Product Information Sheet

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

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

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

Product Description:
The Taq DNA Polymerase gene a thermos stable enzyme isolated from *Thermus aquaticus* YT1 and expressed in *E.coli*. The enzyme consists of a single polypeptide with a molecular weight of 94 kDa. Taq DNA Polymerase possess a 5' → 3' polymerase activity, endonuclease activity, and will synthesize DNA products having dA overhangs on the 3' ends.
Empirical Taq 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 Reaction (MgCl2) Buffer:
Empirical 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	>0.5ng DNA
Taq DNA Polymerase, 5U/µl	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	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.