



Warfarin: sc-205888

# MATERIAL SAFETY DATA SHEET

The Power to Question

## SECTION 1 - PRODUCT AND COMPANY INFORMATION

Product Name: Warfarin

Catalog Number: sc-205888

Supplier: Santa Cruz Biotechnology, Inc.  
2145 Delaware Ave.  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

Emergency: ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENT

Substance Name	CAS #	SARA 313
3-(4-ACETONYLBENZYL)-4-HYDROXYCOUMARIN	81-81-2	Yes

Formula:  $C_{19}H_{16}O_4$ 

Molecular Weight: 308.33 AMU

## SECTION 3 - HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

Highly Toxic (USA) Toxic (EU).

May cause harm to the unborn child. Harmful in contact with skin. Very toxic if swallowed. Toxic: danger of serious damage to health by prolonged exposure if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Calif. Prop. 65 developmental hazard. Target organ(s): Blood.

### HMIS RATING

HEALTH: 3\*  
FLAMMABILITY: 0  
REACTIVITY: 0

### NFPA RATING

HEALTH: 4  
FLAMMABILITY: 0  
REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## SECTION 4 - FIRST AID MEASURES

### ORAL EXPOSURE

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

### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

### DERMAL EXPOSURE

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

### EYE EXPOSURE

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.

## SECTION 5 - FIRE FIGHTING MEASURES

### FLASH POINT

N/A

### AUTOIGNITION TEMP

N/A

### FLAMMABILITY

N/A

### EXTINGUISHING MEDIA

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

### FIREFIGHTING

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

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

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

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

Wear self-contained breathing apparatus, 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.

## SECTION 7 - HANDLING AND STORAGE

### HANDLING

User Exposure: Do not breathe dust. Do not get in eyes, on skin, on clothing.

Avoid prolonged or repeated exposure.

### STORAGE

Suitable: Keep tightly closed.

## SECTION 8 - EXPOSURE CONTROLS / PPE

### ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

### EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	0.1 MG/M3
USA	MSHA Standard-air	TWA	0.1 MG/M3
USA	OSHA.PEL 8H	TWA	0.1 MG/M3
New Zealand	OEL		
Remarks: check	ACGIH TLV		
USA	NIOSH	TWA	0.1 MG/M3

## SECTION 9 - PHYSICAL/CHEMICAL PROPERTIES

pH	.N/A
BP/BP Range	.N/A
MP/MP Range	162.0 - 164.0° C
Freezing Point	.N/A
Vapor Pressure	.N/A
Vapor Density	.N/A
Saturated Vapor Conc.	.N/A
Bulk Density	.N/A
Odor Threshold	.N/A
Volatile%	.N/A
VOC Content	.N/A
Water Content	.N/A

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Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	Solubility in Water: Insoluble. Solvent: 50 mg/ml dioxane 50 mg/ml, Acetone Ether

N/A = not available

### SECTION 10 - STABILITY AND REACTIVITY

#### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents, Strong acids, Strong bases.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

### SECTION 11 - TOXICOLOGICAL INFORMATION

#### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: Harmful if absorbed through 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 fatal if swallowed.

#### TARGET ORGAN(S) OR SYSTEM(S)

Blood.

#### SIGNS AND SYMPTOMS OF EXPOSURE

Inhibition of blood coagulation. Abnormal clotting, bruising or bleeding.

#### TOXICITY DATA

Oral

Human

6.667 mg/kg

LDLO

Oral

Rat

1.6 mg/kg

LD50

Inhalation

Rat

320 mg/m<sup>3</sup>

LC50

Skin

Rat

1400 mg/kg

LD50

Remarks: Kidney, Ureter, Bladder:Hematuria. Behavioral:Muscle weakness. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Chromodacryorrhea.

Oral

Mouse

3 mg/kg

LD50

Intraperitoneal

Mouse

750 MG/KG

LD50

Intravenous

Mouse

165 MG/KG

LD50

Oral

Dog

3 mg/kg

LD50

Oral

Cat

6 mg/kg

LD50

Oral

Rabbit

800 mg/kg

LD50

Oral

Pig

1 mg/kg

LD50

Oral

Guinea pig

180 mg/kg

LD50

Oral

Chicken

942 mg/kg

LD50

Remarks: Blood:Hemorrhage. Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change. Lungs, Thorax, or Respiration:Dyspnea.

#### CHRONIC EXPOSURE - TERATOGEN

Result: May cause congenital malformation in the fetus.

Species: Woman

Dose: 28 MG/KG

Route of Application: Oral

Exposure Time: (1-20W PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Woman

Dose: 8400 UG/KG

Route of Application: Oral

Exposure Time: (1-8W PREG)

Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue).

Species: Woman

Dose: 33600 UG/KG

Route of Application: Oral

Exposure Time: (1-32W PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system. Specific Developmental Abnormalities: Respiratory system. Effects on Newborn: Physical.

Species: Woman

Dose: 12 MG/KG

Route of Application: Intramuscular

Exposure Time: (27-31W PREG)

Result: Effects on Embryo or Fetus: Fetal death.

Species: Woman

Dose: 6450 UG/KG

Route of Application: Unreported

Exposure Time: (27-33W PREG)

Result: Effects on Embryo or Fetus: Fetal death.

Species: Rabbit

Dose: 10 MG/KG

Route of Application: Intramuscular

Exposure Time: (8-28D PREG)

Result: Specific Developmental Abnormalities: Other developmental abnormalities. Effects on Newborn: Stillbirth.

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#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Mouse  
Dose: 240 MG/KG  
Route of Application: Intravenous  
Exposure Time: (2-3D PREG)  
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

#### SECTION 12 - ECOLOGICAL INFORMATION

No data available.

#### SECTION 13 - DISPOSAL CONSIDERATIONS

##### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

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.

#### SECTION 14 - TRANSPORT INFORMATION

##### DOT

Proper Shipping Name: Toxic solids, organic, n.o.s.  
UN#: 2811  
Class: 6.1  
Packing Group: Packing Group I  
Hazard Label: Toxic substances.

##### IATA

Proper Shipping Name: Toxic solid, organic, n.o.s.  
IATA UN Number: 2811  
Hazard Class: 6.1  
Packing Group: I

#### SECTION 15 - REGULATORY INFORMATION

##### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T  
Indication of Danger: Toxic.  
R: 61-48/25-52/53  
Risk Statements: May cause harm to the unborn child. Also toxic: danger of serious damage to health by prolonged exposure if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
S: 53-45-61  
Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

##### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Highly Toxic (USA) Toxic (EU).  
Risk Statements: May cause harm to the unborn child. Harmful in contact with skin. Very toxic if swallowed. Toxic: danger of serious damage to health by prolonged exposure if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
Safety Statements: Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
US Statements: Calif. Prop. 65 developmental hazard. Target organ(s): Blood.

##### UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes  
DEMINIMIS: 1 %  
NOTES: This product is subject to SARA section 313 reporting requirements.  
TSCA INVENTORY ITEM: Yes

##### UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65  
California Prop - 65: This product is or contains chemical(s) known to the state of California to cause developmental toxicity. This product is or contains chemical(s) known to the state of California to cause developmental toxicity.

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

#### SECTION 16 - OTHER INFORMATION

*The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.*

01/20/2011