# **PRODUCT** INFORMATION



## Diphemanil (methyl sulfate)

Item No. 30090

CAS Registry No.:	62-97-5	/
Formal Name:	4-(diphenylmethylene)-1,1-dimethyl- piperidinium, methyl sulfate	
Synonym:	NSC 41725	
MF:	$C_{20}H_{24}N \bullet CH_3SO_4$	
FW:	389.5	-0S0
Purity:	≥98%	
Supplied as:	A liquid	
Storage:	-20°C	
Stability:	≥2 years	$\sim$

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

#### Laboratory Procedures

Diphemanil (methyl sulfate) is supplied as a liquid. A stock solution may be made by dissolving the diphemanil (methyl sulfate) in the solvent of choice, which should be purged with an inert gas. Diphemanil (methyl sulfate) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of diphemanil (methyl sulfate) in these solvents is approximately 10 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of diphemanil (methyl sulfate) can be prepared by directly dissolving the liquid in aqueous buffers. The solubility of diphemanil (methyl sulfate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

#### Description

Diphemanil is a quaternary ammonium anticholinergic agent.<sup>1</sup> It induces relaxation of isolated guinea pig trachea strips precontracted with methacholine (EC<sub>50</sub> = 0.12 nM). Diphemanil reverses increases in lung resistance and decreases in dynamic lung compliance induced by the non-selective acetylcholine receptor agonist carbachol (carbamoylcholine; Item No. 14486) in vagotomized cats (ED<sub>50</sub>s = 17.5 and 19.3  $\mu$ g/kg, respectively). It reduces salivation induced by the muscarinic acetylcholine receptor agonist pilocarpine in mice when administered subcutaneously at doses ranging from 1.25 to 10 mg/kg.<sup>2</sup>

#### References

- 1. Diamond, L. and O'Donnell, M. A comparative study of two parasympatholytic bronchodilator agents: Ipratropium bromide and diphemanil methylsulfate. J. Pharmacol. Exp. Ther. 216(1), 1-5 (1981).
- 2. Richter, W. Estimation of anticholinergic drug effects in mice by antagonism against pilocarpine-induced salivation. Acta. Pharmacol. Toxicol. (Copenh) 24(2), 243-254 (1966).

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFFTY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. 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

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