

Product Specification Sheet

Product: T4 DNA Ligase

Source: Bacteriophage T4 in *E.coli* NM 989

Code: MB-106-0100

Lot # 5215

Size: 100 units

Physical State: Liquid (sterile filtered)

Enzyme Concentration: 11 units/ μ l

Specific Activity: 2,000 units/mg Protein

Buffer Composition: A solution in 10 mM Tris-Cl, 1 mM EDTA, 1 mM DTT, 5 mM Potassium Chloride and 20% (v/v) glycerol, pH 7.6.

Application(s): Catalyzes the joining of DNA fragments involving 3'-OH and 5'-phosphate termini. Reaction requires ATP and Mg²⁺. Optimum pH for enzymatic catalysis is 7.6. Prepared by the induction of bacteriophage T4 in *E.coli* NM 989.

Reaction Conditions: Dilute the supplied 10X Enzyme Ligase Buffer appropriately with Molecular Biology Grade water. The 10X Enzyme Ligase Buffer contains 0.5 M Tris HCl, 0.1 M Magnesium Chloride, 0.025% (v/v) β -mercaptoethanol, pH 7.6. Add ATP to a final concentration of 5 mM (~3.1 mg/ml) prior to use. Any other dilution of enzyme should be made using a buffer containing 0.01 to 0.1% (w/v) nuclease free BSA.

Storage Conditions: Store vial at -20° C or colder. Expiration date is six (6) months from date of opening vial.

Unit Definition: One unit will catalyze the exchange of one nanomole ³²-P from pyrophosphate into a Norit-adsorbable compound in 20 minutes at 37° C (Weiss, B., et al., *JBC* **243**, 4543 (1968)).

Other Enzymatic Activity: DNase – none detected after incubation of 2 μ g Lambda DNA with 10 units of T4 DNA Ligase for 1 hour at 37° C in a total volume of 100 μ l. Endonuclease – No change in the ethidium bromide electrophoresis band pattern following the incubation of 10 units of T4 DNA Ligase with 2 μ g of pUC18 DNA. RNase – None detected after incubation of 20 μ g of rRNA with 10 units of T4 DNA Ligase for 2 hours at 37° C in a total volume of 20 μ l.

Note: This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.