

Data sheet

This data sheet provided for information only

5X MasTaq^{CF}-2025**RESEARCH USE ONLY****Ready-to-use MasterMix for DNA amplification**

Cat.No.	Pack	Conc.
MST5-100	100 rnx	5 X
MST5-500	500 rnx	5 X

Stability:

5X MasTaq^{CF} stable for 24 months at -20°C, **or** for 6 months at +4°C storage without freezing.

CONTENT:**1X: SmarTaq** Polymerase**0.2mM** each of dNTP's**2.0 mM** MgCl₂16,6mM (NH₄)₂SO₄; 67,0mM This-HCL (pH 8.8 at 25°C); 0.01% Tween-20**Stabilizer/enhancer****DESCRIPTION**

5X MasTaq^{CF} is a ready-to-use premix of all components for amplification of target DNA, contains **stabilizer/enhancer**, which improves thermostabilization of enzyme during PCR amplification and storage.

5X MasTaq^{CF} contains antibodies- blocked Taq polymerase (**SmarTaq**), which is not active at ambient temperature (during PCR set-up) and activated automatically during the first PCR cycle at the temperature >70°C.

It's no need for prolonge heating for activation of enzyme for PCR.

5X MasTaq^{CF} is optimized for PCR with complex, **low-copy number DNA templates, multiplex PCR, "real-time" PCR** allows to improve specificity of your PCR by titration of MgCl₂ (not included) concentration.

You can use an appropriate volume of **5X MasTaq^{CF}** for amplification reaction, depending on total final reaction volume.

Just place it into the tube/plate adds primers and template of choice mix all components and run PCR.

After PCR reaction running mix 5-10µl of reaction mixture with appropriate volume of "Loading Buffer" (for non-"real-time" mode PCR), apply to the gel and run electrophoresis.

5X MasTaq^{CF} Mix contains less than 1% of GLYCEROL in 10ul of Mix.

Recommended PCR assay

	50µl PCR assay	Final Conc.
10µl	5X MasTaq^{CF}-2025	1X
0.2-1µM	each Primer	
Variable*	DNA Template	
To 50µl	PCR Grade Water	

*- depending on DNA template initial concentration

APPLICATIONS:

- Routine PCR
- Primer extension
- Real-Time PCR
- Low-copy PCR (SmarTaq Polymerase)
- Multiplex PCR

STORAGE CONDITIONS :

Store **5X MasTaq^{CF}** at -20°C (for long term storage).

SHIPPING CONDITIONS:

Should be shipped at ambient temperature

For land distance shipments preferably in **Blue Ice**

General Protocol for amplification with 5X MasTaq^{CF}-2025

Add and mix the following components:

Component	50 μ L reaction	25 μ L reaction	Final concentration
PCR grade Water	Up to 50 μ L	Up to 25 μ L	
5X MasTaq^{CF}-2025	10 μ L	5 μ L	1X
Primers			0.2-0.5 μ M each
Template DNA	optionally	optionally	

In some cases we recommend to optimize Mg concentration in the range 2.0-3.0mM
We recommend to use 25 μ l reaction for the PCR with **5X MasTaq^{CF}**

Cycling Protocol:

Cycle step	3-step amplification		Cycles
	T ^o C	Time	
Initial	95 ^o C	2 min	1
Denaturation			
Denaturation	95 ^o C	15-30 S	
Annealing	55-68*	15-30 S	25-35
Extension	72 ^o C	30-60 S/Kb**	
Final extension	72 ^o C	5-10 min	1
	4 ^o C	hold	

*Optimal T_m for the primer pair recommended as T_m of the lower primer, for the standard oligos <20nt.

**For non-complex DNA templates (plasmid DNA, phage DNA, BAC clone) extension time could be reduced up to 15-30 sec/Kb.

For complex DNA templates (human DNA) strongly recommended to apply Extension time as 60 sec/Kb