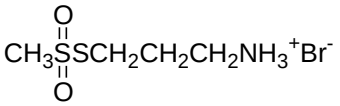
46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352
www.biotium.com

PRODUCT AND SAFETY DATA SHEET

PRODUCT NAME: **MTSPA** (3-aminopropyl methanethiosulfonate hydrobromide)

CATALOG # **91024**

MOLECULAR INFORMATION: $C_4H_{12}BrNO_2S_2$
MWt: 250.15

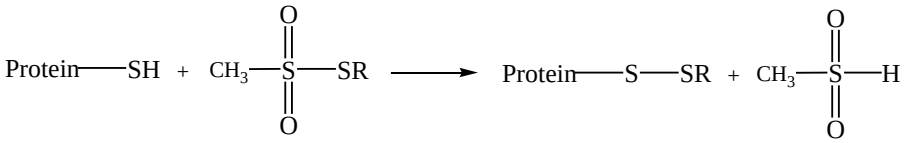


PROPERTIES:

Color & Form	White solid
Purity	≥ 95% by TLC
Solubility	Soluble in water, DMF or DMSO

STORAGE AND HANDLING: Store the material at -20 °C in dry condition.

APPLICATION: MTS (methanethiosulfonate) reagents were first developed by Dr. Arthur Karlin and colleagues as powerful tools to probe the structures and functions of proteins, particularly membrane proteins such as ion channels. The reagents selectively and rapidly react with thiols (sulfhydryls) to form a disulfide bond and as a result are highly efficient labeling agents for cysteine residues in proteins. The so-called SCAM method (substituted-cysteine accessibility method) employs a combination of chemical and genetic approaches. First, cysteine residues are systematically introduced at various positions in a protein via site-directed mutagenisis. Then the introduced cysteines are assessed on their reactivity and accesibility toward various MTS reagents. Determination is also made on the effect of the labeled cysteine on protein function. By using a series of MTS reagents differing in charge or size of the reagents, SCAM can yield information on the physical size and electrostatic potential of an ion channel, and on the membrane-sidedness and accessibility (buried or exposed) of a residue.



MTS Reagent

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APPLICATION (CONTINUED):

Biotium offers a range of MTS reagents, including the commonly used small, charged and neutral MTS reagents for SCAM studies as well as fluorescent and biotinyl MTS derivatives. Fluorescent MTS reagents are useful for real-time studies of protein structure dynamics by measuring environment-dependent fluorescence, fluorescence lifetime or fluorescence resonance energy transfer (FRET). Our biotinyl MTS reagents should find applications in biotin/avidin chemistry-related studies.

MTSPA is a positively charged MTS reagent.

TOXICITY: Unknown

FIRST AID:	Potentially harmful. Avoid prolonged or repeated exposure. Avoid getting in eyes, on skin, or on clothing. Wash thoroughly after handling. If eye or skin contact occurs, wash affected areas with plenty of water for 15 minutes and seek medical advice. In case of inhaling or swallowing, move individual to fresh air and seek medical advice immediately.