Aminophylline

Catalog Number A1755
Storage Temperature –20 °C
Replacement for Catalog Number 216895

CAS RN 317-34-0
Synonyms: theophylline hemiethylenediamine complex; 3,7-dihydro-1,3-demethyl-1H-purine-2,6-dione compound with 1,2-ethanediame (2:1); (theophylline)₂ • ethylenediamine₁,²

Product Description
Molecular Formula: C₇H₈N₄O₂ • 1/2 (C₂H₈N₂)
Molecular Weight: 210.3

Aminophylline is a xanthine derivative which is a combination of theophylline and ethylenediamine that is more water soluble than theophylline alone. Aminophylline has been widely used as an inhibitor of cAMP phosphodiesterase.³

Aminophylline has been shown to limit phosphatidylcholine biosynthesis in cultured rat hepatocytes.⁴ It has been used in studies of acute hypoxemia in newborn and older guinea pigs.⁵ The effect of various xanthine derivatives, including aminophylline, on activation of the cystic fibrosis transmembrane conductance regulator (CFTR) chloride channel, as stably expressed in Chinese hamster ovary (CHO) cells, has been investigated.⁶

A kinetic spectrophotometric method for the determination of theophylline, based on an azo coupling reaction with the diazonium ion of sulfanilic acid after alkali treatment, has been reported.⁷ Micellar electrokinetic chromatography has been applied to the characterization of a formulation of theophylline, dyphylline, and proxyphylline.⁸

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
This product is soluble in water (50 mg/ml), with heat as needed. It is insoluble in ethanol and ether.³

Storage/Stability
Aminophylline should be kept tightly closed to prevent CO₂ absorption from the atmosphere, which leads to formation of theophylline and decreased solubility in aqueous solutions.³ Stock solutions should be protected from light and prevented from contact with metals.²

References
1. The Merck Index, 12th ed., Entry# 485.