


<b>MSDS</b>	<b>Material Safety Data Sheet</b>	24 Hour Emergency Telephone: 908-859-2151 CHEMTREC: 1-800-424-9300
		National Response in Canada CANUTEC: 613-996-6666
		Outside U.S. and Canada Chemtrec: 703-527-3887
From: Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg, NJ 08865		
NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.		
All non-emergency questions should be directed to Customer Service (1-800-582-2637) for assistance.		

## THIAMINE HYDROCHLORIDE

### 1. Product Identification

**Synonyms:** 3-[(4-Amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methylthiazolium chloride monohydrochloride; Vitamin B1 hydrochloride

**CAS No.:** 67-03-8

**Molecular Weight:** 337.27

**Chemical Formula:** C<sub>12</sub>H<sub>18</sub>N<sub>4</sub>OSCl<sub>2</sub>

**Product Codes:**

J.T. Baker: 4110, 5586, V744

Mallinckrodt: 2722

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Thiamine Hydrochloride	67-03-8	98 - 100%	Yes

### 3. Hazards Identification

#### Emergency Overview

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES

Storage Color Code: Green (General Storage)

#### Potential Health Effects

##### Inhalation:

No adverse health effects expected from inhalation.

##### Ingestion:

Low toxicity. Excessive oral doses may cause "thiamine shock," which may include weakness, burning sensation, nausea, gastrointestinal hemorrhage, pulmonary edema, collapse, and death.

##### Skin Contact:

No adverse effects expected.

##### Eye Contact:

No adverse effects expected.

##### Chronic Exposure:

Repeated ingestion of large doses may cause drug fever and immediate hypersensitivity.

##### Aggravation of Pre-existing Conditions:

No information found.

## 4. First Aid Measures

**Inhalation:**

Not expected to require first aid measures.

**Ingestion:**

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

**Skin Contact:**

Wash exposed area with soap and water. Get medical advice if irritation develops.

**Eye Contact:**

Wash thoroughly with running water. Get medical advice if irritation develops.

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## 5. Fire Fighting Measures

**Fire:**

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

**Explosion:**

Not considered to be an explosion hazard.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

None established.

**Ventilation System:**

In general, dilution ventilation is a satisfactory health hazard control for this substance. However, if conditions of use create discomfort to the worker, a local exhaust system should be considered.

**Personal Respirators (NIOSH Approved):**

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear protective gloves and clean body-covering clothing.

**Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

White, granular powder.

**Odor:**

Yeast/nut-like odor.

**Solubility:**

100 g/100 ml water

**Density:**

No information found.

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**  
Not applicable.  
**Melting Point:**  
260C (500F)  
**Vapor Density (Air=1):**  
No information found.  
**Vapor Pressure (mm Hg):**  
No information found.  
**Evaporation Rate (BuAc=1):**  
No information found.

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## 10. Stability and Reactivity

**Stability:**  
Stable under ordinary conditions of use and storage. Forms a hydrate on exposure to air.  
**Hazardous Decomposition Products:**  
May emit oxides of carbon, oxides of sulfur, oxides of nitrogen, and hydrogen chloride gas when heated to decomposition.  
**Hazardous Polymerization:**  
Will not occur.  
**Incompatibilities:**  
Alkalis, alkaline drugs, oxidizing and reducing agents.  
**Conditions to Avoid:**  
Heat, moisture, incompatibles.

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## 11. Toxicological Information

Oral rat LD50: 3710 mg/kg

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Thiamine Hydrochloride (67-03-8)	No	No	None

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## 12. Ecological Information

**Environmental Fate:**  
No information found.  
**Environmental Toxicity:**  
No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

Not regulated.

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## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Thiamine Hydrochloride (67-03-8)	Yes	Yes	Yes	Yes
-----\Chemical Inventory Status - Part 2\-----				
Ingredient	---Canada---			
	Korea	DSL	NDSL	Phil.
Thiamine Hydrochloride (67-03-8)	Yes	Yes	No	Yes
-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	RQ	TPQ	List	Chemical Catg.

Thiamine Hydrochloride (67-03-8)	No	No	No	No
-----\Federal, State & International Regulations - Part 2\-----				
Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8 (d)	
Thiamine Hydrochloride (67-03-8)	No	No	No	

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No  
SARA 311/312: Acute: No Chronic: No Fire: No Pressure: No  
Reactivity: No (Pure / Solid)

**Australian Hazchem Code:** None allocated.

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: 0 Flammability: 0 Reactivity: 0

**Label Hazard Warning:**

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

**Label Precautions:**

None.

**Label First Aid:**

Not applicable.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No Changes.

**Disclaimer:**

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