



## Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.  
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Phillipsburg, NJ 08865



All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

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

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.

# Strychnine

## 1. Product Identification

**Synonyms:** Strychnos  
**CAS No.:** 57-24-9  
**Molecular Weight:** 334.42  
**Chemical Formula:** C<sub>21</sub>H<sub>22</sub>N<sub>2</sub>O<sub>2</sub>  
**Product Codes:** 4061

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Strychnine	57-24-9	90 - 100%	Yes

## 3. Hazards Identification

### Emergency Overview

**POISON! DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.**

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

Health Rating: 3 - Severe (Poison)  
Flammability Rating: 1 - Slight  
Reactivity Rating: 0 - None  
Contact Rating: 1 - Slight  
Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES  
Storage Color Code: Blue (Health)

### Potential Health Effects

#### Inhalation:

Strychnine is rapidly absorbed following inhalation with symptoms similar to ingestion. Seizures can occur within 5 minutes. May be fatal.

#### Ingestion:

Extremely toxic. Rapidly absorbed from the gastrointestinal and respiratory tracts. Principal symptom is violent convulsions, sometimes beginning within a few minutes of ingestion. Any sound or movement may elicit seizure activity. Other symptoms include: muscular cramps (especially in the neck and back), joint stiffness, muscle twitching, restlessness, headache, severe blood-oxygen deficiency in body tissues, and cyanosis. Kidney failure may occur as a secondary effect of central nervous system toxicity. Death often occurs due to respiratory arrest.

#### Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain.

#### Eye Contact:

May cause mechanical irritation. Strychnine may be absorbed through the eyes' mucous membranes. It is unlikely that enough strychnine will be absorbed to produce severe symptoms, but mild effects may occur.

#### Chronic Exposure:

No information found.

#### Aggravation of Pre-existing Conditions:

Persons with a history of convulsive disorders may be more susceptible to the effects of this agent.

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## 4. First Aid Measures

### **Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

### **Ingestion:**

DO NOT INDUCE VOMITING! Spontaneous vomiting and convulsions may occur. Activated charcoal should be administered immediately to minimize gastrointestinal absorption. Administer charcoal in a slurry (aqueous or mixed with saline cathartic or sorbitol). The FDA suggests 240 ml of diluent /30g of charcoal. Usual charcoal dose is 30 to 100 grams in adults. Never give anything by mouth to an unconscious person. Get medical attention immediately.

### **Skin Contact:**

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

### **Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

### **Note to Physician:**

Emesis and gastric lavage are not recommended since these procedures may precipitate convulsions. Activated charcoal should be administered immediately to minimize gastrointestinal absorption. Closely monitor breathing, cardiovascular function, and kidney function. Metabolic acidosis and electrolyte abnormalities should be corrected. Control convulsions with a short-acting barbiturate or use of inhalation anesthesia.

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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. Sealed containers may rupture when heated.

### **Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide. Do not allow water runoff to enter sewers or waterways.

### **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

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect from physical damage. Separate from oxidizing materials. Store in the dark. 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:**

For Strychnine:

– OSHA Permissible Exposure Limit (PEL) –

0.15 mg/m<sup>3</sup> (TWA).

– ACGIH Threshold Limit Value (TLV) –

0.15 mg/m<sup>3</sup> (TWA).

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or

the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. 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-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

Colorless crystals or white to yellow powder.

**Odor:**

Odorless.

**Solubility:**

Negligible (< 0.1%)

**Specific Gravity:**

1.36 @ 20C/4C

**pH:**

9.8 (saturated aqueous solution).

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

0

**Boiling Point:**

Decomposes at normal ATM (760 mm Hg); boils under pressure (5 mm Hg) at 270C (518F).

**Melting Point:**

275 - 285C (527 - 545F)

**Vapor Density (Air=1):**

11.0

**Vapor Pressure (mm Hg):**

Not applicable.

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Emits highly toxic fumes when heated to decomposition. Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strychnine is incompatible with strong oxidizers, alkali hydroxides and carbonates, aromatic ammonia spirit, bromides, iodides.

**Conditions to Avoid:**

Heat, flame, sources of ignition, light and incompatibles.

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## 11. Toxicological Information

For Strychnine: LD50 oral rat: 2350 ug/kg. Investigated as a reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Strychnine (57-24-9)	No	No	None

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## 12. Ecological Information

**Environmental Fate:**

For Strychnine: When released into the soil, this material has the potential to photolyze on soil surfaces. Volatilization and chemical hydrolysis are not expected to be important fate processes. When released into water, this material has the potential to photolyze. Volatilization, chemical hydrolysis and bioaccumulation in aquatic organisms are not expected to be important fate processes. When released into the atmosphere, this material has the potential to be removed by direct photolysis or dry deposition.

**Environmental Toxicity:**

For Strychnine: This material is expected to be toxic to terrestrial life. This material is expected to be very

toxic to aquatic life. The LC50/96-hour values for fish are less than 1 mg/l.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste 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.

## 14. Transport Information

### Domestic (Land, D.O.T.)

**Proper Shipping Name:** STRYCHNINE  
**Hazard Class:** 6.1  
**UN/NA:** UN1692  
**Packing Group:** I  
**Information reported for product/size:** 5G

### International (Water, I.M.O.)

**Proper Shipping Name:** STRYCHNINE  
**Hazard Class:** 6.1  
**UN/NA:** UN1692  
**Packing Group:** I  
**Information reported for product/size:** 5G

### International (Air, I.C.A.O.)

**Proper Shipping Name:** STRYCHNINE  
**Hazard Class:** 6.1  
**UN/NA:** UN1692  
**Packing Group:** I  
**Information reported for product/size:** 5G

## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Strychnine (57-24-9)	Yes	Yes	No	Yes

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	-----Canada-----			
	Korea	DSL	NDSL	Phil.
Strychnine (57-24-9)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	RQ	TPQ	List	Chemical Catg.
Strychnine (57-24-9)	10	100*	No	Strychnine s

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	-RCRA-		-TSCA-
	CERCLA	261.33	8(d)
Strychnine (57-24-9)	10	P108	No

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

**Australian Hazchem Code:** 2X

**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: 3 Flammability: 0 Reactivity: 0

**Label Hazard Warning:**

POISON! DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

**Label Precautions:**

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

**Label First Aid:**

If swallowed, DO NOT INDUCE VOMITING! Spontaneous vomiting and convulsions may occur. Activated charcoal should be administered immediately. Never give anything by mouth to an unconscious person. Get medical attention immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 3.

**Disclaimer:**

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