BIO-RAD

# Precision Molecular Mass Standard

## Catalog Number 170-8207

**Contents** 1 vial containing 250 µl of the following mixture:

| Stock Solution | | When used at 2.5 µl per lane | |
|---|---|---|---|
| 10 µg | 1,000 bp | 100 ng | 1,000 bp |
| 7 µg | 700 bp | 70 ng | 700 bp |
| 5 µg | 500 bp | 50 ng | 500 bp |
| 2 µg | 200 bp | 20 ng | 200 bp |
| 1 µg | 100 bp | 10 ng | 100 bp |

**Quantity** DNA sufficient for 100 lanes at 2.5 µl per lane.

**Concentration** 100 µg/ml in TE Buffer (10 mM Tris-HCl, 1 mM EDTA, pH 8).

**Shipping** The Mass Standard is shipped at room temperature.

**Storage** The Mass Standard should be stored at 4 °C. The standard can be stored at -20 °C in aliquots for long term storage. Use only sterile pipet tips when removing aliquots. Introduction of nucleases will shorten shelf life.

**Shelf life** The Mass Standard is stable for 1 year when stored at 4 °C.

**Use** The Mass Standard can be resolved in standard agarose gels of up to 2% and polyacrylamide gels up to 8%.

Typically, 2.5 µl of the Mass Standard should be loaded into each lane. It is necessary to add loading buffer to the standard prior to loading to insure correct results. Adjustments may be made to the loading volume for different well sizes and desired band intensity.

**Determination of concentration** The concentration values of the Mass Standard fragments are determined by UV absorbance at 260 nm wavelength using the conversion factor: 1.00 $A_{260}$ unit=50 µg/ml DNA. Fragment concentrations are accurate to within ±1%.

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**Please note** In order to maintain accurate fragment concentrations, it is imperative to spin down any condensate and mix contents thoroughly before opening tubes and withdrawing aliquots.

**For best results** Load the smallest practical amount of sample DNA to yield the sharpest bands and most accurate results.

The DNA fragments in this product possess either *Eco*RI- or *Hind* III- compatible cohesive ends.

It is necessary to add loading buffer to the sample prior to loading to insure correct results. Any conventional sample loading buffer should work well. For your convenience we offer the following recipe:

**10X Sample Loading Buffer***
20% Ficoll 400
0.1 M $Na_2EDTA$, pH 8.0
1% SDS
0.25% Bromophenol Blue
0.25% Xylene Cyanol

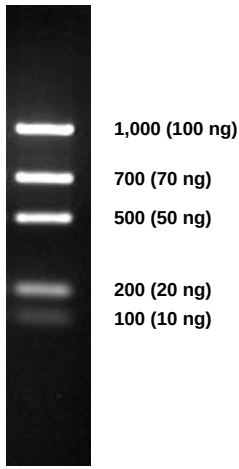


**Fig. 1. 2.5 µl of standard was diluted to 10 µl in sample loading buffer and TE and loaded onto a 1.8% Molecular Biology Certified agarose (catalog number 162-0133) gel.** The gel was run at 70 V for 75 minutes in 1x TAE buffer. The gel was stained in 300 ml of 0.5 µg/ml EtBr for 15 minutes and destained in $dH_2O$ for 30 minutes.

* Ausubel, F. M. *et al* , Current Protocols in Molecular Biology, Wiley Interscience Publishing, (1995), sec. 2.5.1.