

Foli- Zyme 8-0-3

Material Safety Data Sheet (rev.03/09)

**SECTION I PRODUCT IDENTIFICATION**

	<b>NFPA Hazard Rating</b>	
HEALTH HAZARD 1	FIRE HAZARD 0	REACTIVITY 0
<b>Sara/ Title III Hazard Categories (See Section IX)</b>		
Immediate (ACUTE) Health: none	Reactive Hazard: none	
Delayed (Chronic) Health: Yes	Fire Hazard: none	Sudden Release of Pressure: not applic
Company Name:	Stoller Enterprises, Inc.	
Address:	4001 West Sam Houston Pkwy N. Houston, Texas 77043 U.S.A	
Emergency Phone Number:	CHEMTREC 1-800-424-9300	
Phone Number for Information:	713-461-1493	
Chemical Family:	Organic salt solution	
Chemical Name & Synonyms:	Metallic salts	
Formula:	See Section II Composition/ Ingredients Information	
Trade name & Synonyms:	FOLIZYME (8%)	

**SECTION II PHYSICAL AND CHEMICAL CHARACTERISTICS**

INGREDIENTS:	CAS#	Approx. %	TLV
Ferrous Chloride	10125-13-0	<5	1 mg/ m <sup>3</sup> as Cu
Zinc Chloride	7646-85-7	<5	TWA 1 mg/ m <sup>3</sup> as Zn
Sodium molybdate, dilhydrat	10102-40-6	<1	5 mg/ m <sup>3</sup> as Mo
Manganese Chloride	7773-01-5	<5	C1 5 mg/ m <sup>3</sup> as Mn
Cobalt sulfate	13455-34-0	<1	100 mg/ m <sup>3</sup> as Co
Ferric Chloride	7705-08-0	<5	TWA 1 mg/ m <sup>3</sup> as Fe

**SECTION III PHYSICAL AND CHEMICAL CHARACTERISTICS**

<b>BOILING POINT:</b>	110°C (>230°F)	<b>VAPOR PRESSURE (mm/ Hg):</b>	
<b>MELTING POINT:</b>	N/ A	<b>VAPOR DENSITY (air = 1):</b>	>1
<b>SPECIFIC GRAVITY:</b>	1.23	<b>REACTIVITY IN WATER:</b>	N/ A
<b>SOLUBILITY IN WATER:</b>	>99%	<b>EVAPORATION RATE:</b>	<1
<b>APPEARANCE AND ODOR:</b>	greenish clear liquid with no odor.		

**SECTION IV FIRE AND EXPLOSION DATA**

<b>FLASH POINT:</b>	Not Established	<b>LEL:</b>	<b>UEL:</b>
<b>FLAMMABLE LIMITS:</b>	Not Established		
<b>EXTINGUISHER MEDIA:</b>	Water, CO <sub>2</sub>		
<b>SPECIAL FIRE FIGHTING PROCEDURES:</b>	Wear self- contained breathing apparatus.		
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS:</b>	Toxic fumes may be generated at elevated temperatures.		

**SECTION V****PHYSICAL HAZARDS (REACTIVITY DATA)**

**STABILITY:**  
**CONDITIONS TO AVOID:**  
**INCOMPATIBILITY, MATERIALS TO AVOID:**  
**HAZARDOUS DECOMPOSITION PRODUCTS:**  
**HAZARDOUS POLYMERIZATION:**  
**MAY OCCUR:**                      **WILL NOT OCCUR: X**

Stable: Yes            Unstable:  
Stable under normal conditions.  
Oxidizers.  
Oxides of sulfur and nitrogen.  
None.

**SECTION VI****HEALTH HAZARDS****A. EXPOSURE LIMITS:**

1. OSHA Permissible Exposure Limit (PEL): Not Established
2. Threshold Limit Value (TLV): 1 mg/ m<sup>3</sup> as Zn  
1 mg/ m<sup>3</sup> as Fe, ceiling level.  
5 mg/ m<sup>3</sup> as Mn  
1 mg/ m<sup>3</sup> as Cu, ceiling level.

**B. CARCINOGEN OR POTENTIAL CARCINOGEN:****C. EFFECTS OF OVEREXPOSURE:****1. ACUTE:**

**EYES:** May cause severe irritation and lesions.

**SKIN:** May burn on extended contact or on moist or injured skin.

**INHALATION:** May be irritating to respiratory tracts.

**INGESTION:** May chemically burn mouth and throat; may cause nausea, vomiting, abdominal pain and diarrhea.

**D. EMERGENCY FIRST AID PROCEDURES:**

**EYES:** Flush thoroughly with running water for 15 minutes. Seek medical attention.

**SKIN:** Wash thoroughly with soap and water. Rinse thoroughly. Seek medical attention if inflammation occurs. Do not attempt to neutralize with chemicals.

**INHALATION:** Remove from exposure area if irritation exists from mists in the event of massive inhalation. Seek medical attention.

**INGESTION:** Give as much warm water as possible, induce vomiting and call physician immediately. Never give anything by mouth to an unconscious person. If symptoms of central nervous system stimulation occur or skin rash is present, give 10% dextrose in water or saline as fluid balance indicator.

**E. ADDITIONAL INFORMATION: ANIMAL TOXICITY DATA:**

- Ferric chloride LD<sub>50</sub> (lpr- mouse) = 59 mg/ kg  
Copper Chloride LD<sub>50</sub> (oral- rat) = 140 mg/ kg  
Sodium molybdate LD<sub>50</sub> (oral- rat) = 245 mg/ kg  
Zinc chloride LD<sub>50</sub> (oral- rat) = 350 mg/ kg  
Cobalt sulfate LD<sub>50</sub> (oral- rat) = 768 mg/ kg  
Manganese chloride LD<sub>50</sub> (oral- mouse) = 1715 mg/ kg

**SECTION VII****SPECIAL PRECAUTIONS & SPILL/ LEAK PROCEDURES**

**HANDLING AND STORAGE:** Keep containers closed and dry. Wash hands thoroughly after rinsing.

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED:** Prevent material from entering sewers or waterways. Collect and contain for salvage or disposal. Absorb on inert media and dispose of as a solid waste.

**WASTE DISPOSAL METHODS:** Since emptied packages retain product residue follow label warnings even after package is emptied. Landfill in compliance with all federal, state and local laws concerning health and environment.

**SECTION VIII****SPECIAL PROTECTION / CONTROL MEASURES**

**LOCAL EXHAUST:** Provide general or local exhaust ventilation.

**SPECIAL VENTILATION:** not applicable

**PROTECTIVE GLOVES:** Wear protective clothing impervious to this material.

**EYE PROTECTION:** Use chemical goggles. Use full- face respirator when there is any likelihood of splashes.

**OTHER SPECIAL CLOTHING/ EQUIPMENT:** Eye wash

**WORK/ HYGIENIC PRACTICES:** Wash thoroughly after handling. Do not smoke when handling chemicals.

**SECTION IX****ENVIRONMENTAL EFFECTS DATA**

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This product has been tested for environmental effects. Based upon data on the component materials, no undue hazard is expected under the anticipated conditions of handling, storage and use. This product could be toxic to marine organisms if discharged into a body of water. Water contaminated may exhibit accelerated eutrophication if amounts of product are large.

**SECTION X****TRANSPORTATION DATA**

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**PROPER SHIPPING NAME:** FOLI- ZYME

**DOT HAZARD CLASS:** Copper chloride is a R.Q when this product is shipped in bulk.