


Specification

DTT BioChemica

A1101

Solubility:	1500 g/L (H ₂ O)
Physical Description:	Solid
Product Code:	A1101
Product Name:	DTT BioChemica
Headline Comment:	Attention: Product may form lumps when stored. Material is highly hygroscopic! Storage at 2°-8°C under inert gas! Open only under inert gas!
Specifications:	<p>Assay (iodometr.): min. 99.5 %</p> <p>pH (0.1 M; H₂O; 20°C): 4.0 - 6.0</p> <p>Melting point: 40 - 44°C</p> <p>DTT (oxidized): max. 0.5 %</p> <p>Loss on drying: max. 0.5 %</p> <p>A (1 cm/0.02 M in H₂O)</p> <p>283 nm: max. 0.05</p>
Hazard pictograms	
WGK:	1
Storage:	2 - 8°C under inert gas
Shipment:	wet ice in Germany, dry ice to abroad
Signal Word:	Attention
GHS Symbols:	GHS07
H Phrases:	H302 H315

AppliChem GmbH

Ottoweg 4 • D-64291 Darmstadt • Phone +49 6151 9357 0 • Fax +49 6151 9357 11 • info.de@itwreagents.com • www.itwreagents.com
 CEO Joan Roget • Commerzbank Darmstadt • Bank 508 800 50 • Account 0186989900 IBAN DE24 5088 0050 0186 9899 00 • Swiftcode DRESDEFF508 • Finanzamt Darmstadt 07 228 16476 • Register court Darmstadt HRB Nr. 7340

Specification

DTT BioChemica

A1101

	H319
P Phrases:	P302+P350 P305+P351+P338
Molecular Formula:	C ₄ H ₁₀ O ₂ S ₂
M:	154.25 g/mol
CAS:	3483-12-3
EINECS:	222-468-7
CS:	29309098
Comment	<p>Dithiothreitol (DTT) is, like β-mercaptoethanol, a reducing reagent for proteins and protects the cysteine residues against oxidation. It may substitute for β-mercaptoethanol in almost all experiments at three to four fold lower concentrations. DTT is less toxic, its odor is less intensive and it doesn't form mixed disulfides like β-mercaptoethanol. DTT is water-soluble and stock solutions are prepared at 1 M. Store the solution aliquoted at -20°C and protect from heat during the experiment. Do not choose a too low concentration for the experiment, because it is readily oxidized by air. The working concentration ranges from 0.1 to 1 mM, but the preparation of plant extracts (5 mM; ref. 4) or for the 'large scale <i>in situ</i> isolation' of proteins after fermentation (10 mM; ref. 5) require higher concentrations. For the complete reduction of disulfides, the concentration might be significantly higher (3). A more stable and odorless alternative to DTT is Tris(2-carboxy)ethylphosphine (A2233).</p>
Bibliography	<p>(1)Cleland, W.W. (1964) <i>Biochemistry</i> 3, 480-482 Dithiothreitol, a new protective reagent for SH groups. (2)Zahler, W.L. & Cleland, W.W. (1968) <i>J. Biol. Chem.</i> 243, 716-719 A specific and sensitive assay for disulfides. (3)Jocelyn, P.C. (1987) <i>Methods Enzymol.</i> 143, 246-256 Chemical reduction of disulfides. (4)Gegenheimer, P. (1990) <i>Methods Enzymol.</i> 182, 174-193 Preparation of plant extracts. (5)Hart, R.A. et al. (1994) <i>Bio/Technology</i> 12, 1113-1117 'Large scale <i>in situ</i> isolation' of periplasmic IGF-I from <i>E. coli</i>.</p>

AppliChem GmbH

Ottoweg 4 • D-64291 Darmstadt • Phone +49 6151 9357 0 • Fax +49 6151 9357 11 • info.de@itwreagents.com • www.itwreagents.com
CEO Joan Roget • Commerzbank Darmstadt • Bank 508 800 50 • Account 0186989900 IBAN DE24 5088 0050 0186 9899 00 • Swiftcode DRESDEFF508 • Finanzamt Darmstadt 07 228 16476 • Register court Darmstadt HRB Nr. 7340