



Product Information

Urethane

Product Number **U 2500**
Store at Room Temperature

Product Description

Molecular Formula: $C_3H_7NO_2$
Molecular Weight: 89.09
CAS Number: 51-79-6
Melting Point: 48-50 °C¹
Boiling Point: 182-184 °C¹
Synonyms: Urethan, carbamic acid ethyl ester, ethyl carbamate, ethylurethane

Molten urethane is a good solvent for various organic materials. Urethane is an intermediate in organic synthesis. It is used in the preparation and modification of amino resins. Urethane is also utilized as a solubilizer and cosolvent for pesticides and fumigants.¹

In a study on anesthetic effects of urethane in adult male rats, urethane (1.2 and 1.5 g/kg) caused moderate cardiovascular depression. In addition, mortality was high at the 1.5 g/kg dose. Duration of anesthesia was greater than 24 hours for most animals and anesthesia depth and analgesia were excellent.²

In a study on Sprague-Dawley rats, interactions between NMDA receptors and cocaine are modified by urethane anesthesia.³ Urethane has a suppressive effect on COX and iNOS RNA message in the lung and for this reason, it should be avoided as an anesthetic when lung inflammatory processes are experimentally evaluated in the rat.⁴ In contrast to pentobarbitone, elevator motoneurons do not show sustained firing to intracellular injections of depolarizing current pulses in rats anesthetized with

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble in water (100 mg/ml), yielding a clear, colorless solution. It is also soluble in alcohol (1.2 g/ml), chloroform (1.1 g/ml), ether (666 mg/ml), glycerol (400 mg/ml), and olive oil (31 mg/ml).¹

References

1. The Merck Index, 12th ed., Entry# 10013.
2. Field, K. J., et al., Anaesthetic effects of chloral hydrate, pentobarbitone and urethane in adult male rats. *Lab Anim.*, **27(3)**, 258-269 (1993).
3. Rockhold, R. W., et al., Urethane anesthesia reverses the protective effect of noncompetitive NMDA receptor antagonists against cocaine intoxication. *Life Sci.*, **54(5)**, 321-330 (1994).
4. Martinez, F. E., et al., Urethane suppresses rat lung inducible cyclooxygenase and nitric oxide synthase mRNA levels. *Inflamm Res.*, **49(12)**, 727-731 (2000).
5. Moore, J. A., and Appenteng, K., Contrasting effects of urethane and pentobarbitone anaesthesia on the electrical properties of rat jaw-elevator motoneurons. *Brain Res.*, **523(1)**, 139-142 (1990).

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urethane.⁵