

# Tin(II) stearate

sc-215989



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Tin(II) stearate

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
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

### PRODUCT USE

■ Intermediate. Reagent

### SYNONYMS

C36-H70-O4-Sn, [CH3(CH2)16CO2]2Sn, "octadecanoic acid, tin(2+) salt", "tin(2+) octadecanoate", "octadecanoic acid, tin (II) salt", "tin (II) octadecanoate", "stearic acid, tin(2+) salt", "tin(2+) stearate", "stearic acid tin (II) salt", "tin stearate [Sn(C18H35O2)2]", "tin distearate, pure", "tin dioctadecanoate"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	2	
Body Contact:	2	
Reactivity:	1	
Chronic:	2	

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Harmful if swallowed.

Irritating to eyes, respiratory system and skin.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

#### SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Tin salts are not very toxic.

However, at high concentration, nausea, vomiting and diarrhea can occur.

■ Ingestion of anionic surfactants may produce diarrhea, bloated stomach, and occasional vomiting.

#### EYE

■ This material can cause eye irritation and damage in some persons.

■ Direct eye contact with some anionic surfactants in high concentration can cause severe damage to the cornea.

Low concentrations can cause discomfort, excess blood flow, and corneal clouding and swelling.

#### SKIN

■ This material can cause inflammation of the skin on contact in some persons.

■ The material may accentuate any pre-existing dermatitis condition.

■ Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.

■ Anionic surfactants can cause skin redness and pain, as well as a rash.

Cracking, scaling and blistering can occur.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.

Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

#### INHALED

■ The material can cause respiratory irritation in some persons.

The body's response to such irritation can cause further lung damage.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

■ Fine mists generated from plant/ vegetable (or more rarely from animal) oils may be hazardous.

Extreme heating for prolonged periods, at high temperatures, may generate breakdown products which include acrolein and acrolein-like substances.

#### CHRONIC HEALTH EFFECTS

■ Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following.

Chronic exposure to tin dusts and fume can result in substantial amounts being deposited in the lungs and result in reduced lung function and difficulty breathing.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
stannous stearate	6994-59-8	>98

## Section 4 - FIRST AID MEASURES

#### SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

#### EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

#### SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

## INHALED

- If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

## NOTES TO PHYSICIAN

- for poisons (where specific treatment regime is absent):

-----BASIC TREATMENT  
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- Establish a patent airway with suction where necessary.
  - Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available

## EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.

## FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.

## GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible solid which burns but propagates flame with difficulty.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.

Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), acrolein, metal oxides, other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

May emit corrosive fumes.

## FIRE INCOMPATIBILITY

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

## PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

Respirator:

Particulate

## Section 6 - ACCIDENTAL RELEASE MEASURES

### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

### MAJOR SPILLS

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.

- Do NOT cut, drill, grind or weld such containers.

· In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

### RECOMMENDED STORAGE METHODS

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
US - Alaska Limits for Air Contaminants	stannous stearate (Tin oxide (as Sn))		2						
Canada - Northwest Territories Occupational Exposure Limits (English)	stannous stearate (Tin, inorganic compounds, except SnH and SnO (as Sn))		2		4				
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	stannous stearate (Tin, inorganic compounds, (as Sn) (except SnH4 and SnO2))	-	2	-	4				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	stannous stearate (Tin, inorganic compounds (except oxides) (as Sn))		2						
US - Idaho - Limits for Air Contaminants	stannous stearate (Tin (inorganic compounds, except oxides) as (Sn))		2						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	stannous stearate (Tin, inorganic compounds (except oxides) (as Sn))		2						
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	stannous stearate (Tin, inorganic compounds (except oxides) (as Sn))		2						
US - Michigan Exposure Limits for Air Contaminants	stannous stearate (Tin, Inorganic compounds (except oxides)(as Sn))		2						
US - Hawaii Air Contaminant Limits	stannous stearate (Tin, inorganic compounds (except oxides) (as Sn))		2		4				

US - Michigan Exposure Limits for Air Contaminants	stannous stearate (Tin, Inorganic compounds (except oxides) Organic compounds (as Sn))	0.1		
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	stannous stearate (Tin, inorganic compounds (except oxides) (as Sn))	2		
US - Oregon Permissible Exposure Limits (Z-1)	stannous stearate (Tin (inorganic compounds, except oxides) as Sn)	2		
US - Minnesota Permissible Exposure Limits (PELs)	stannous stearate (Tin, organic compounds (as Sn))	0.1		
US NIOSH Recommended Exposure Limits (RELs)	stannous stearate (Tin (organic compounds, as Sn))	0.1		[*Note: The REL applies to all organic tin compounds except Cyhexatin.]; [skin]
US OSHA Permissible Exposure Levels (PELs) - Table Z1	stannous stearate (Tin, organic compounds (as Sn))	0.1		
US - Idaho - Limits for Air Contaminants	stannous stearate (Tin (organic compounds) as (Sn))	0.1		
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	stannous stearate (Tin, organic compounds (as Sn))	0.1		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	stannous stearate (Tin, organic compounds (as Sn))	0.1		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	stannous stearate (Tin, organic compounds (as Sn))	0.1		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	stannous stearate (Tin, (as Sn): organic compounds)	0.1	0.2	Skin

