

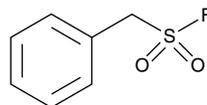
Product Information



Phenylmethylsulfonyl fluoride

Item No. 14333

CAS Registry No.: 329-98-6
Formal Name: benzenemethanesulfonyl fluoride
Synonyms: Benzylsulfonyl fluoride, NSC 88499, PMSF
MF: C₇H₇FO₂S
FW: 174.2
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 208 nm



Laboratory Procedures

For long term storage, we suggest that phenylmethylsulfonyl fluoride (PMSF) be stored as supplied at -20°C. It should be stable for at least two years.

PMSF is supplied as a crystalline solid. A stock solution may be made by dissolving the PMSF in the solvent of choice. PMSF is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of PMSF in ethanol and DMSO is approximately 20 mg/ml and approximately 33 mg/ml in DMF.

PMSF is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, PMSF should first be dissolved in DMF and then diluted with the aqueous buffer of choice. PMSF has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

PMSF is a nonspecific, irreversible inhibitor of serine proteases and other enzymes, including acetylcholinesterase, palmitoyl coenzyme A deacylase, arylsulfatase A, chymotrypsin, and trypsin.^{1,2} It is used in protein solubilization studies in order to deactivate proteases from digesting proteins of interest after cell lysis. Because PMSF specifically sulfonylates the hydroxyl groups of active site serine residues of enzymes, it can be used as a chemical label to identify essential active site serines in an enzyme. PMSF is known to alter the actions of anandamide by blocking its metabolism and can produce cannabinoid effects in mice, including antinociception, hypothermia, and immobility with ED₅₀ values of 86, 224, and 206 mg/kg, respectively.³

References

1. Kraut, D., Goff, H., Pai, R.K., *et al.* Inactivation studies on acetylcholinesterase with phenylmethylsulfonyl fluoride. *Mol. Pharmacol.* **57**(6), 1243-1248 (2000).
2. Raulston, D.L. and Schroepfer, G.J., Jr. Effect of phenylmethylsulfonyl fluoride on sterol biosynthesis in 10,000 x g supernatant fraction of rat liver homogenates. *J. Biol. Chem.* **256**(14), 7173-7176 (1981).
3. Compton, D.R. and Martin, B.R. The effect of the enzyme inhibitor phenylmethylsulfonyl fluoride on the pharmacological effect of anandamide in the mouse model of cannabimimetic activity. *J. Pharmacol. Exp. Ther.* **283**, 1138-1143 (1997).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/14333

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery.**

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