

HoppeSyler 2X M4 Taq Master Mix with Dye

Ready-to-use 2X hot start master mix · includes dNTPs, MgCl₂ & loading dye

Cat. M0802-020

DESCRIPTION

HoppeSyler 2X M4 Taq Master Mix with Dye is a ready-to-use 2X master mix formulated for fast PCR, high yield and strong specificity in standard endpoint workflows. It contains M4 Taq DNA Polymerase, dNTPs, MgCl₂, reaction buffer, stabilizers and a blue tracking dye in a single tube, reducing hands-on time and pipetting error. M4 is supplied only in hot start format: polymerase activity is suppressed during reaction setup and released under cycling (hot start is inherent to the engineered enzyme; no separate activation step), which reduces non-specific amplification and primer-dimer formation. Suited to rapid, reliable PCR from bacterial colonies, overnight cultures, crude-lysate genotyping samples, soil-associated samples and other routine templates; reactions load directly onto the gel. Developed and manufactured in Canada.

FEATURES

- Hot start in a ready-to-use 2X format
- Fast cycling: 15 s per kb extension
- Tolerates common PCR inhibitors, including humic acid
- Direct PCR from bacterial colonies and cultures
- Blue tracking dye for direct gel loading

SPECIFICATIONS

Enzyme	M4 Taq DNA Polymerase (engineered hot start, recombinant)
Format	2X master mix (includes dNTPs and MgCl ₂)
Optimal reaction volume	50 µL
MgCl ₂ at 1X	2.5 mM
dNTPs at 1X	0.2 mM each
Extension rate	15 s / kb
Loading dye	Blue (bromophenol blue; runs at 300–500 bp depending on gel percentage)
Storage	–20 °C

KIT CONTENTS

COMPONENT	200 REACTIONS
2X M4 Taq Master Mix with Dye	4 × 1.25 mL
GC Enhancer	1 × 1 mL

GC Enhancer is provided for GC-rich and difficult templates. Store all components at –20 °C.

PURITY & QUALITY

Lot-release testing: the polymerase is tested for DNase activity, mycoplasma DNA, host genomic DNA and PCR activity before formulation; each master mix lot is tested before release.

ORDERING INFORMATION

CAT. NO.	REACTIONS	VOLUME
M0802-020	200	5.0 mL

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DOCUMENT	VERSION	EFFECTIVE	PAGE
HSS-MM03-DS	1.0	2026-09-03	1 of 2

HoppeSyler 2X M4 Taq Master Mix with Dye

Standard 50 µL PCR · ready-to-use 2X hot start master mix (with loading dye)

STEP 1
Set up reaction

STEP 2
Run program

STEP 3
Analyze

1 REACTION SETUP

COMPONENT	VOLUME	FINAL CONC.
Template DNA (up to 500 ng)	up to 10 µL	–
10 µM forward primer	0.5–2.5 µL	100–500 nM
10 µM reverse primer	0.5–2.5 µL	100–500 nM
2X M4 Taq Master Mix with Dye	25 µL	1X
GC Enhancer (optional)*	5–15 µL	–
Nuclease-free water	to 50 µL	–
Total reaction	50 µL	

*GC Enhancer helps amplify difficult templates and suppress non-specific products; determine the volume empirically for each template and primer pair.

Assemble on ice. **Mix** by pipetting several times or a brief vortex, **centrifuge** briefly to collect, then proceed to the amplification program.

2 THERMOCYCLING PROGRAM

	STEP	TEMP.	TIME	CYCLES
1	Denaturation	94 °C	30 s	20–30
	Annealing	55–60 °C	10–30 s	
	Extension	72 °C	15 s / kb	
2	Final extension	72 °C	7 min	1
3	Hold	4 °C	∞	1

Begin with an initial denaturation of 94 °C for 3 min. Hot start is inherent to the enzyme; no separate activation step is required. Set extension time to 15 s per kb of expected product. Annealing 10–30 s suits most primer pairs.

3 GEL ANALYSIS

- Centrifuge the completed reaction briefly.
- Analyze the products by agarose gel electrophoresis.

OPTIMIZATION

- Loading dye:** the master mix contains a blue tracking dye that runs at 300 to 500 bp depending on gel percentage; load reactions directly onto the gel.
- Hot start:** reactions can be assembled at room temperature; the enzyme stays inactive until cycling begins. Hot start is inherent to the enzyme, with no separate activation step.
- Direct PCR:** pick a colony directly into the reaction, or add 0.5–4 µL of overnight culture as template.
- Annealing:** start ~5 °C below primer T_m ; 55–60 °C works for most pairs.

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PAGE
2 of 2