

# PR1MA™ High Fidelity Master Mix

## Description

PR1MA High Fidelity Master Mix is a fast, ultra-high fidelity PCR master-mix ideally suited to a wide range of DNA templates including the most challenging and complex DNA targets. The Master Mix is a ready-to-use 2X formulation which provides excellent sensitivity in low-copy number assays with 100X higher fidelity than Taq polymerase. The 2X master-mix is comprised of a modified derivative of pfu DNA Polymerase, and proprietary additives for trouble-free PCR reaction assembly and performance. PR1MA High Fidelity Master Mix produces DNA fragments up to 10 Kb with blunt ends.

- Optimized 2x Ultra High-Fidelity PCR Mix provides highly-sensitive PCR in a wide range of applications with 100x higher fidelity than Taq Polymerase.
- Provides excellent specificity in low-copy number assays and long PCR up to 10Kb with exceptional sequence accuracy.
- Resulting product is blunt ended

## Storage

Upon receipt, immediately store at -20°C. Avoid excessive freeze/thaw cycles. When stored as directed, product will retain its activity for 12 months from date of receipt. May also store at 4°C for up to one month.

## Limitations of Use

For research purposes only. Not intended for therapeutic or diagnostic use.

## Quality Control

PR1MA enzymes and reagents are tested under general assay conditions for activity, reproducibility, efficiency, heat activation, sensitivity, and absence of nuclease contamination and nuclease activity. This product is manufactured under a comprehensive quality management system, following ISO 9001:2008 standards.

## General Guidelines

### 1. Reaction Buffer

The 2X Mix is comprised of a highly sensitive, proof-reading DNA polymerase, 2 mM dNTPs, 6 mM MgCl<sub>2</sub>, and PCR additives for maximum efficiency, sensitivity and success with difficult amplicons. We do not suggest the use of additional PCR enhancers.

### 2. Template

For PCR of complex genomic DNA, 5ng - 500ng of template DNA may be added per reaction. Do not add more than 100ng of DNA for cDNA or plasmid DNA

### 3. Primers

Primers should have a predicted melting temperature of approximately 60°C, using default Primer 3 settings (<http://frodo.wi.mit.edu/primer3>). The final primer concentration should be 0.2µM to 0.6µM.

### 4. Annealing Temperature

An initial annealing temperature of 57°C is recommended. If nonspecific products or smearing appear, increase the temperature in 2°C increments. Alternately, a temperature gradient may be performed.

### 5. Extension

The polymerase performs optimally at 72°C. Extension time is dependent upon amplicon complexity and length. Thirty seconds per kilobase (Kb) is recommended for amplification from eukaryotic genomic DNA or cDNA

## Technical Support

For trouble-shooting and tech support, contact us at [tech@midsci.com](mailto:tech@midsci.com) or call 800 227-9997.

MidSci is not responsible for consequential or incidental damages, whether direct or indirect, resulting from use of this product. MidSci guarantees the performance of this product as described when used in accordance with these instructions.

## Reaction setup

Prepare the reaction as follows:

Component	25 µl reaction	Final concentration
PR1MA High Fidelity Master Mix	12.5 µl	1X
Forward Primer (10µM)	1.0 µl	400 nM
Reverse Primer (10µM)	1.0 µl	400 nM
Template DNA	<100ng cDNA, <500ng genomic	variable
PCR-grade water	to final reaction volume	

For other volumes, adjust the amount of each component accordingly.

Gently mix the solution. If needed, spin briefly in a microcentrifuge to bring reaction mixture to the bottom of the tube. Transfer samples to a thermal cycler begin cycling.

## Routine PCR Cycling

Step	Temperature	Time
Initial denaturation	95°C	1-2 minutes
	95°C	15 seconds
25-40 cycles	57°C to 67°C*	15 seconds
	72°C	30 seconds per Kb

\*Annealing temperature determined by user

## Package contents and reordering

PR1MA High Fidelity Master Mix is available in 200 and 500 reaction packages.

### PR1MA High Fidelity Master Mix, 200 units

Catalog number PR1001-HF-200  
Includes 2 x 1.25 mL for 200 x 25 µL reactions.

### PR1MA High Fidelity Master Mix, 500 units

Catalog number PR1001-HF-500  
Includes 2 x 1.25 mL for 500 x 25 µL reactions.

MidSci offers a full line of PCR enzymes and master mixes. Visit [www.midsci.com](http://www.midsci.com) for details.

## High Fidelity Master Mix

PR1001-HF-200  
200 x 25 uL Rxns

PR1001-HF-500  
500 x 25 uL Rxns

One Tube Formulation, 2X Concentration

Store at -20°C upon receipt

888-227-9997 [custserv@midsci.com](mailto:custserv@midsci.com)