

**Catalog No.:** D135HFL  
**Product Name:** PCR Master Mix HFL  
**Size:** 1000µl  
**Concentration:** 2X

**Description:** PCR Master Mix HFL is a special 2X PCR Master Mix, containing the engineered *Mega Thermal DNA Polymerase*, with over 1000 times higher fidelity compared to the regular *Taq* DNA polymerase. It is useful for high fidelity and long PCR experiments; and works well on difficult DNA templates. Amplified DNA contains blunt-ended DNA fragments. This 2X Master Mix is especially useful when cloning large DNA fragments at high fidelity; such as promoter and gene cloning, and other important DNA experiments.

The PCR Master Mix HFL is in a pre-optimized, convenient 2X format. For most of the PCR experiments with this 2X Master Mix, only template, primers and H<sub>2</sub>O will be needed. After the PCR cycles, the PCR reaction mixture can be directly loaded to the agarose gel to check the PCR results. The master mix is in green color, which will yield two colors, blue and yellow, when running agarose gel, serving as the gel-running indicators.

**Quality Control:** Every lot is tested as to the integrity of the overall performance of the reaction system under the defined conditions for the enzyme.

**Storage:** 4°C for up to one month, or -20°C for long term storage.

Related Products	Catalog No.
• 100bp DNA Ladder	M107
• 1Kb DNA Ladder II	M108
• DNA SafeStain	C138
• Standard-Agarose	A113

Contents:	1000µl	2X PCR Master Mix HFL
	1ml	25mM MgCl <sub>2</sub>

**1x Composition:** 1x PCR buffer, 1.5mM MgCl<sub>2</sub>, 200µM dNTPs, 2.5units/25µl of thermal DNA polymerases, PCR enhancer and enzyme stabilizers.

**Magnesium Chloride:** In general, 1.5mM MgCl<sub>2</sub> is recommended; this may vary with different conditions and primer sets. Some primers/templates may require adjustments for MgCl<sub>2</sub> concentration, which can be achieved as shown below:

Final MgCl <sub>2</sub> conc.	Additional 25mM MgCl <sub>2</sub> per 50µl reaction
1.5mM	-----
2.0mM	1.0µl
2.5mM	2.0µl

**Directions for use:** For a 50µl reaction, use the following as an example to start with, adjust as needed:

1. **Mix:**

2X PCR Master Mix HFL:	25µl
Primers:	2µl
DNA template:	1µl
Water:	22µl
<b>Total volume:</b>	<b>50 µl</b>

2. **PCR cycles:**

Step	Temperature	Time	Cycles
Initial Denature	95°C	1 min	1
Denature	95°C	0.5 min	30-35
Annealing	50-65°C	1 min	
Extension	72°C	1 min/kb	
Final Extension	72°C	7 min	1
Hold	4°C	∞	

*This product is for research use only.*