


Specification

Imidazole for buffer solutions

A1073

Solubility:	663 g/L (H ₂ O)
Physical Description:	Solid
Product Code:	A1073
Product Name:	Imidazole for buffer solutions
Specifications:	<p>Assay (titr.): min. 99 %</p> <p>Heavy metals (as Pb): max. 0.001 %</p> <p>Water: max. 0.5 %</p> <p>Chloride: max. 0.05 %</p> <p>Sulfate: max. 0.05 %</p>
Hazard pictograms	
UN:	3263
Class/PG:	8/III
ADR:	8/III
IMDG:	8/III
IATA:	8/III
WGK:	2
Storage:	RT
Signal Word:	Danger
GHS Symbols:	<p>GHS05</p> <p>GHS07</p> <p>GHS08</p>

AppliChem GmbH

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H Phrases:	H302 H314 H360D
P Phrases:	P280 P303+P361+P353 P305+P351+P338 P310 P321 P405 P501
Molecular Formula:	C ₃ H ₄ N ₂
M:	68.08 g/mol
CAS:	288-32-4
EINECS:	206-019-2
CS:	29332990
Index Nr.:	613-319-00-0
Comment	<p> The high affinity of nickel-ions to histidine is suited very well for the purification of recombinant proteins, which are fused to a so-called 'His-tag' (usually 6 histidine residues at the N- or C-terminus of the protein). This modified protein can be expressed in vaccinia infected cells (3), bacteria (4), yeast or insect cells (5) and purified by nickel-NTA-columns. The bound protein can be eluted by imidazole, which competes with the histidine residues of the his-tagged protein for the nickel ions. The optimal concentration of imidazole differs depending on the protein, but ranges very often from 40 to 200 mM. Imidazole is often used as buffer substance for enzymatic reactions. The working concentration ranges e. g. from 20 mM (2) to 50 mM (5), but it can also reach 100 mM (6). A concentration of 1 M reduces the melting temperature of DNA by approx. 13°C and changes the mobility in the gel electrophoresis (7). Caution: DEPC reacts with the non-protonated form of imidazole (1) and N-Carbethoxyimidazole will be formed. DEPC hydrolyses and it might be important to determine the exact DEPC concentration. This can be done by spectrophotometric measurements after incubation with 10 mM imidazole at 230 nm (pH 7.5). Stability: Solutions of imidazole are stable for several years (at least 6 years). It is not necessary to autoclave the solution and to store it protected from light. Buffers containing imidazole will turn to yellow. These solutions are still suitable to elute His-tag proteins. </p>

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Bibliography

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