

Datasheet

Pfu Plus Polymerase

Sileks

Sileks GmbH

Phone: +49 76328231964

email: info@sileks.de

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Pfu Plus Polymerase

Cat. No.	Pack size	Conc.	Supplied buffer
E051	200 u	5 u/μl	Pfu Buffer with Mg ²⁺ Pfu Buffer without Mg ²⁺ 25 mM MgCl ₂

Description:

Pfu Plus polymerase is a thermostable recombinant enzyme with mol. weight of approx. 92 kDa. Natural source of the enzyme is hyperthermophilic archaeum *Pyrococcus furiosus*. The enzyme has its activity maximum at 70-74°C (though it functions at temperatures higher than 25°C). Half-life time at 94°C is not less than 30 min. Pfu Plus polymerase catalyzes DNA synthesis in 5'→3' direction in presence of Mg²⁺ ions at appropriate pH. It has also 3'→5' endonuclease activity (so-called "proofreading activity"). Presence of 3'→5' endonuclease activity makes the enzyme suitable for PCR that requires high-fidelity product synthesis. When put into optimal conditions, *Pfu Plus* makes less errors than any other thermostable polymerase. Amplicons synthesized with *Pfu Plus* are blunt-ended (no overhanging A at the ends). It allows for cloning of obtained product without additional treatment. Optimal recommended size of PCR product synthesized with *Pfu Plus* is 2000 bp.

Specific feature of *Pfu Plus polymerase* is 3'→5' endonuclease activity that makes the enzyme "slow". Another features are decreased sensitivity and productivity on low copy templates.

Applications:

- high-fidelity PCR;
- amplification for cloning and other applications, requiring high fidelity of synthesis;
- DNA labeling with various nucleotides (radioactive and non-radioactive labeled).

Buffers:

- **x10 Buffer with Mg²⁺:**
700 mM Tris-HCl, pH 8.6 / 25°C, 166 mM (NH₄)₂SO₄, 25 mM MgCl₂
- **x10 Buffer without Mg²⁺:**
700 mM Tris-HCl, pH 8.6 / 25°C, 166 mM (NH₄)₂SO₄

Concentration:

5 u/μl

Unit definition:

One unit is defined as the amount of enzyme required to catalyze the incorporation of 10 nmol of dNTPs into an acid-insoluble form in 30 minutes at 70 °C.

Quality control:

The enzyme is tested for the absence of nicking activities, of endo-, exodeoxyribonucleases and ribonucleases. Activity and thermostability tested in PCR.

Storage conditions:

Store at -20 °C

Shipping conditions:

No special conditions required.

Safety and precautions:

Avoid contact with eyes, skin and clothing. In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes and seek medical advice. Make the rinsing more thorough by separating eyelids with fingers. If symptoms such as redness and irritation persist, seek medical attention. In case of contact with skin, immediately wash the skin with soap and plenty amounts of water.