

**New!**

# Phire<sup>®</sup>

## Hot Start II DNA Polymerase

**Hot start –  
quick finish**

 **FINNZYMES**  
TOOLS FOR MOLECULAR BIOLOGY

# Phire®

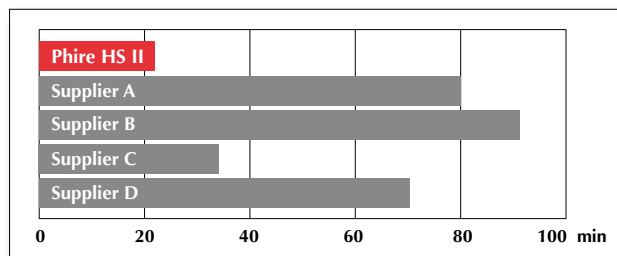
## Hot Start II DNA Polymerase

### Speed and specificity for PCR

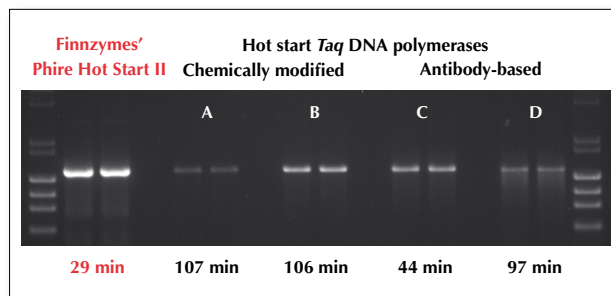
Finnzymes' new Phire® Hot Start II DNA Polymerase outperforms every *Taq*-based hot start polymerase on the market. This polymerase is significantly faster, extremely robust, and also capable of amplifying long DNA fragments with high yields. These features are achieved through advanced protein engineering of the polymerase. Phire Hot Start II DNA Polymerase incorporates a dsDNA-binding domain which allows short extension times (10-15 s/kb), improves yields, and increases fidelity 2-fold compared to *Taq* DNA polymerase. In addition, the unique hot start technology allows complete reactivation of the enzyme in "zero-time" at standard cycling temperatures. This combination of features makes the polymerase an ideal solution for routine and high throughput PCR applications. Phire Hot Start II DNA Polymerase delivers superior performance in conventional thermal cyclers as well as in fast instruments such as the Piko® Thermal Cycler from Finnzymes.

### Advantages

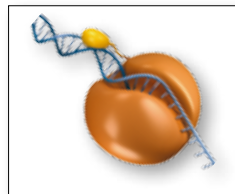
- **Quick hot start:** No reactivation step
- **Fast enzyme:** Amplify 4 times faster than with hot start *Taq*
- **Robust:** Minimal reaction optimization due to high inhibitor tolerance
- **High yields:** Abundant products due to high efficiency
- **Longer PCR products:** Amplify significantly longer DNA fragments than with any hot start *Taq*



**Complete PCR protocols in less than half the time.** A 600 bp fragment from human genomic DNA was amplified with hot start DNA polymerases from five major suppliers according to each supplier's recommendations. Due to the unique hot start technology and a special dsDNA-binding domain in the Phire Hot Start II DNA Polymerase, the PCR protocol was completed up to four times faster than with *Taq* DNA polymerases utilizing chemically modified or antibody-based hot start technologies (suppliers A-D). The instrument used in the experiment was Piko Thermal Cycler from Finnzymes.



**Abundant yields in shorter time.** A 1.5 kb fragment from the human Cathepsin K gene was amplified with five different hot start DNA polymerases according to suppliers' recommendations. Phire Hot Start II DNA Polymerase amplified high amounts of specific PCR product in just 29 minutes. In contrast, the PCR protocols for hot start *Taq* DNA polymerases from four major suppliers (A-D) were substantially longer and resulted in lower product yields.



**Innovative design for improved performance.** Phire Hot Start II DNA Polymerase is constructed by fusing a novel DNA polymerase (orange) and a small dsDNA-binding protein (yellow). This technology dramatically increases the processivity of the polymerase thus improving its overall performance.

### Ordering information

Phire® Hot Start II DNA Polymerase	
F-122S	200 reactions (50 µl each) or 500 reactions (20 µl each)
F-122L	1000 reactions (50 µl each) or 2500 reactions (20 µl each)

### Improve PCR performance with Finnzymes' instruments and vessels



Unique Piko Thermal Cyclers and ultra thin wall UTW® tubes and plates provide additional speed and reliability for PCR.