Product Information Sheet

Product Name: FASTaq™ HotStart DNA Polymerase with 10X FASTaq™ PCR Buffer*

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Concentration:

FASTaq™ HotStart DNA Polymerase: 7U/µl,
FASTaq™ PCR Buffer: 10X

Storage and Handling:

Upon arrival store at -20°C until provided expiration date. Minimize Freeze Thaw to avoid loss of performance.

Product Description:

FASTaq™ HotStart DNA Polymerase:
Chemically modified Taq DNA polymerase designed for reducing non-specific DNA amplification due to primer-dimer formation. FASTaq™ is completely suppressed prior to activation, and regains full enzymatic activity after 10 min at 95°C. Taq DNA Polymerase gene is isolated from *Thermus aquaticus* YT1 and expressed in *E. coli*.
Empirical FASTaq™ HotStart DNA Polymerase is supplied in a storage buffer containing: Tris HCl, KCl, EDTA, DTT, Glycerol, and other stabilizers.

10X FASTaq™ PCR Buffer:
Specially optimized reaction buffer containing: Tris-HCl, KCl, $MgCl_2$, and $(NH_4)_2SO_4$. 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 FASTaq™ PCR 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
FASTaq™ HotStart DNA Polymerase	0.2-2 µl	1U-10U
Nuclease Free Water to Volume	to 50 µl	N.A.

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 FASTaq™ HotStart Activation	95˚C	10min	1
Denaturation	94-96˚C	15 - 30sec	20-30
Annealing#	55-65˚C	15 - 60sec	
Extension	70-72˚C	1min/kb	
Final Extension	70-72˚C	0-10min	1

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

***This product is intended for Research Use Only. This product is manufactured under ISO13485:2016 Quality System Requirements and is available for use as a Raw Material for use in IVD applications. Please contact Empirical Bioscience for further details.**

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