

DATA QUALITY SHEET



KlenThermase™ DNA Polymerase

FOR RESEARCH USE ONLY

Cat. GC-018-0100, GC-018-0250, GC-018-0500, GC-018-1000, GC-018-5000

DESCRIPTION	KlenThermase™ DNA polymerase is an optimised version of KlenTherm™ DNA polymerase designed for cycle sequencing with dideoxynucleotides. This enzyme is recommended both for manual DNA sequencing with ³⁵ S label and for automated fluorescent DNA sequencing. Mutations have been introduced into the KlenTherm™ DNA polymerase that confer on this enzyme enhanced properties for cycle sequencing of double-stranded PCR products. KlenThermase™ is similar to, yet distinct from, USB ThermoSequenase. We recommend to use KlenThermase™ with our thermostable Tth inorganic pyrophosphatase (1 unit of Tth inorganic pyrophosphatase added to 10 units of KlenThermase™) for further improvement of uniformity of band intensities.
CONCENTRATION	25 units/μl.
UNIT DEFINITION	One unit is defined as the amount of enzyme that incorporates 10 nmoles of dNTPs into acid-insoluble form in 30 minutes at 72°C under the assay conditions (25 mM TAPS (tris-(hydroxymethyl)-methyl-aminopropane-sulfonic acid, sodium salt) pH 9.3 (at 25°C), 50 mM KCl, 2 mM MgCl ₂ , 1 mM β-mercaptoethanol and activated calf thymus DNA as substrate.
STORAGE BUFFER	10 mM K-phosphate buffer pH 7.0, 100 mM NaCl, 0.5 mM EDTA, 1 mM DTT, 0.01% Tween 20; 50% glycerol (v/v)
REACTION BUFFER	500 mM KCl, 100 mM Tris-HCl (pH 9 at 25°C), 1% Triton X100. Extra solution: 50 mM MgCl ₂ , add MgCl ₂ to a final concentration of 3.5 mM. Please note the difference between KlenTherm™ and BioTherm™ reaction buffers! 1.5 ml 10x reaction buffer Cat. No GC-001-006
STORAGE TEMPERATURE	Store KlenThermase™ DNA polymerase below 0°C, preferably at -20°C, in a constant temperature freezer.
APPLICATION	- Fidelity: The relative mutation rate during polymerisation is twofold lower for KlenThermase™ as compared to the full-length Taq DNA polymerase. - Cycle sequencing: The absence of the 5'-3' exonuclease activity makes KlenThermase™ especially suitable for cycle sequencing. It gives higher sequence intensity and very low backgrounds. The mutational optimization improves the uniformity of band intensities. Combination of KlenThermase™ with Tth inorganic pyrophosphatase generates uniform bands that improve sequencing accuracy and give long read lengths.
SHELF LIFE	2 years from date of receipt under proper storage conditions.
FUNCTIONAL ANALYSIS	Tested functionally in a unit activity test.