Applications:
- Replication requiring a high degree of strand displacement and/or processive synthesis
- High fidelity replication at moderate temperatures

Supplied in: 100 mM KCl, 10 mM Tris-HCl (pH 7.4), 0.1 mM EDTA, 1 mM dithiothreitol, 0.5% Tween® 20, 0.5% IGEPAL® CA-630 and 50% glycerol.

Reagents Supplied with Enzyme:
10X phi29 DNA Polymerase Reaction Buffer Supplemented with 200 µg/ml BSA and 200 µM dNTPs (not included).

Reaction Conditions: 1X phi29 DNA Polymerase Reaction Buffer, supplemented with 200 µg/ml BSA and 200 µM dNTPs (not included).

1X phi29 DNA Polymerase Reaction Buffer:
- 50 mM Tris-HCl
- 10 mM MgCl₂
- 10 mM (NH₄)₂SO₄
- 4 mM DTT
- pH 7.5 @ 25°C

Unit Definition: One unit is defined as the amount of enzyme that will incorporate 0.5 pmol of dNTP into acid insoluble material in 10 minutes at 30°C.

Unit Assay Conditions:
- 1X phi29 DNA Polymerase Reaction Buffer
- 0.1 mg/ml BSA
- 0.01 mg/ml HindIII-digested λ DNA
- 0.2 µM dTTP including [3H]-dTTP, 0.2 mM dGTP, 0.2 mM dATP, and 0.2 mM dCTP

Molecular Weight: 66,714 daltons.

Heat Inactivation: 65°C for 10 minutes.

Quality Control Assays
Endonuclease Activity: Incubation of a 50 µl reaction in phi29 Reaction Buffer containing a minimum of 100 units of phi29 DNA Polymerase with 1 µg of supercoiled ϕX174 DNA for 4 hours at 37°C resulted in <10% conversion to the nicked form as determined by agarose gel electrophoresis.

Certification

Notes: The presence of active reducing reagent in the reaction buffer is critical for this enzyme. While the reaction buffer supplied with the enzyme contains DTT, older buffer stocks or stocks that have been repeatedly frozen and thawed should be supplemented with 4 mM DTT to obtain maximal activity.

If stock solutions of lesser concentration are needed, use Diluent F.

References:

(see other side)
Companion Products Sold Separately:

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<thead>
<tr>
<th>Description</th>
<th>Code</th>
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<tr>
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