Product Information Sheet and Protocol

Product Name: Integrity High Fidelity Polymerase™ with 10X Integrity Reaction Buffer*
Concentration: 2 Units/µL
Ordering Information:

Item Number	Units	Product Component Information
HF-RB-MG-100	100	HF-100: 1 tube 50µL/tube HF-RB-1.25mL: 1 tube 1250 µL/tube MgSO4-100-1mL: 1 tube 1mL/tube
HF-RB-MG-200	200	HF-100: 2 tubes 50µL/tube HF-RB-1.25mL: 1 tube 1250µL/tube MgSO4-100-1mL: 1 tube 1mL/tube
HF-RB-MG-500	500	HF-500: 1 tube 250µL/tube HF-RB-1.25mL: 2 tubes 1250µL/tube MgSO4-100-1mL: 1 tube 1mL/tube
HF-RB-MG-1000	1000	HF-500: 2 tubes 250µL/tube HF-RB-1.25mL: 4 tubes 1250µL/tube MgSO4-100-1mL: 1 tube 1mL/tube
SS-HF-RB-MG-25	25	SC-HF-25: 1 tubes 12.5µL/tube SC-HF-RB-0.25mL: 1 tubes 250µL/tube SC-MgSO4-100-0.1mL: 1 tube 100µL/tube

Storage and Handling:
Store at -20°C upon arrival.

Product Description:
Empirical's Integrity High Fidelity Polymerase™ is a high-fidelity DNA polymerase isolated from *Pyrococcus GBD* and expressed in *E.coli*. The Integrity enzyme contains an integral 3'→5' proofreading exonuclease activity that increases the fidelity of Integrity about six fold greater than Taq alone. Integrity is extremely thermostable at temperatures of 95°C to 100°C and is free off contaminating endonucleases.

Empirical's Integrity High Fidelity Polymerase™ is supplied with a 10X Reaction Buffer and 100mM Magnesium Sulfate.

Reaction Set-up: For a 50uL reaction

Component	Volume	Final Concentration
10X Integrity Reaction Buffer	5 µl	1X
Upstream Primer, 10µM	1.0-5.0 µl	0.4-1.0µM
Downstream Primer, 10µM	1.0-5.0 µl	0.4-1.0µM
dNTP, 10mM	2-4 µl	400-800µM
DNA Template	X µl	>25ng DNA
Integrity High Fidelity Polymerase	0.25-0.5uL	0.5U-1U
Nuclease Free Water	to 50 µl	N.A.

Magnesium Concentration can be increased with provided solution.

* 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	95°C	2min	1
Denaturation	94-96°C	15-30sec	30
Annealing**	55-65°C	30-60sec	
Extension	70-72°C	1min/kb	
Final Extension	70-72°C	5-10min	1

** In general annealing temperatures tend to be higher than that for Taq DNA Polymerase. Annealing temperature is determined by melting temperature of primer pair being used.