


Specification

**DTT BioChemica**

**A1101**

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

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Specification

**DTT BioChemica**

**A1101**

	H319
<b>P Phrases:</b>	P302+P350 P305+P351+P338
<b>Molecular Formula:</b>	C <sub>4</sub> H <sub>10</sub> O <sub>2</sub> S <sub>2</sub>
<b>M:</b>	154.25 g/mol
<b>CAS:</b>	3483-12-3
<b>EINECS:</b>	222-468-7
<b>CS:</b>	29309098
<b>Comment</b>	<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>
<b>Bibliography</b>	<p>(1)Cleland, W.W. (1964) <i>Biochemistry</i> <b>3</b>, 480-482 Dithiothreitol, a new protective reagent for SH groups. (2)Zahler, W.L. &amp; Cleland, W.W. (1968) <i>J. Biol. Chem.</i> <b>243</b>, 716-719 A specific and sensitive assay for disulfides. (3)Jocelyn, P.C. (1987) <i>Methods Enzymol.</i> <b>143</b>, 246-256 Chemical reduction of disulfides. (4)Gegenheimer, P. (1990) <i>Methods Enzymol.</i> <b>182</b>, 174-193 Preparation of plant extracts. (5)Hart, R.A. <i>et al.</i> (1994) <i>Bio/Technology</i> <b>12</b>, 1113-1117 'Large scale <i>in situ</i> isolation' of periplasmatic IGF-I from <i>E. coli</i>.</p>

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