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# Tth Inorganic Pyrophosphatase

Pyrophosphate phosphohydrolase (E.C. 3.6.1.1) from *Thermus thermophilus*

Product	Cat#	Package size
Tth Inorganic Pyrophosphatase, thermostable	M3013.0250	250 units
Tth Inorganic Pyrophosphatase, thermostable	M3013.1000	1000 units

## Product description

Native thermostable Tth inorganic pyrophosphatase is purified from *Thermus thermophilus* and is a hydrolase specific for inorganic diphosphate. Tth inorganic pyrophosphatase catalyses the conversion of inorganic pyrophosphate into orthophosphate in reaction mixtures where inorganic pyrophosphate is, or will become accumulated, like DNA synthesis and amplification (e.g PCR). Tth inorganic pyrophosphatase provides enhanced polymerisation by removing inhibitive amounts of pyrophosphate in reactions.

## Applications

- **Enhanced DNA amplification:** The addition of Tth inorganic pyrophosphatase greatly enhances the amplification reaction (e.g. PCR reaction) and provides superior results. As Taq- and other DNA polymerases are inhibited by the presence of pyrophosphate even at very low concentrations, this inhibition may be prevented by introducing Tth inorganic pyrophosphatase into the reaction mixture. The addition of 1 unit Tth inorganic pyrophosphatase to 10 units thermostable DNA polymerase may double the level of PCR amplification.
- **Long Fragments:** Tth inorganic pyrophosphatase enables longer DNA fragments to be processed successfully.
- **DNA Sequencing:** Tth inorganic pyrophosphatase is recommended for high-temperature cycle sequencing with thermostable DNA polymerases.
- **In vitro mutagenesis:** Tth inorganic pyrophosphatase provides increased fidelity.

**Usage:** Add approximately 1 unit Tth inorganic pyrophosphatase to 10 units thermostable DNA polymerase. Use mixture instead of "pure" thermostable polymerase.

## Storage and dilution buffer

20mM Tris-HCL (pH7.6), 100mM KCl, 0.1mM EDTA, 0.2% Tween-20, 50% glycerol.

## Activity

5 units/ $\mu$ L

## Unit definition

One unit is defined as the amount of enzyme to convert 1 $\mu$ mol of pyrophosphate into 2 $\mu$ moles of orthophosphate in one minute at 75°C and the following conditions: 1mM K<sub>4</sub>P<sub>2</sub>O<sub>7</sub>, 2mM MgCl<sub>2</sub>, 50mM Tris-HCl (pH9.0, at 75°C).

## Storage and Stability

The enzyme is stable for more than 12 months if stored at -20°C.  
 The enzyme is also stable for some days at RT and temperatures above 20°C.

## Associated activities / Quality Control

No ATPase or P-Klen activities are detectable.