

## Material Safety Data Sheet

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Version 1.1  
According to 91/155/EEC

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1 - Product and Company Information

Product Name THIAMINE HYDROCHLORIDE, PH EUR  
Product Number 04573

Company Sigma-Aldrich Pty, Ltd  
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Castle Hill NSW 1765  
Australia

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## 2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
THIAMINE HYDROCHLORIDE, FOR MANUFACTURING	67-03-8	200-641-8	None

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Formula C12H17N4OS.ClH.Cl  
Molecular Weight 337.27 AMU  
Synonyms Aneurine hydrochloride \* Apate drops \* Beatine \*  
Bedome \* Begiolan \* Benerva \* Bequin \* Berin \*  
Betabion hydrochloride \* Betalin S \* Betaxin \*  
Bethiazine \* Beuion \* Bevitex \* Bevitine \* Bewon \*  
Biuno \* Bivatin \* Bivita \* Clotiamina \*  
Eskapen \* Eskaphen \* Lixa-Beta \* Metabolin \*  
Slowten \* THD \* Thiadoxine \* Thiaminal \* Thiamin chloride \*  
Thiamin dichloride \* Thiamine chloride \*  
Thiamine dichloride \* Thiamine hydrochloride \*  
Thiaminium chloride hydrochloride \* Thiamol \*  
Thiavit \* Tiamidon \* Tiaminal \* Trophite \* USAF CB-20 \*  
Vetalin S \* Vinothiam \* Vitamin B1 hydrochloride \*  
Vitaneuron

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## 3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT  
Not hazardous according to Directive 67/548/EC.

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## 4 - First Aid Measures

## AFTER INHALATION

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

## AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious

amounts of water.

#### AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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### 5 - Fire Fighting Measures

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#### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

#### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6 - Accidental Release Measures

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#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

#### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: Keep tightly closed.  
Store at 2-8°C

#### SPECIAL REQUIREMENTS: Store under inert gas. Hygroscopic.

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### 8 - Exposure Controls / Personal Protection

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#### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Wear dust mask.  
Hand Protection: Protective gloves.  
Eye Protection: Chemical safety goggles.

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### 9 - Physical and Chemical Properties

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Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	260 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	N/A	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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## 10 - Stability and Reactivity

### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides, Hydrogen chloride gas.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

RTECS NUMBER: XI7350000

### ACUTE TOXICITY

LDLO

Intramuscular

Woman

5 MG/KG

Remarks: Behavioral:Coma. Vascular:BP lowering not characterized in autonomic section. Skin and Appendages: Allergic (Multiple organ involvement) Anaphylaxix.

LD50

Oral

Rat

3710 mg/kg

Remarks: Peripheral Nerve and Sensation:Spastic paralysis with

or without sensory change. Behavioral:Tremor. Lungs, Thorax, or Respiration:Other changes.

LD50  
Intraperitoneal  
Rat  
481 MG/KG

LD50  
Subcutaneous  
Rat  
560 MG/KG

LD50  
Intravenous  
Rat  
118 MG/KG

LD50  
Oral  
Mouse  
8224 mg/kg

LD50  
Intraperitoneal  
Mouse  
200 MG/KG

LD50  
Subcutaneous  
Mouse  
266 MG/KG

LD50  
Intravenous  
Mouse  
74 MG/KG

LD50  
Intravenous  
Cat  
75 MG/KG

LD50  
Intravenous  
Rabbit  
117 MG/KG

Remarks: Behavioral:Muscle contraction or spasticity. Lungs, Thorax, or Respiration:Cyanosis. Lungs, Thorax, or Respiration:Other changes.

LD50  
Subcutaneous  
Guinea pig  
872 MG/KG

LD50  
Intravenous  
Guinea pig  
140 MG/KG

LD50

Intravenous  
Pigeon  
180 MG/KG

LD50  
Subcutaneous  
Frog  
2600 MG/KG

#### SIGNS AND SYMPTOMS OF EXPOSURE

Exposure to high concentrations can cause nausea, tightness of the throat, itching, and weakness. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.  
Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: May cause eye irritation.  
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.  
Ingestion: May be harmful if swallowed.

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#### 12 - Ecological Information

No data available.

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#### 13 - Disposal Considerations

#### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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#### 14 - Transport Information

RID/ADR  
Non-hazardous for road transport.

IMDG  
Non-hazardous for sea transport.

IATA  
Non-hazardous for air transport.

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#### 15 - Regulatory Information

#### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

S-PHRASES: 22 24/25  
Do not breathe dust. Avoid contact with skin and eyes.

Not hazardous according to Directive 67/548/EC.

#### COUNTRY SPECIFIC INFORMATION

Germany  
WGK: 1

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#### 16 - Other Information

**WARRANTY**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

**DISCLAIMER**

Caution: for manufacturing, processing, or repacking. This material is not sterile and has not been pyrogen-tested.