masses (kDa) of Multicolored Protein Marker Proteins		
Band Color	4–20% Gel Tris-Glycine	10–20% Gel Tris-Tricine
Violet	220	210
Pink	100	90
Blue	60	65
Pink	45	40
Orange	30	30
Blue	20	20
Pink	12	13
Blue	8	8

Apparent molecular masses were determined by comparison to known standards. The molecular mass of the violet band, which is outside the range of the standards, is an approximation.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Note: It is **not** recommended that **Multicolored Protein** Markers be used as standards for quantitative molecular mass determinations, but only as a qualitative tool.

Procedure

Multicolored Protein Markers are supplied ready-to-use. Remove from the freezer and warm to room temperature before loading onto the gel.

The following are suggested loading volumes for various gel formats:

- 5 to 10 μ l for a mini-gel with no transfer
- 3 to 5 μ l for a mini-gel with transfer to a membrane
- 10 to 15 μ l for a large gel

References

1. Laemmli, U.K., *Nature*, **227**, 680 (1970).
2. Towbin, H. *et al.*, *Proc. Natl. Acad. Sci. USA*, **76**, 4350 (1979).