

# Thiamine hydrochloride

(Vitamin B1 hydrochloride)

Cell Culture Tested

**Product Code: TC173**

## Product Description :

Molecular Weight: 337.27

Molecular Formula:  $C_{12}H_{17}ClN_4OS.HCl$

CAS NO.: 67-03-8

Synonym: Vitamin B1 hydrochloride

Thiamine is extensively used in cell culture and is an important component of the basal media formulations and serum.

Thiamine is regulated by calmodulin and is a required by cells via a carrier-mediated system. The active form of this vitamin is synthesized from ATP and thiamine by thiamine diphosphokinase. TPP (an enzyme cofactor) contains enzymes that are involved in energy metabolism and amino acid synthesis. If thiamine is not provided to the cells in vitro, pyruvate cannot be metabolized effectively. The metabolism of pyruvate to acetyl-CoA undergoes a critical reaction in the cells that is mediated by the pyruvate dehydrogenase complex.

TPP is also a cofactor of two enzymes that are involved in the citric acid cycle. These enzymes bind and decarboxylate the alpha-keto acids and facilitate the transfer of the aldehydes to enzyme CoA. For the synthesis of the three amino acids, such as valine, isoleucine and leucine, TPP containing enzymes are required. All three of these amino acids are synthesized from pyruvate, which requires thiamine for its metabolism.

## Quality Control:

### Appearance

White to off-white crystals or powder.

### Solubility

Clear colorless solution at 5gm in 100ml of water .

### Water (KF)

NMT 5%

### Assay

NLT 98%

### Cell Culture Test

Passes

## Storage and Shelf Life:

Store at 2-8°C away from bright light.

Shelf life is 36 months.

Use before expiry date given on the product label.

## Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ Publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.