

**Description**

Taq Master Mix (2x) is an optimized ready-to-use PCR mixture of Taq DNA Polymerase, PCR buffer, MgCl<sub>2</sub> and dNTPs. Taq Master Mix (2x) contains all components for PCR, except DNA template and primers.

**Content**

Ref No.	S101605	101605	101625	color
Taq Master Mix (2x) *	Sample size	200 reactions	5x 200 rcts	white
MgCl <sub>2</sub> 100 mM	1 mL	1 mL	5x 1 mL	green
PCR Water	1.8 mL	2x 1.8 mL	10x 1.8 mL	transparent
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\* Contains Taq DNA Polymerase (recombinant), PCR Buffer with 4 mM MgCl<sub>2</sub> and dNTPs 400 µM each.

**Applications:** Taq Master Mix (2x) is suitable for a wide range of PCR methods like qPCR, Real-Time PCR and classic PCR. It can be used for regular PCR with a fragment-size up to 5 kb.

**Concentration:** 2x

**Sensitivity:** high

**Unit definition:** One unit of activity is defined as the amount of enzyme required to incorporate 10 nmoles of dNTP into acid-insoluble DNA fraction in 30 minutes at 72 °C.

**Additionally provided:** 1 tube MgCl<sub>2</sub> (100 mM)

**Recommended MgCl<sub>2</sub> concentration:** 1.5 mM – 6 mM

**Quality control**

- 98% protein homogeneity in 10% SDS-PAGE
- No detectable exo-/endonuclease activities
- PCR amplification tests with different templates

**Storage condition:** -20 °C

**Pipetting scheme and thermocycler protocol:**

Components	Volume / 25 $\mu$ L PCR-Reaction	Final concentration
2X PCR Master Mix	12.5 $\mu$ L	1X
Forward Primer	variable	0.1 – 1 $\mu$ M
Reverse Primer	variable	0.1 – 1 $\mu$ M
Template DNA	variable	100 pg – 1 $\mu$ g
Sterile dest. water	up to 25 $\mu$ L	-

**It's strongly recommended to settle-up all reactions on ice to avoid formation of unspecific products or primer-dimers formation.**

If MgCl<sub>2</sub> is not added to the reaction mixture, final concentration of MgCl<sub>2</sub> in the reaction mixture will be 2 mM.

**Thermocycler protocol**

step	time	temperature
initial denaturation	2 minutes	94 °C
Number of cycles: 25 - 35		
denaturation	10 - 30 seconds	94 °C
annealing	20 - 30 seconds	55 - 68 °C *
extension	1 minute	72 °C

\* Usually the optimal annealing temperature is 5 °C below the melting temperature of the primers

**Notes:**

Program the cycler according to the manufacturer's instructions.

Each program should start with an initial denaturation step at 94 °C for 2 to max. 5 min.

Recommended elongation time is 1 min per 1 kb of target.

For maximum yield and specificity, temperatures (annealing) and cycling times should be optimized for each new template target or primer pair.