


Specification

**PMSF BioChemica**

**A0999**

<b>Physical Description:</b>	Solid
<b>Product Code:</b>	A0999
<b>Product Name:</b>	PMSF BioChemica
<b>Specifications:</b>	<p>Assay (GC): min. 99 %</p> <p>Solubility (10 %, EtOH): clear</p> <p>Heavy metals (as Pb): max. 0.001 %</p> <p>Sulfated ash: max. 0.1 %</p> <p>Water (K.F.): max. 0.5 %</p>
<b>Hazard pictograms</b>	
<b>UN:</b>	2923
<b>Class/PG:</b>	8(6.1)/II
<b>ADR:</b>	8(6.1)/II
<b>IMDG:</b>	8(6.1)/II
<b>IATA:</b>	8(6.1)/II
<b>WGK:</b>	1
<b>Storage:</b>	RT
<b>Signal Word:</b>	Danger
<b>GHS Symbols:</b>	<p>GHS05</p> <p>GHS06</p>
<b>H Phrases:</b>	<p>H301</p> <p>H314</p>

**AppliChem GmbH**

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## Specification

**PMSF BioChemica**

**A0999**

<b>P Phrases:</b>	P280 P305+P351+P338 P310
<b>Molecular Formula:</b>	C <sub>7</sub> H <sub>7</sub> FO <sub>2</sub> S
<b>M:</b>	174.19 g/mol
<b>CAS:</b>	329-98-6
<b>EINECS:</b>	206-350-2
<b>CS:</b>	29049900
<b>Comment</b>	<p>PMSF is an irreversible inhibitor of serin-proteases like trypsin, chymotrypsin and cysteine proteases. The inhibition of cysteine proteases can be reverted by reducing thioles. It is frequently used for the preparation of proteins from cell lysates. PMSF is limited soluble in water. Stock solutions are prepared in organic solvents (e. g. 10 mg/ml in 10 % Isopropanol). The effective concentration of PMSF is 0.1 - 1 mM. The LD<sub>50</sub> (i.p.) for the mouse is 200 mg/kg. <b>Stability</b>: In aqueous solutions PMSF is inactivated very fast, especially at raising pH and temperature. Therefore, it has to be added fresh during each working step. At pH 7.0, 7.5 and 8.0 at 25°C the half life is 110, 55 and 35 minutes respectively. Stock solutions (Isopropanol) are stable for about 9 months at +4°C (4). Stock solutions of PMSF (10 - 100 mM; 1.74 mg/ml - 17.4 mg/ml, respectively) are prepared with anhydrous Ethanol, Methanol or Isopropanol and stored at -20°C. PMSF may crystallize in Isopropanol at -20°C. <b>Caution</b>: PMSF is extremely toxic to mucous membranes of the lung, eyes and skin. Any contact by inhalation, swallowing or contact with skin must be avoided. After contact with skin wash immediately with plenty of water. We recommend to use <b>AEBSF</b> instead of PMSF, which is as effective but substantially less toxic.</p>
<b>Bibliography</b>	<p>(1)Fahrney, D.E. &amp; Gold, A.M. (1963) <i>J. Am. Chem. Soc.</i> <b>85</b>, 996-1000Sulfonyl fluorides as inhibitors of esterases. I. Rates of reaction with acetylcholinesterase, α-Chymotrypsin and trypsin. (2)Gold, A.M. &amp; Fahrney, D.E. (1964) <i>Biochemistry</i> <b>3</b>, 783-791Sulfonyl fluorides as inhibitors of esterases. II Formation and reactions of phenylmethanesulfonyl α-Chymotrypsin. (3)Prouty, W.F. &amp; Goldberg, A.L. (1972) <i>J. Biol. Chem.</i> <b>247</b>, 3341-3352Effects of protease inhibitors on protein breakdown in <i>E. coli</i>. (4)James, G.T. (1978) <i>Anal. Biochem.</i> <b>86</b>, 574-579Inactivation of the protease inhibitor Phenylmethylsulfonyl fluoride in buffers.</p>

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