

9°N_m™ DNA Polymerase



1-800-632-7799
info@neb.com
www.neb.com



M0260S 003120914091

M0260S



200 units 2,000 U/ml Lot: 0031209
RECOMBINANT Store at -20°C Exp: 9/14

Description: 9°N_m DNA Polymerase is a thermophilic DNA polymerase that has been genetically engineered to have a decreased (1%–5% of the wildtype) 3'→5' proofreading exonuclease activity. 9°N_m DNA Polymerase features a half-life of 6.7 hours at 95°C.

Source: An *E. coli* strain that carries the 9°N (E143D) DNA Polymerase gene (1,2), a genetically engineered form of the native DNA polymerase from the extremely thermophilic marine archaea

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Thermococcus species 9°N-7. The archaea was isolated from a submarine thermal vent, at a depth of 2,500 meters, 9° north of the equator at the East Pacific Rise (3).

Supplied in: 100 mM KCl, 0.1 mM EDTA, 10 mM Tris-HCl (pH 7.4), 1 mM DTT and 50% glycerol.

Applications:

- Primer extension
- SNP Analysis

Reagents Supplied with Enzyme:

10X ThermoPol™ Reaction Buffer.

Reaction Conditions: 1X ThermoPol Reaction Buffer, 200 μM each dNTP, DNA template, primer and 1–2 units 9°N_m DNA Polymerase in a total reaction volume of 100 μl.

1X ThermoPol Reaction Buffer:

20 mM Tris-HCl
10 mM (NH₄)₂SO₄
10 mM KCl
2 mM MgSO₄
0.1% Triton® X-100
pH 8.8 @ 25°C

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Unit Definition: One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid-insoluble material in 30 minutes at 75°C.

Unit Assay Conditions: 1X ThermoPol Reaction Buffer, 200 μM dNTPs including [³H]-dTTP and 15 nM primed single-stranded M13mp18.

Heat Inactivation: No

Quality Control Assays

Endonuclease Activity: Incubation of a 50 μl reaction in ThermoPol Reaction Buffer supplemented with 400 μM each dNTP containing a minimum of 20 units of 9°N_m DNA Polymerase with 1 μg of supercoiled φX174 DNA for 4 hours at either 37°C or 75°C results in < 10% conversion to the nicked form as determined by agarose gel electrophoresis.

Notes on use:

It is suggested that the number of units be optimized with each primer:template.

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References:

1. Southworth, M. W. et al. (1996) *Proc. Natl. Acad. Sci. USA*, 5281–5285.
2. Rodriguez, A. C. et al. (2000) *J. Mol. Biol.* 447–462.
3. *Thermococcus sp.* (strain 9°N-7) isolated by Dr. Holger Jannasch, Woods Hole Oceanographic Institute, 1991.

Companion Products Sold Separately:

Magnesium Sulfate (MgSO₄) Solution
#B1003S 6.0 ml

Diluent E
#B8005S 4.0 ml

ThermoPol Reaction Buffer Pack
#B9004S 6.0 ml

ThermoPol II (Mg-free) Reaction Buffer Pack
#B9005S 6.0 ml

ThermoPol DF (Detergent-free) Reaction Buffer Pack
#B9013S 6.0 ml

(see other side)

CERTIFICATE OF ANALYSIS

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CERTIFICATE OF ANALYSIS

Deoxynucleotide Solution Set
#N0446S 25 µmol each

Deoxynucleotide Solution Mix
#N0447S 8 µmol each
#N0447L 40 µmol each

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