Product Information Sheet

Product Name: FlashTaq HotStart DNA Polymerase with 10X Reaction (MgCl2) Buffer*
Concentration: 5U/µl
Ordering Information:

Item Number	Units	Number of tubes	Total Volume
SS-FT-MG-25	25	FlashTaq HotStart DNA Polymerase – 25 units (1), 10X Reaction (MgCl2) Buffer -0.25mL (1)	FlashTaq HotStart DNA Polymerase – (5µL), 10X Reaction (MgCl2) Buffer - (0.25mL)
FT-MG-100	100	FlashTaq HotStart DNA Polymerase – 100 units (1), 10X Reaction (MgCl2) Buffer - 1ml (1)	FlashTaq HotStart DNA Polymerase - (20µL), 10X Reaction (MgCl2) Buffer - (1mL)
FT-MG-500	500	FlashTaq HotStart DNA Polymerase – 500 units (1), 10X Reaction (MgCl2) Buffer - 1ml (2)	FlashTaq HotStart DNA Polymerase - (100µL), 10X Reaction (MgCl2) Buffer -(2mL)
FT-MG-1000	1000	FlashTaq HotStart DNA Polymerase – 500 units (2), 10X Reaction (MgCl2) Buffer - 1ml (4)	FlashTaq HotStart DNA Polymerase - (200µL), 10X Reaction (MgCl2) Buffer – (4mL)

Storage and Handling:
Store at -20^{0}C upon arrival.

Product Description:
Empirical's FlashTaq HotStart DNA Polymerase is a chemically modified Taq DNA polymerase designed for reducing non-specific DNA amplification due to primer-dimer formation. FlashTaq is completely suppressed prior to activation, and regains full enzymatic activity in only 2 min at 94°C. Taq DNA Polymerase gene is isolated from *Thermus aquaticus* YT1 and expressed in *E. coli*.
Empirical FlashTaq HotStart DNA Polymerase is supplied in a storage buffer containing: 20mM HEPES (pH 7.9), 100mM KCl, 0.1mM EDTA, 1mM DTT, 50% (v/v) Glycerol, and other stabilizers.

10X PCR Reaction Buffer:
Empirical Flash Taq DNA Polymerase is supplied with a specially optimized reaction buffer containing: 100mM Tris-HCl (pH 8.4), 500mM KCl, 15mM $MgCl_2$
This Buffer is supplied in a 10X concentration and should be diluted for use.

Reaction Set-Up for a 50uL Reaction:

Component	Volume	Final Concentration
10X Reaction (MgCl2) Buffer	5 µl	1X
Upstream Primer, 10µM	1.0-5.0 µl	0.2-1.0µM
Downstream Primer, 10µM	1.0-5.0 µl	0.2-1.0µM
dNTP, 10mM	1-4 µl	200-800µM
DNA Template	X µl	>25ng DNA
FlashTaq HotStart DNA Polymerase	0.2-1 µl	1U-5U
Nuclease Free Water to Volume	to 50 µl	N.A.

* This product is for "Research Use Only. Not for use in diagnostic procedures".
For MSDS and Certificate of Analysis please visit www.empiricalbioscience.com

Thermal cycling conditions: The following general cycling conditions are recommended but can vary depending on the template and primers being used.

Cycling Step	Temperature	Holding Time	Cycles
Initial Denaturation and FlashTaq HotStart Activation	94^{0}C	30 sec - 2min	1
Denaturation	94-96^{0}C	15 - 30sec	20-30
Annealing°	55-65^{0}C	15 - 60sec	
Extension	70-72^{0}C	1min/kb	
Final Extension	70-72^{0}C	0-10min	1

°Annealing will depend on primer length and composition. Generally, begin 5°C below primer T_m.