

For life science research only.  
Not for use in diagnostic procedures.



# DNA Molecular Weight Marker IV

 **Version: 19**

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Fragment sizes: 0.07 to 19.3 kbp  
 $\lambda$ DNA and pSPTBM 20 DNA  $\times$  Sty I and Sau I digested

**Cat. No. 11 418 009 001**    50  $\mu$ g  
   200  $\mu$ l  
   50 gel lanes

**Store the product at  $-15$  to  $-25^{\circ}\text{C}$ .**

<b>1.</b>	<b>General Information .....</b>	<b>3</b>
1.1.	Contents .....	3
1.2.	Storage and Stability .....	3
	Storage Conditions (Product) .....	3
1.3.	Application .....	3
<b>2.</b>	<b>How to Use this Product .....</b>	<b>3</b>
2.1.	Before you Begin .....	3
	General Considerations .....	3
	Size distribution .....	3
<b>3.</b>	<b>Results .....</b>	<b>4</b>
	Typical analysis .....	4
<b>4.</b>	<b>Supplementary Information .....</b>	<b>5</b>
4.1.	Conventions .....	5
4.2.	Changes to previous version .....	5
4.3.	Trademarks .....	5
4.4.	License Disclaimer .....	5
4.5.	Regulatory Disclaimer .....	5
4.6.	Safety Data Sheet .....	5
4.7.	Contact and Support .....	5

# 1. General Information

## 1.1. Contents

Vial / bottle	Label	Function / description	Content
1	DNA Molecular Weight Marker IV	<ul style="list-style-type: none"> <li>Ready-to-use solution in 10 mM Tris-HCl, 1 mM EDTA, pH 8.0, (250 µg/ml).</li> <li>50 µg corresponds to 1 A<sub>260</sub> unit.</li> </ul>	1 Vial, 50 µg (200 µl)

## 1.2. Storage and Stability

### Storage Conditions (Product)

When stored at –15 to –25°C, the product is stable through the expiry date printed on the label.

Vial / bottle	Label	Storage
1	DNA Molecular Weight Marker IV	Store at –15 to –25°C. After thawing, store at +2 to +8°C. <b>⚠ Avoid repeated freezing and thawing.</b>

## 1.3. Application

Use DNA Molecular Weight Marker IV as a size standard for DNA in agarose gels.

# 2. How to Use this Product

## 2.1. Before you Begin

### General Considerations

#### Size distribution

Fragment mixture prepared by cleavage of equimolar amounts of λDNA and pSPTBM 20 DNA with restriction endonucleases Sty I and Sau I. The mixture contains 14 DNA fragments with the following base pair lengths (1 base pair = 660 daltons).

**i** Fragment lengths are derived from computer analysis of the λDNA and pSPTBM 20 sequences.

bp
19,329 7,743 5,526 4,254 3,140 2,690 2,322 1,882 1,489 1,150 925 697 421 74

### 3. Results

#### Improved visualization of the bands

The 19,329 and 4,254 bp fragments contain the cos-ends of lambda. These bands are visible after heating the marker at +65°C for 10 minutes, and quickly chilling on ice.

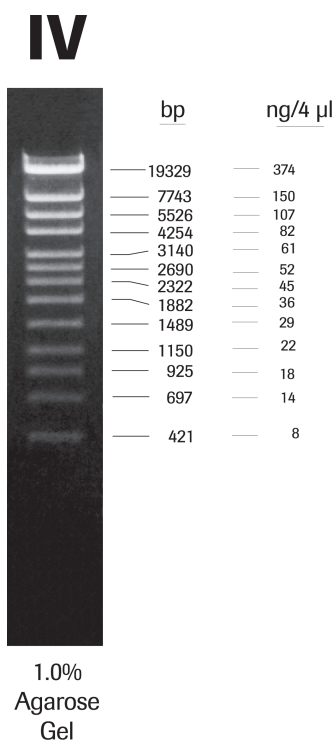
**⚠ Fragments containing the 12 base cos-sites of lambda may anneal upon storage. This leads to a gel pattern where one band is of lower intensity than expected (or absent completely) and a larger fragment has an increased intensity. Denaturation of the cos-sites can be performed immediately before loading the gel, by heating at +65°C for 10 minutes and quick-chilling on ice.**

## 3. Results

### Typical analysis

The DNA fragment mixture shows the typical pattern of 13 bands in agarose gel electrophoresis, see Figure 1.

- After gel electrophoresis of 1 µg of the fragment mixture in a 1% Agarose MP\* gel, 13 bands are visible.
- The smallest band is only visible in overloaded gels.



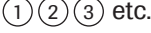



**Fig. 1:** Separation of 1 µg DNA Molecular Weight Marker IV on a 1% Agarose MP gel, stained with ethidium bromide.

## 4. Supplementary Information

### 4.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols	
	<i>Information Note: Additional information about the current topic or procedure.</i>
	<b>Important Note: Information critical to the success of the current procedure or use of the product.</b>
	Stages in a process that usually occur in the order listed.
	Steps in a procedure that must be performed in the order listed.
* (Asterisk)	The Asterisk denotes a product available from Roche Diagnostics.

### 4.2. Changes to previous version

Layout changes.  
Editorial changes.

### 4.3. Trademarks

All product names and trademarks are the property of their respective owners.

### 4.4. License Disclaimer

For patent license limitations for individual products please refer to:  
**List of biochemical reagent products.**

### 4.5. Regulatory Disclaimer

For life science research only. Not for use in diagnostic procedures.

### 4.6. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

### 4.7. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site.**

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

