50 bp DNA Ladder

1-800-632-7799
info@neb.com
www.neb.com

N3236S 015130215021

N3236S

100-200 gel lanes (100 µg) **Lot: 0151302**

1,000 µg/ml **Store at –20°C** **Exp: 2/15**

1.5 ml Gel Loading

Dye, Blue (6X) **Store at 25°C**

Description: A number of proprietary plasmids are digested to completion with appropriate restriction enzymes to yield 17 bands suitable for use as molecular weight standards for agarose and polyacrylamide gel electrophoresis. The digested DNA includes fragments ranging from 50–1,350 base pairs. The 200 and 500 base pair bands have increased intensity to serve as reference points.

Supplied in: 10 mM Tris-HCl (pH 8.0), 1 mM EDTA.

Reagents supplied:
6X Gel Loading Dye, Blue

1X Gel Loading Dye, Blue:
2.5% Ficoll-400
11 mM EDTA
3.3 mM Tris-HCl (pH 8.0@25°C)
0.017% SDS
0.015% bromophenol blue

Preparation: The double-stranded DNA is digested to completion with appropriate restriction enzymes, phenol extracted and equilibrated to 10 mM Tris-HCl (pH 8.0) and 1 mM EDTA.

Usage Recommendation: We recommend loading 0.5–1.0 µg of 50 bp DNA Ladder diluted in sample buffer. The 50 bp DNA Ladder was not designed for precise quantification of DNA mass but can be used for approximating the mass of DNA in comparably intense samples of similar size.

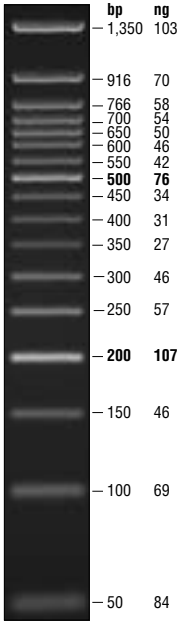
Notes: All ends have 5´ overhangs that can be end labeled using T4 Polynucleotide Kinase (NEB #M0201) or filled-in using DNA Polymerase I, Klenow Fragment (NEB #M0210) (1). Use α-[^{32}P] dCTP or α-[^{32}P] dGTP for the fill-in reaction.

50 bp DNA Ladder is stable for at least 3 months at 4°C.

For long term storage, store at –20°C. If samples need to be diluted, use TE or other buffer of minimal ionic strength. DNA may denature if diluted in dH_2O.

The approximate mass of DNA in each of the bands in the 50 bp DNA Ladder is as follows (assuming a 1.0 µg loading):

Fragment	Base Pairs	DNA Mass
1	1,350	103 ng
2	916	70 ng
3	766	58 ng
4	700	54 ng
5	650	50 ng
6	600	46 ng
7	550	42 ng
8	**500**	**76 ng**
9	450	34 ng
10	400	31 ng
11	350	27 ng
12	300	46 ng
13	250	57 ng
14	**200**	**107 ng**
15	150	46 ng
16	100	69 ng
17	50	84 ng



50 bp DNA Ladder visualized by ethidium bromide staining on a 1.8% TBE agarose gel. Mass values are for 1 µg/lane.

(see other side)

CERTIFICATE OF ANALYSIS

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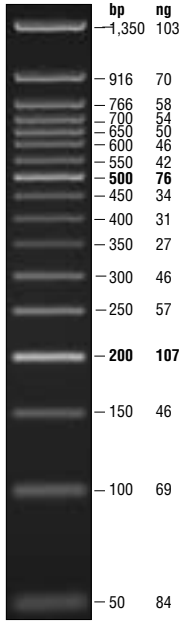

50 bp DNA Ladder visualized by ethidium bromide staining on a 1.8% TBE agarose gel. Mass values are for 1 µg/lane.

(see other side)

CERTIFICATE OF ANALYSIS

Due to the limitations of the acrylamide gel technology, one or two extra bands may be visible on the DNA ladders when run on a polyacrylamide gel.

Suggested protocol for loading a sample:

The following protocol is recommended for a 5 mm wide lane.

1. Prepare loading mixture:

Distilled water	4 µl
6X Blue Loading Dye	1 µl
DNA Ladder	1 µl
Total volume	6 µl

2. Mix gently
3. Load onto the agarose gel

Note: The components of the mixture should be scaled up or down, depending on the width of the agarose gel.

Reference:

1. Sambrook, J., Fritsch, E. F. and Maniatis, T. (1989). *Molecular Cloning: A Laboratory Manual*, (2nd ed.), (pp. 10.51–10.67). Cold Spring Harbor: Cold Spring Harbor Laboratory Press.

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