

# GeneRuler Ultra Low Range DNA Ladder, ready-to-use

Catalog Number SM1213

Pub. No. MAN0013041 Rev. D.00



**WARNING!** Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from [thermofisher.com/support](https://www.thermofisher.com/support).

## Contents and storage

Cat. No.	Contents	Amount	Storage
SM1213	GeneRuler Ultra Low Range DNA Ladder, ready-to-use	50 µg (for 100 applications), 0.1 µg/µL	at room temperature or at 4 °C for periods up to 6 months. For longer periods store at -20 °C.
	6X TriTrack DNA Loading Dye	1 mL	

## Description

Thermo Scientific™ GeneRuler™ Ultra Low Range DNA Ladder, ready-to-use, contains a mix of 11 chromatography-purified individual DNA fragments (in base pairs): 300, 200, 150, 100, 75, **50**, 35, 25, 20, 15, 10. It contains a 50 bp reference band for easy orientation.

The ladder is supplied in the storage and loading buffer and can be directly applied onto a gel.

It is specially designed for electrophoretic analysis of small DNA fragments on high percentage agarose (5 %) and polyacrylamide (8-10 %) gels.

## Storage and Loading Buffer

10 mM Tris-HCl (pH 7.6), 10 mM EDTA, 0.005 % bromophenol blue, 0.005 % xylene cyanol FF, 0.025 % orange G and 10 % glycerol.

## 6X TriTrack DNA Loading Dye

10 mM Tris-HCl (pH 7.6), 0.03 % bromophenol blue, 0.03 % xylene cyanol FF, 0.15 % orange G, 60 % glycerol and 60 mM EDTA.

## Protocol for Loading

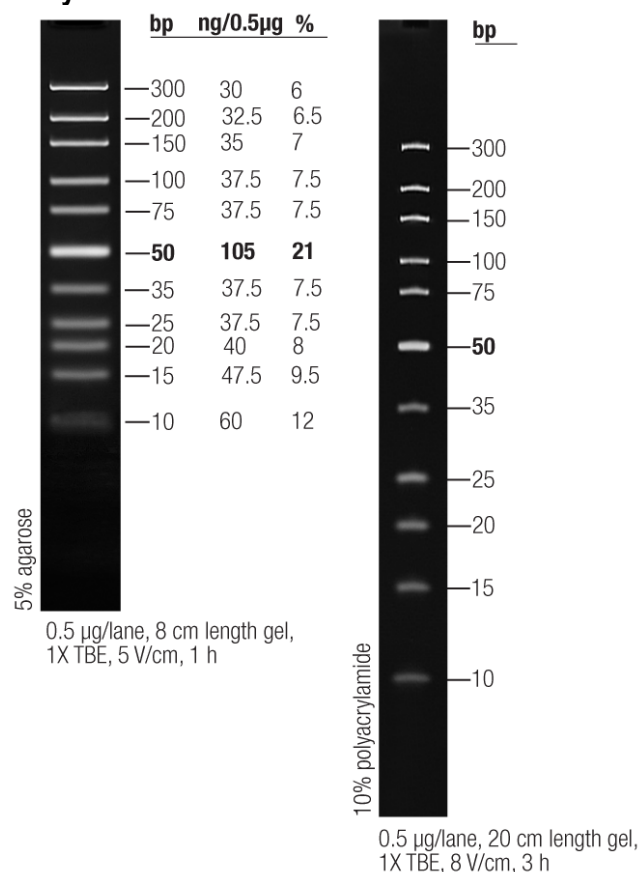
**Step 1:** Mix gently

**Step 2:** Load 1 µL per 1 mm gel lane

## Recommendations

- Do not heat before loading;
- Dilute your DNA sample with the 6X TriTrack DNA Loading Dye (#R1161, supplied with the ladder): mix 1 volume of the dye solution with 5 volumes of the DNA sample;
- Load the same volumes of the DNA sample and the DNA ladder;
- For quantification, adjust the concentration of the sample to equalize it approximately with the amount of DNA in the nearest band of the ladder.
- For DNA band visualization with SYBR<sup>™</sup> Green and other intercalating dyes, do not add the dyes into the sample, use gel staining after electrophoresis or include dyes into agarose gel to avoid aberrant DNA migration.
- **Important note:** For DNA bands visualization with GelRed<sup>™</sup> use gel staining after electrophoresis to avoid aberrant DNA migration.

## GeneRuler DNA Ladder, Ultra Low Range, ready-to-use



## References

1. Stellwagen, N.C., Anomalous electrophoresis of deoxyribonucleic acid restriction fragments on polyacrylamide gels, *Biochemistry*, 22, 6186-6193, 1983.
2. Lane, D., et al., Use of gel retardation to analyze protein – nucleic acid interactions, *Microbiological Reviews*, 56, 509-528, 1992.
3. Stellwagen, N.C., Conformational isomers of curved DNA molecules can be observed by polyacrylamide gel electrophoresis, *Electrophoresis*, 21, 2327-2334, 2000.

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