



Polyethylene glycol 8000 *BioChemica*

A2204

Synonym	PEG, Polyglycol, Polyoxyethylene
Formula	HO(C ₂ H ₄ O) _n H
CAS-No.:	25322-68-3
HS-No.:	39072011
EC-No.:	500-038-2
Storage:	RT
LGK:	10 - 13
Disposal:	3
WGK:	1
Specification	
Average M	7000 - 9000
Solubility (5 %; H₂O)	clear, colorless
pH (5 %; H₂O)	5.5 - 7.0 (20°C)
Heavy metals	max. 0.005 %

Literature

- (1) Zimmerman, S.B. & Harrison, B. (1985) *Nucleic Acids Res.* **13**, 2241-2249 'Macromolecular crowding' increases the cohesion of DNA with complementary ends.
- (2) Sambrook, J., Fritsch, E.F. & Maniatis, T. (1989) *Molecular Cloning: A Laboratory Manual*, 2nd Edition; Pages 1.70, 1.71, 4.35; Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
- (3) Odom, O.W. *et al.* (1997) *Anal. Biochem.* **245**, 249-252 An effect of PEG 8000 on the mobility of proteins in SDS-PAGE and a methode to eliminate these effects.

Comment

The kinetic of the ligation in the cloning of DNA-fragments into bacteriophage M13-vectors can be improved by the inclusion of 5 % polyethylene glycol 8000 (PEG 8000; ref. 2). Especially for the cloning with 'blunt-ended' DNA, the concentration of 'blunt'-DNA-ends plays a crucial role for the successful cloning. Substances, that increase the so-called 'macromolecular crowding' and condense DNA molecules into aggregates, concentrate the DNA and increase the possibility, that DNA ends will meet and thereby improve the cloning result (1,2). So, the DNA and enzyme concentration can be reduced. Besides, such substances reduce the intramolecular ligation (religation). For 'blunt end' cloning the recommended PEG 8000 concentration is 15 %.

Stock solutions of PEG 8000 (40 %) are prepared with deionized water and stored at -20°C in small aliquots.