Product Information

Thiamine hydrochloride

Catalog Number T4625
Store at Room Temperature

CAS RN 67-03-8
Synonyms: Vitamin B₁ hydrochloride, Aneurine hydrochloride

Product Description
Molecular Formula: C₁₂H₁₇ClN₄OS ⋅ HCl
Molecular Weight: 337.27
Melting point: 1248 °C (decomposition)
λₑₓₘₘₚₚ = 235 nm (Eₐₘₚ = 11.3, 0.1 M phosphate buffer, pH 7.0)
267 nm (Eₐₘₚ = 8.3, 0.1 M phosphate buffer, pH 7.0)

Thiamine (Vitamin B₁) is one of the essential vitamins and is required for carbohydrate metabolism. Thiamine is biosynthesized by microorganisms and plants, and may be found in whole grains, meat products, milk, vegetables, legumes, and fruit. Deficiency of thiamine in the diet leads to a syndrome known as beri-beri. This is characterized by peripheral neuritis, muscle wasting, and muscle weakness.

This product is manufactured by chemical synthesis.

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), yielding a clear, colorless solution. The pH of a 1% (w/v) solution in water is 3.13, and of a 0.1% in water is 3.58. It is also soluble in glycerol (1 g/18 ml), 95% ethanol (1 g/100 ml), absolute ethanol (1 g/315 ml). It is practically insoluble in ether, benzene, hexane, and chloroform.

Thiamine hydrochloride is destroyed by alkali solutions and alkaline drugs, such as sodium phenobarbital, and by oxidizing and reducing agents. It can be precipitated with tannins (source is wine) and reagents which precipitate alkaloids such as Mayer's reagent, mercuric chloride, picric acid, and iodine.

Storage/Stability
Store thiamine hydrochloride at room temperature.

Aqueous solutions at pH 3.5 can be sterilized at 120 °C, but solutions above pH 5 are heat sensitive.

References
1. The Merck Index, 12th ed. Entry# 9430.

JLH, RXR, MAM 08/12-1