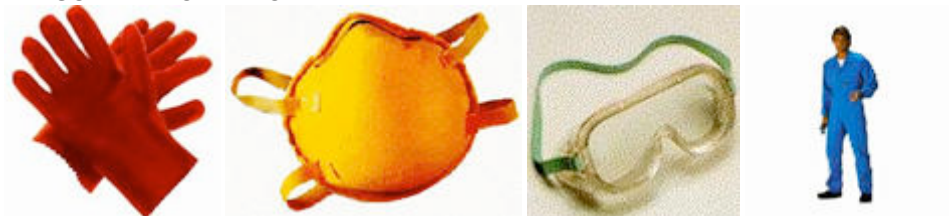
US - Washington Permissible exposure limits of air contaminants	stannous stearate (Tin (as Sn) - Organic compounds)	0.1	0.3	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	stannous stearate (Tin, organic compounds (as Sn) - Skin)	0.1	0.2	
US - Hawaii Air Contaminant Limits	stannous stearate (Tin, organic compounds (as Sn))	0.1	0.2	
Canada - Nova Scotia Occupational Exposure Limits	stannous stearate (Tin - Organic compounds (as Sn))	0.1	0.2	
Canada - Northwest Territories Occupational Exposure Limits (English)	stannous stearate (Tin, organic <sup>4</sup> compounds <sup>2</sup> (as Sn) - Skin)	0.1	0.2	
US - Alaska Limits for Air Contaminants	stannous stearate (Tin, organic compounds (as Sn))	0.1		
Canada - British Columbia Occupational Exposure Limits	stannous stearate (Tin - Organic compounds, as Sn)	0.1	0.2	Skin
Canada - Alberta Occupational Exposure Limits	stannous stearate (Tin, as Sn: Organic compounds)	0.1	0.2	
US - California Permissible Exposure Limits for Chemical Contaminants	stannous stearate (Tin, organic compounds, as Sn)	0.1	0.2	
Canada - Ontario Occupational Exposure Limits	stannous stearate (Tin, as Sn Organic compounds, as Sn)	0.1		Skin (organic compounds)
US ACGIH Threshold Limit Values (TLV)	stannous stearate (Tin - Organic compounds (as Sn))	0.1	0.2	
Canada - Prince Edward Island Occupational Exposure Limits	stannous stearate (Tin - Organic compounds (as Sn))	0.1	0.2	
US - Oregon Permissible Exposure Limits (Z-1)	stannous stearate (Tin (organic compounds))	0.1		
Canada - Quebec Permissible Exposure Values	stannous stearate (Tin: Organic)	0.1	0.2	

for Airborne Contaminants (English) compounds (as Sn))

US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	stannous stearate (Tin, organic compounds (as Sn))	0.1
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ENDOELTABLE

**PERSONAL PROTECTION**



**RESPIRATOR**

Particulate  
Consult your EHS staff for recommendations

**EYE**

- Safety glasses with side shields.
- Chemical goggles.

**HANDS/FEET**

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

· Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

**OTHER**

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

**ENGINEERING CONTROLS**

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.

· Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL PROPERTIES**

Solid.  
Does not mix with water.

State	Divided solid	Molecular Weight	685.66
Melting Range (°F)	Not available	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Partly miscible

Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

## APPEARANCE

Off-white to brown crystalline powder with distinct odour; does not mix well with water.

No experimental bioaccumulation data appear to be available but log Kow data from various sources are higher than 4, which indicates that fatty acids and natural lipids have a potential for bioaccumulating in aquatic organisms

Material	Value
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## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

### STORAGE INCOMPATIBILITY

- Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

stannous stearate

### TOXICITY AND IRRITATION

#### STANNOUS STEARATE:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
- Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

Fatty acid salts are of low acute toxicity. Their skin and eye irritation potential is chain length dependent and decreases with increasing chain length - they are poorly absorbed through the skin nor are they skin sensitisers. The available repeated dose toxicity data demonstrate the low toxicity of the fatty acids and their salts. Also, they are not considered to be mutagenic, genotoxic or carcinogenic, and are not reproductive or developmental toxicants. Accidental ingestion of fatty acid salt containing detergent products is not expected to result in any significant adverse health effects. This assessment is based on toxicological data demonstrating the low acute oral toxicity of fatty acid salts and the fact that not a single fatality has been reported in the UK following accidental ingestion of detergents containing fatty acid salts. Also in a report published by the German Federal Institute for Health Protection of Consumers and Veterinary Medicine, detergent products were not mentioned as dangerous products with a high incidence of poisoning. The estimated total human exposure to fatty acid salts, from the different exposure scenarios for the handling and use of detergent products containing fatty acid salts, showed a margin of exposure (MOE) of 258,620. This extremely large MOE is large enough to be reassuring with regard to the relatively small variability of the hazard data on which it is based. Also, in the UK, the recommended dietary fatty acid intake by the Department of Health is about 100 g of fatty acids per day or 1.7 g (1700 mg) of fatty acids per kilogram body weight per day. This exposure is several orders of magnitude above that resulting from exposure to fatty acid salts in household cleaning products. Based on the available data, the use of fatty acid salts in household detergent and cleaning products does not raise any safety concerns with regard to consumer.

No significant acute toxicological data identified in literature search.

### SKIN

stannous stearate	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin	Skin Designation	X
stannous stearate	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants - Skin	Skin Designation	X
stannous stearate	US - Washington Permissible exposure limits of air contaminants - Skin	Skin	X
stannous stearate	US - Minnesota Permissible Exposure Limits (PELs) - Skin	Skin Designation	X

stannous stearate	US - Hawaii Air Contaminant Limits - Skin Designation	Skin Designation	X
stannous stearate	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	X
stannous stearate	Canada - Alberta Occupational Exposure Limits - Skin	Substance Interaction	1

## Section 12 - ECOLOGICAL INFORMATION

No data

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

## Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**stannous stearate (CAS: 6994-59-8) is found on the following regulatory lists;**

"US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Adhesives"

## Section 16 - OTHER INFORMATION

*Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.*

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: Nov-7-2009

Print Date:Feb-2-2011