

# Material Safety Data Sheet

## ZINC STEARATE

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### 1. Product Identification

**Synonyms:** Dibasic zinc stearate; stearic acid zinc salt; octadecanoic acid zinc salt, zinc distearate.**CAS No.:** 557-05-1**Molecular Weight:** 632.2**Chemical Formula:** Zn(C<sub>18</sub>H<sub>35</sub>O<sub>2</sub>)<sub>2</sub>

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Zinc Stearate	557-05-1	90 - 100%	Yes

The exact product composition depends on the source and purity of the fatty acid used.

### 3. Hazards Identification

**Emergency Overview****WARNING! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR.****SAF-T-DATA** (™) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Life)

Flammability Rating: 2 - Moderate

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

**Potential Health Effects****Inhalation:**

Symptoms from excessive inhalation of dust may include coughing and difficult breathing.

**Ingestion:**

Large dose may cause abdominal spasms and diarrhea.

**Skin Contact:**

May cause skin irritation. Constant exposure to excessive amounts may cause eczema.

**Eye Contact:**

May cause redness, pain.

**Chronic Exposure:**

Grossly excessive and chronic inhalation of the dust may cause a progressive chemical pneumonitis, cyanosis, and pulmonary edema.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders, impaired respiratory function, or a history of pulmonary disease should not be exposed to dusts.

## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. Get medical attention for any breathing difficulty.

**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.

## 5. Fire Fighting Measures

**Fire:**

Flash point: 279C (534F) OC

Autoignition temperature: 790C (1454F)

Minimum dust cloud ignition temperature is 690C (1274F). Contact with strong oxidizers may cause fire.

**Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Minimum explosible concentration: 0.02 g/l (air) (Bureau of Mines, 1968). Maximum explosion pressure: 68 lb./sq. in. @ 0.3 ounces per cubic foot. Sensitive to static discharge.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide. Water or foam may cause frothing.

**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. Pressure from the extinguishing media may cause severe dusting. Melted fatty acid can give "grease" type fire. Explosion hazards apply only to dusts, not to granular forms of this product. Actual temperatures and concentrations may vary by product composition.

## 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.

## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating dust and/or static electricity. Empty only into inert or non-flammable atmosphere. Emptying contents into a non-inert atmosphere where flammable vapors may be present could cause a flash fire or explosion due to electrostatic discharge. 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.

## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

-OSHA Permissible Exposure Limit (PEL):

15 mg/m<sup>3</sup> total dust, 5 mg/m<sup>3</sup> respirable fraction for zinc stearate

-ACGIH Threshold Limit Value (TLV):

10 mg/m<sup>3</sup> total dust for stearates (does not include stearates of toxic metals) A4 - Not classifiable as a Human Carcinogen.

### **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:**

Gloves and lab coat, apron or coveralls.

### **Eye Protection:**

Use chemical safety goggles.

## 9. Physical and Chemical Properties

### **Appearance:**

Fine, soft white powder, granules, prills or flakes.

### **Odor:**

Slight odor of fatty acid.

### **Solubility:**

Insoluble in water, alcohol, ether; slightly soluble in benzene.

### **Density:**

1.095

### **pH:**

No information found.

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

0

### **Boiling Point:**

Decomposes.

### **Melting Point:**

120 - 130C (248 - 266F)

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Burning may produce carbon monoxide, carbon dioxide, and zinc oxides.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strong oxidizers, strong alkalis, peroxides, oxygen, and acids.

**Conditions to Avoid:**

Heat, flames, ignition sources and incompatibles.

## 11. Toxicological Information

LD50 oral, rat = > 10 gm/Kg.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Zinc Stearate (557-05-1)	No	No	None

## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

## 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.

## 14. Transport Information

IATA: NOT RESTRICTED TO IATA DGR ACCORDING TO SPECIAL PROVISION A123

IMO: NOT RESTRICTED TO IMDG CODE ACCORDING TO SPECIAL PROVISION 304

## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Zinc Stearate (557-05-1)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	--Canada--			
	Korea	DSL	NDSL	Phi I.
Zinc Stearate (557-05-1)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Zinc Stearate (557-05-1)	No	No	No	Zinc compoun

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Zinc Stearate (557-05-1)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No  
 SARA 311/312: Acute: No Chronic: No Fire: Yes 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: **1** Reactivity: **0**

**Label Hazard Warning:**

WARNING! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR.

**Label Precautions:**

Store in a tightly closed container.

Avoid dust cloud in presence of an ignition source.

Maintain adequate ventilation.

**Label First Aid:**

Not applicable.