

## Material Safety Data Sheet

Date Printed: 17/OCT/2005  
Date Updated: 13/MAR/2004  
Version 1.2  
According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

---

#### 1 - Product and Company Information

---

Product Name	QUININE, 90%
Product Number	145904
Company	Sigma-Aldrich Pty. Ltd. 12 Anella Avenue Castle Hill NSW 2154 Australia
Technical Phone #	+61 2 9841 0555 (1800 800 097)
Fax	+61 2 9841 0500 (1800 800 096)
Emergency Phone #	+44 8701906777 (1800 448 465)

---

#### 2 - Composition/Information on Ingredients

---

Product Name	CAS #	EC no	Annex I Index Number
QUININE	130-95-0	205-003-2	None
Formula	C20H24N2O2		
Molecular Weight	324.44 AMU		
Synonyms	Chinin (German) * Cinchonan-9-ol, 6'-methoxy-, (8-alpha,9R)- (9CI) * (8-alpha,9R)-6'-Methoxycinchonan-9-ol * 6-Methoxycinchonine * (-)-Quinine * (8S,9R)-Quinine		

---

#### 3 - Hazards Identification

---

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT  
Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

---

#### 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 skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

##### 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.

---

## 5 - Fire Fighting Measures

---

### 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.

---

## 6 - Accidental Release Measures

---

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

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

### 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.

---

## 7 - Handling and Storage

---

### HANDLING

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

### STORAGE

Conditions of Storage: Keep tightly closed.

### SPECIAL REQUIREMENTS: Light sensitive.

---

## 8 - Exposure Controls / Personal Protection

---

### ENGINEERING CONTROLS

Mechanical exhaust required.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

### PERSONAL PROTECTIVE EQUIPMENT

Special Protective Measures: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

---

## 9 - Physical and Chemical Properties

---

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	

MP/MP Range	175 °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

---

## 10 - Stability and Reactivity

### STABILITY

Stable: Stable.

Conditions of Instability: May decompose on exposure to light.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and nitrogen oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

---

## 11 - Toxicological Information

RTECS NUMBER: VA6020000

### ACUTE TOXICITY

LD50

Intraperitoneal

Mouse

115 MG/KG

LD50

Intravenous

Mouse

68 MG/KG

LD50

Oral

Guinea pig

1800 mg/kg

### SENSITIZATION

Respiratory: May cause allergic respiratory reaction.

Skin: May cause allergic skin reaction.

## SIGNS AND SYMPTOMS OF EXPOSURE

Repeated exposure can cause: Blood effects. Stomach pains, vomiting, diarrhea. Asthma.

## ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

## TARGET ORGAN INFORMATION

Nerves. Ears. Eyes. Cardiovascular system. Skeletal muscle.

Pancreas. G.I. System.

## CHRONIC EXPOSURE - MUTAGEN

Mammal

100 UMOL/L

Cell Type: lymphocyte

DNA

## CHRONIC EXPOSURE - TERATOGEN

Species: Woman

Dose: 20 MG/KG

Route of Application: Oral

Exposure Time: (4-5W PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Body wall.

Species: Woman

Dose: 27 UG/KG

Route of Application: Oral

Exposure Time: (46-48D PREG)

Result: Specific Developmental Abnormalities: Cardiovascular (circulatory) system. Specific Developmental Abnormalities: Body wall.

Species: Woman

Dose: 60 MG/KG

Route of Application: Oral

Exposure Time: (7W PREG)

Result: Specific Developmental Abnormalities: Hepatobiliary system. Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Central nervous system.

Species: Rabbit

Dose: 280 MG/KG

Route of Application: Subcutaneous

Exposure Time: (7-8D PREG)

Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Central nervous system.

## CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat

Dose: 10 MG/KG

Route of Application: Intramuscular

Exposure Time: (5D PREG)  
Result: Effects on Fertility: Abortion. Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Newborn: Stillbirth.

Species: Rabbit  
Dose: 650 MG/KG  
Route of Application: Subcutaneous  
Exposure Time: (4-8D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetal death.

---

## 12 - Ecological Information

---

No data available.

---

## 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.

---

## 14 - Transport Information

---

### RID/ADR

Non-hazardous for road transport.

### IMDG

Non-hazardous for sea transport.

### IATA

Non-hazardous for air transport.

---

## 15 - Regulatory Information

---

### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: Xn

Harmful.

R-PHRASES: 36/37/38-42/43

Irritating to eyes, respiratory system and skin. May cause sensitization by inhalation and skin contact.

S-PHRASES: 22-26-36/37-45

Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### SWITZERLAND

SWISS POISON CLASS: 3

---

## 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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

**DISCLAIMER**

For R&D use only. Not for drug, household or other uses.