



# DATA SHEET

## EpisoZYme Pfu DNA Polymerase with Pfu Buffer

Cat. No.	Pack Size	Conc.
EZ-P01S	200U	2U/ $\mu$ L
EZ-P01M	500U	2U/ $\mu$ L
EZ-P01L	1000U	2U/ $\mu$ L

EpisoZYme Pfu DNA polymerase is a recombinant thermostable DNA polymerase that has been purified from *Escherichia coli* carrying the Pfu polymerase gene of *Pyrococcus furiosus*. Pfu DNA polymerase exhibits the lowest error rate of any thermostable DNA polymerase studied. It is up to ten-fold more accurate than Taq DNA polymerase. Consequently, Pfu DNA polymerase is useful for polymerization reactions requiring high-fidelity synthesis.

### Reagents Provided

- **Pfu DNA Polymerase in Storage Buffer** (100 mM KCl, 10 mM Tris-HCl: pH 7.4, 0.1 mM EDTA, 1 mM DTT, 0.5% Tween 20 and 50% glycerol)
- **10x Reaction Buffer:** 200 mM Tris-HCl (pH 8.8), 100 mM KCl, 100 mM  $(\text{NH}_4)_2\text{SO}_4$ , 1% Triton X-100, 1 mg/ml BSA.
- **10x Reaction Buffer (+Mg):** 200 mM Tris-HCl (pH 8.8), 100 mM KCl, 100 mM  $(\text{NH}_4)_2\text{SO}_4$ , 2mM  $\text{MgSO}_4$ , 1% Triton X-100, 1 mg/ml BSA)
- **20 mM  $\text{MgSO}_4$  Solution**

### Recommended PCR Reaction Mix

10x Pfu Buffer	2.5 $\mu$ l	5 $\mu$ l	1X
2.5 mM dNTPs	2 $\mu$ l	4 $\mu$ l	200 $\mu$ M
10 $\mu$ M For. Primer	1.25 $\mu$ l	2.5 $\mu$ l	0.5 $\mu$ M (0.2–1 $\mu$ M)
10 $\mu$ M Rev. Primer	1.25 $\mu$ l	2.5 $\mu$ l	0.5 $\mu$ M (0.2–1 $\mu$ M)
Pfu DNA Poly. (1U/ $\mu$ l)	0.25 $\mu$ l	0.5 $\mu$ l	0.5 units / 50 $\mu$ l PCR
25 mM $\text{MgSO}_4$	2 $\mu$ l	4 $\mu$ l	2 mM ( 1.5-2.5 mM)
Template DNA	variable	variable	<100 ng
Nuclease-Free Water	to 25 $\mu$ l	to 50 $\mu$ l	

### Application

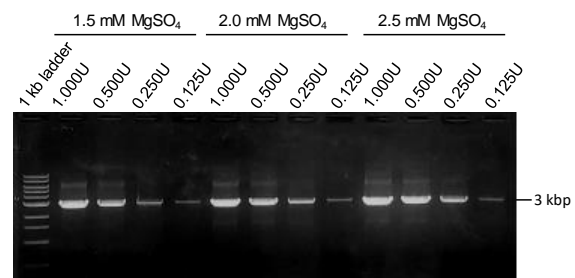
- Primer Extension
- Colony PCR
- Microarray Analysis

### Thermocycling Conditions for a Routine PCR

Step	Temp.	Time
Initial Denaturation	95 $^{\circ}\text{C}$	1 m
25-30 Cycles	95 $^{\circ}\text{C}$ 45-60 $^{\circ}\text{C}$ 74 $^{\circ}\text{C}$	15 s 10-30 s 1 m/kb
Final Extension	74 $^{\circ}\text{C}$	5 m
Hold	r. t.	

### Quality Control Assays

PCR; cDNA cloned into a plasmid DNA, 30 cycles of PCR amplification of 5 ng template DNA with Pfu DNA Polymerase in the presence of 200  $\mu$ M dNTPs and 0.2  $\mu$ M primers in standard Pfu reaction buffer results in the expected 3 kbp product.



### Safety warnings and precautions

This product is designed for research purposes and *in vitro* use only. According to common laboratory safety practice, it is recommended to wear protective clothing, gloves and safety glasses.

