

# MegaMix Diamond 2X Hot-Start Mastermix

P. Code	Reactions (20 µL)	Volume	Component	Description	Lot Number	Expiry
2MMDI-1	100	1 mL	MegaMix Diamond 2X Hot-Start Mastermix	2X Concentrated, hot-start Taq, 200 µM dNTPs and 3 mM MgCl <sub>2</sub> (final conc) in optimised buffer.		

## Applications

- Inhibitor rich PCR
- Hot-start PCR up to 6 kb
- Endpoint PCR
- qPCR (probe- or dye-based)
- Fast PCR
- Multiplex PCR
- Genotyping
- Amplification of GC- and AT-rich templates
- TA Cloning

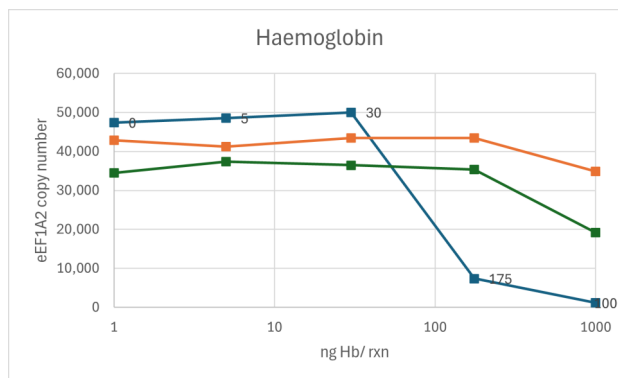
## Key Features

- Inhibitor resistant formulation.
- Hot-start polymerase in Microzone’s proprietary buffer gives unrivalled confidence in PCR amplifications.
- 2X Concentrated format.
- Broad range of templates and conditions.
- Extremely stable—can be freeze thawed many times.
- Easy set up and PCR optimisation.

## Product Description

MegaMix Diamond is an advanced molecular biology reagent tailored for efficient PCR amplification. It is specifically designed to excel in multiplex PCR applications while offering exceptional resistance to common PCR inhibitors, including haemoglobin, collagen and urea. It’s innovative formulation simplifies PCR workflows and ensures reliable results across a broad range of PCR applications.

The 2X mix contains hot-start Taq DNA polymerase, 200 µM dNTP and 3 mM MgCl<sub>2</sub> (final conc) in Microzone’s proprietary enhancing buffer. MegaMix Diamond uses a superior sensitive hot-start DNA polymerase. The polymerase becomes active upon heating at 95°C, ensuring a highly specific and sensitive amplification, removing background and primer dimer formation. MegaMix Diamond boasts excellent accuracy and produces A-tailed products suitable for ligating into TA cloning vectors.



**MegaMix Diamond and MegaMix Ruby demonstrate resistance to haemoglobin.** Amplification of the eEF1A2 gene in the presence of increasing concentrations of haemoglobin. Orange, green and blue datasets show MegaMix Diamond, MegaMix Ruby and a comparator mastermix, respectively.

## Protocol

This products is to be used as follows.

Thaw all reagents completely and mix well before use.

Prepare a master mix as described in the table below. This reaction can be scaled according to the quantity of reactions required.

Mix gently, avoiding bubbles, centrifuge if necessary.

Include a no template control and positive control as required.

Components	Volume
MegaMix Diamond 2X Hot-Start Mastermix	10 µL
Primers	x µL
Template	y µL
Just Water (Molecular grade water)	z µL (up to 20 µL)

## Thermocycling

Transfer the reactions to the thermal cycler and set as follows:

Cycles	Temperature	Time
1	95°C	5 min
25-40	95°C	15 sec
	55-65°C	15 sec
	72°C	15 sec

Annealing temperature (55-65°C) may require optimisation depending on the specific primers in use.

The run time can be shortened by optimising the steps of the thermocycling profile. The extension time is to be increased depending on amplicon length, use 15 sec/kb.

For research use only

## Product Handling

### Storage

To ensure the quality of the product until the expiry date keep at the recommended storage temperature and limit exposure to light.

### Contamination Control

To prevent erroneous results ensure work environment is free of contamination by cleaning your workstation and equipment with a DNA decontaminant daily, wear gloves, use sterile tubes and filter pipette tips.

Simple | Effective | Efficient