MOPS Buffer grade

3-Morpholinopropanesulfonic acid
Product No. A1076

Description

Formula:	$C_7H_{15}NO_4S$
Molecular weight:	209.27 g/mol
CAS-No.:	[1132-61-2]
HS-No.:	2934 90 70
Assay (titr.):	min. 99.5 %
Melting point:	277 - 280°C (dec.)
useful buffer range:	pH 6.5 - 7.9
Working concentration:	10 - 100 mM
pK_a (25°C):	7.2
$\Delta pH/\Delta t$ (pH units/°C):	-0.011
Storage:	room temperature

Comment

MOPS interferes neither with the Folin nor with the Biuret protein assay. MOPS doesn't bind metall ions significantly. It partialy decomposes if autoclaved in the preence of glucose.

Application and Literature

(1)Electrophoresis buffer for the isolation of RNA from agarose gels, containing 2 M formaldehyde, 40 mM MOPS, 5 mM NaOAc, 0.5 mM EDTA (pH 7.0). (Yamagata, T. *et al.* (1995) *Mol. Cell. Biol.* **15**, 3830-3839); alternatively: 2.2 M formaldehyde, 20 mM MOPS (pH 7.0), 8 mM NaOAc, 1 mM EDTA (Kitabayashi, I. *et al.* (1995) *EMBO J.* **14**, 3496-3509).
(2)Investigation of the import of proteins into mitochondria from yeast: stopping of the import reaction by the addition of ice-cold SEM (250 mM Sucrose, 1 mM EDTA, 10 mM MOPS-KOH, pH 7.2) with 1 µM valinomycin. Lysis of the mitochondria after the import of proteins in SMKCl (250 mM Sucrose, 10 mm MOPS-KOH, 100 mM KCl, pH 7.2) with 0.5% Triton X-100. (Westermann, B. *et al.* (1995) *EMBO J.* **14**, 3452-3460).
(3)Modification of the amino acid Lysin with acetic acid anhydride: Modification of the amino acid Arg82 of bacteriorhodopsin in the mutant R82K with acetic acid anhydride for the analysis of the function of the amino acid. The regulation of the pH value during the reaction with 10 mM MOPS (pH 8.0) and NaOH. (Balashov, S.P. *et al.* (1995) *Biochemistry* **34**, 8820-8834).
(4)Catalysis of the reduction of carbon hydrates - 2 - oxoaldehydes by Aldose-reductase and Aldehyde-reductase: Meassurement of the reduction of the corresponding 2-oxoaldehydes with NADPH in 50 mM MOPS, 0.1 mM EDTA, 0.1 mM DTT, substrate 0.1 mM NADPH, pH 7.0. (Feather, M.S. *et al.* (1995) *Biochim. Biophys. Acta* **1244**, 10-16).
(5)Solubilisation and rekonstitution of LIV-1 (transport system for branched amino acid chains) from *P. aeruginosa*, overexpressed in *E. coli*: Preparation of membranes: washing of the cells in MMK-buffer (25 mM Potassium-MOPS, pH 7.0, 2.5 mM $MgCl_2$ and 50 mM KCl); destruction of the cells in a French Press; resuspension of the membranes in MMK-buffer and washing and storage in the same buffer with the addition of glycerol (50% final). Isolation of the proteins in MMK-buffer supplemented with 1 mM DTT, 20% Glycerol, 0.37% E. coli - phospholipids and 1.2% Octylglucoside. (Hoshino, T. *et al.* (1992) *J. Biol. Chem.* **267**, 21313-21318).
(6)Hydrogen ion buffers. (Good, N.E. & Izawa, S. (1972) *Methods Enzymol.* **24**, 53-68)
(7)Hydrogen ion buffers for biological research. (Ferguson, W.J. *et al*. (1980) *Anal*. *Biochem*. **104**, 300-310)