

MMTS

(Methyl methanethiosulfonate)

23011

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Number**Description**

23011

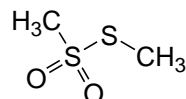
MMTS (Methyl methanethiosulfonate), 200mg (~150 μ L)Formula: C₂H₆O₂S₂

Molecular Weight: 126.2

Form: liquid, dispensed by weight

Density: ~1.34

CAS #: 2949-92-0

**Storage:** Upon receipt store at 4°C. Product is shipped at ambient temperature.**Introduction**

Thermo Scientific MMTS is a sulfhydryl-reactive compound that is useful for reversibly sulfenylating thiol-containing molecules. Reaction of MMTS with reduced sulfhydryls (-SH) results in their modification to dithiomethane (-S-S-CH₃). Subsequent treatment with reducing agents such as dithiothreitol (DTT), 2-mercaptoethanol (2-ME) or Tris(2-carboxyethyl) phosphine hydrochloride (TCEP) will cleave the disulfide groups to restore the original sulfhydryl. For irreversible blocking of sulfhydryl groups, use *N*-ethylmaleimide (NEM, see Related Thermo Scientific Products). MMTS is commonly used to study biochemical pathways involving thiol-dependent enzymes.

Considerations for Use

Reactions with MMTS must be performed in buffers free of sulfhydryl-containing reagents except those intended to be modified. Compatible buffers include phosphate-buffered saline (PBS) and 4-(2-hydroxyethyl)piperazine-1-ethanesulfonic acid (HEPES) at pH 7-8. The liquid reagent (~99% pure) is a 10.6M solution. Final concentrations of 1-1000 μ M MMTS, comprising a several-fold molar excess over the sulfhydryl targets, are usually sufficient to have measurable effects in assays of thiol-dependent biochemical pathways.

Related Thermo Scientific Products

- 20291 No-Weigh™ Dithiothreitol (DTT), 48 × 7.7mg
20490 TCEP•HCl, 1g
23030 N-Ethylmaleimide (NEM), 25g
28372 BupH™ Phosphate Buffered Saline Packs, 40 packs

Product References

- Foster, M.W., and Stamler, J.S. (2004). New insights into protein *S*-nitrosylation. *J Biol Chem* **279**(24):25891-7.
Hajra, A.K., *et al.* (2000). Induction of the peroxisomal glycerolipid-synthesizing enzymes during differentiation of 3t3-L1 adipocytes. *J Biol Chem* **275**(13):9441-6.
Huawei, Q., *et al.* (2003). Activation of human acid sphingomyelinase through modification or deletion of C-terminal cysteine. *J Biol Chem* **278**(35):32744-52.
Robbins, J.B., *et al.* (2004). Functional analysis of multiple single-stranded DNA-binding proteins from *Methanosarcina acetivorans* and their effects on DNA synthesis by DNA polymerase B1. *J Biol Chem* **279**(8):6315-26.

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