

O'RangeRuler 20 bp DNA Ladder, ready-to-use

Catalog Number SM1323

Pub. No. MAN0013046 Rev. D00



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
SM1323	O'RangeRuler™ 20 bp DNA Ladder, ready-to-use	50 µg (for 50-100 applications), 0.1 µg/µL	at room temperature or at 4 °C for periods up to 24 months.*
	6X Orange DNA Loading Dye	1 mL	

*For longer periods store at -20 °C.

Description

Thermo Scientific™ O'RangeRuler™ 20 bp DNA Ladder is designed for precise sizing of PCR products and other double-stranded DNA fragments in high percentage agarose or non-denaturing polyacrylamide gels. It is a 20 bp step ladder especially useful for determining 20 bp differences between DNA fragments. The ladder consists of purified and ligated blunt-end basic unit repeats of 20 bp, and it is not suitable for DNA quantification on the gel. The ladder contains the following 15 discrete fragments (in base pairs): **300**, 280, 260, 240, 220, **200**, 180, 160, 140, 120, **100**, 80, 60, 40, and 20. The brighter bands (100, 200 and 300 bp) serve as reference bands. The ladder is ready to use – it is premixed with the 6X Orange DNA Loading Dye for direct loading on gels.

Storage and Loading Buffer

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

6X Orange DNA Loading Dye

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

Protocol for Loading

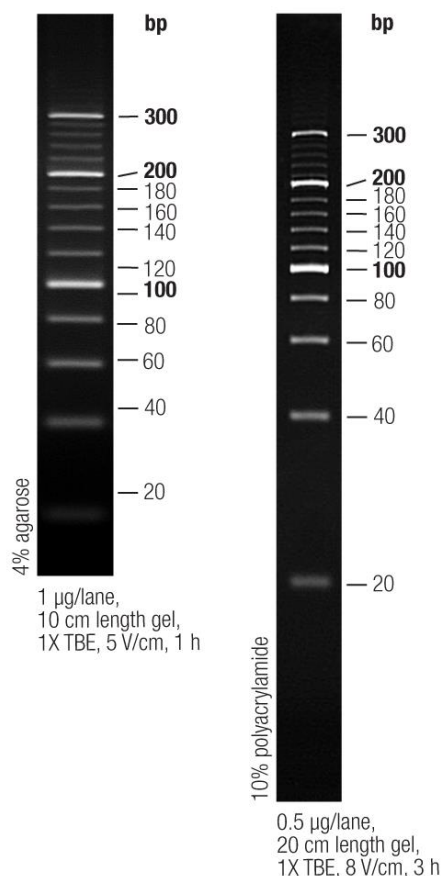
Step 1: Mix gently

Step 2: Load 1 µL per 1 mm gel lane

Recommendations

- Do not heat before loading.
- Dilute your DNA sample with the 6X Orange DNA Loading Dye (#R0631, supplied with the ladder). Mix 1 volume of the dye solution with 5 volumes of the DNA sample.
- Not designed for DNA quantification.
- Not designed for denaturing polyacrylamide gel.
- The O'RangeRuler 20 bp DNA Ladder may show additional bands of low intensity in agarose gels. These are circular form of the DNA ligation products.
- For DNA band visualization with SYBR[™] 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[™] use gel staining after electrophoresis to avoid aberrant DNA migration.

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Revision history: Pub. No. MAN0013046

Revision	Date	Description
D00	2025-04-08	Extended storage at room temperature to 24 months

Limited product warranty

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For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

The information in this guide is subject to change without notice.

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