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## Product Description

The Frontier Genomics SharkaTAQ™ HiFi Polymerase is a unique blend of Standard SharkaTAQ Hot Start DNA polymerase and a proof-reading polymerase with 3' to 5' exonuclease activity.

SharkaTAQ™ HiFi exhibits optimal activity at 75°C and a half-life of approximately 45 min at 94°C. SharkaTAQ Hot Start is inactivated using a proprietary method. The inactive state completely prevents non-specific primer annealing and the formation of primer-dimers during setup.

SharkaTAQ™ enzymes are highly purified by column-chromatography and are free of any contaminating exonuclease and endonuclease activities.

## Key Features

- Use for sequencing and cloning applications or in any situation where low error rate is desirable.
- Low error rate of only 4 nucleotides per 1 million nucleotide incorporation events
- Increased reproducibility and throughput, decreased risks of contamination
- Generate amplicons over 10 kb on genomic templates or 40 kb on less complex DNA
- Robust enzyme ideal for any PCR application requiring low error rate

## Applications

Use for sequencing and cloning applications or in any situation where low error rate is desirable.

## Specifications

Concentration: 5 Units/ uL

Unit Definition: One unit is defined as the amount of enzyme that incorporates 10 nanomoles of dNTPs into acid-insoluble form in 30 minutes at 72°C.

## Kit Components

- SharkaTAQ Hot Start DNA polymerase + proof-reading polymerase (5U/ ul).
- 10X PCR Buffer containing 18mM MgCl<sub>2</sub> + detergent
- Includes MgCl<sub>2</sub> for further assay optimization & DMSO for GC rich sequences

Component	Final Concentration	Volume (20uL)	Volume (50uL)
10X Buffer	1X	2 µl	5 µl
dNTPs (2.5mM each)	500 µM	4 µl	10 µl
Forward primer (10 µM)	0.8 µM	1.6 µl	4 µl
Reverse primer (10 µM)	0.8 µM	1.6 µl	4 µl
SharkaTAQ Hifi (5U/µL)	0.05 U / µl	0.2 µl	0.5 µl
MgCl <sub>2</sub> (50mM)	2.5 mM	0.28 µl	0.7 µl
Template DNA	As required	As required	As required
H <sub>2</sub> O		QS to 20 µl	QS to 50 µl
<b>TOTAL Volume</b>		<b>20 µl</b>	<b>50 µl</b>

Cycling conditions:

(1) 94°C 15 minutes

(2) 94°C 30 sec

(3) 57°C 1 minute

(4) 68°C 1min/kb for first 20  
cycles and 2 min/kb for

last 15 cycles

Steps (2) – (4) are repeated 34 times