


Specification

DEPC BioChemica

A0881

Refractive Index:	n ₂₀ /D 1.398
Physical Description:	Liquid
Product Code:	A0881
Product Name:	DEPC BioChemica
Specifications:	Assay (NT): min. 97 %
Hazard pictograms	
WGK:	1
Storage:	2-8°C
Signal Word:	Attention
GHS Symbols:	GHS07
H Phrases:	H302+H332 H315 H319 H335
P Phrases:	P280 P305+P351+P338
Molecular Formula:	C ₆ H ₁₀ O ₅
M:	162.14 g/mol
CAS:	1609-47-8
EINECS:	216-542-8

AppliChem GmbH

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CS:	29209010
<p>Comment</p> <p>Diethylpyrocarbonate (DEPC) modifies histidyl-residues in proteins and leads to the inactivation of many enzymes. In molecular biology it is mainly used as a strong, but not absolute, inhibitor of RNase activity. In addition, DEPC reacts with adenosine of single-stranded nucleic acids (2) and purines in Z-DNA (4) and B-DNA (5), respectively. For the treatment of water with DEPC, add 1 ml of DEPC to 1 liter bidistilled water (0.1 % DEPC v/v) and stirr over night. Autoclaving at 20 psi for 20 minutes inactivates DEPC. DEPC reacts with water and hydrolyses to ethanol and CO₂. It is of low solubility in aqueous buffers (solubility in water max. 40 mM). DEPC in its pure form has a concentration of 6.9 M (3). As a diluent you may use anhydrous ethanol or acetonitrile (e. g. stock solution 10 mM, ref. 3). Autoclaving totally inactivates DEPC in solutions, even if the typical smell does not disappear (1). Since DEPC acylates histidyl- and tyrosyl-residues, do not use it in combination with reagents containing these residues (e. g. Tris). Tris inactivates DEPC! Caution: DEPC is suspected to be a carcinogen and should be handled with great care. Do not breathe fumes and avoid contact with skin! DEPC may damage eyes and mucous membranes! The combination with ammonia ions (e.g. ammonium acetate from the precipitation of nucleic acids) forms the strong carcinogen ethylcarbamate (2).</p>	
<p>Bibliography</p> <p>(1)Summers, W.C. (1970) <i>Anal. Biochem.</i> 33, 459-463A simple method for the extraction of RNA from <i>E. coli</i> with DEPC. (2)Berger, S.L. (1975) <i>Anal. Biochem.</i> 67, 428-437DEPC: An examination of its properties in buffered solutions with a new assay technique. (3)Ehrenberg, L. et al. (1976) <i>Progr. Nucl. Acid Res. Mol. Biol.</i> 16, 189-262Diethyl pyrocarbonate in nucleic acid research. (4)Miles, E.W. (1977) <i>Methods Enzymol.</i> 47, 431-442Modification of Histidyl residues in proteins by Diethyl pyrocarbonate. (5)Herr, W. (1985) <i>Proc. Natl. Acad. Sci. USA</i> 82, 8009-8013DEPC: A chemical probe for secondary structure in negatively supercoiled DNA. (6)McCarthy, J.G. et al. (1990) <i>Biochemistry</i> 29, 6071-6081Chemical reactivity of DEPC with B-DNA: Specific reactivity with short A-Tracts.</p>	
	

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