



Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table border="1"> <tr><td>Health Hazard</td><td style="text-align: center;">1</td></tr> <tr><td>Fire Hazard</td><td style="text-align: center;">1</td></tr> <tr><td>Reactivity</td><td style="text-align: center;">0</td></tr> </table>	Health Hazard	1	Fire Hazard	1	Reactivity	0	
Health Hazard	1							
Fire Hazard	1							
Reactivity	0							
		See Section 15.						

Section 1. Chemical Product and Company Identification		Page Number: 1
Common Name/Trade Name	Trypsin, USP	Catalog Number(s) T1872
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS# 9002-07-7
Commercial Name(s)	Parenzyme; Parenzymol; Tryptar; Trypure	RTECS YN5075000
Synonym	Trypsin, USP	TSCA TSCA 8(b) inventory: Trypsin, USP
Chemical Name	Trypsin	CI# Not available.
Chemical Family	Not available.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000
Chemical Formula	Not available.	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
Name	CAS #	Exposure Limits			% by Weight
		TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	
1) Trypsin, USP	9002-07-7				100
Toxicological Data on Ingredients	Trypsin, USP: ORAL (LD50): Acute: >5000 mg/kg [Rat]. 1450 mg/kg [Mouse].				

Section 3. Hazards Identification	
Potential Acute Health Effects	Hazardous in case of eye contact (irritant), of inhalation (lung irritant, lung sensitizer). Slightly hazardous in case of skin contact (irritant), of ingestion.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to lungs. Repeated or prolonged exposure to the substance can produce target organs damage.

Continued on Next Page

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Not available.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	May be combustible at high temperature.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Not available.
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	As with most organic solids, fire is possible at elevated temperatures
Special Remarks on Explosion Hazards	Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions	Keep locked up.. Keep away from heat. Keep away from sources of ignition. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area. Although it is stable at room temperature, it is preferable to store it between 0 to 5 degrees C in order to reduce deterioration.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystalline solid. Amorphous solid powder.)	Odor	Odorless.
Molecular Weight	Not available.	Taste	Not available.
pH (1% soln/water)	Not available.	Color	White to yellowish. White to light Beige or Tan.
Boiling Point	Not available.		
Melting Point	Not available.		
Critical Temperature	Not available.		
Specific Gravity	Not available.		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water.		
Solubility	Soluble in cold water, hot water. Insoluble in alcohol or glycerol. Readily soluble in Sorensen's sodium phosphate buffer solution.		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Excess heat, moisture, incompatible materials
Incompatibility with various substances	Reactive with oxidizing agents.
Corrosivity	Not available.
Special Remarks on Reactivity	Heat liable like most enzymes
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 1450 mg/kg [Mouse].
Chronic Effects on Humans	MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. May cause damage to the following organs: lungs.
Other Toxic Effects on Humans	Hazardous in case of inhalation (lung irritant, lung sensitizer). Slightly hazardous in case of skin contact (irritant), of ingestion.
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May affect genetic material (mutagenic) based on animal test data
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: May cause skin irritation and a burning sensation. Eyes: May cause eye irritation and possible burns of the eye. May cause rapid destruction of the cornea. Inhalation: May cause nose and respiratory tract irritation with glossitis, pharyngitis, hoarseness, and systemic reactions. May cause severe allergic respiratory reaction. Ingestion: May cause gastrointestinal tract irritation with nausea, vomiting, and diarrhea. It may affect behavior (general anesthetic) and blood. Chronic Potential Health Effects: Skin: Repeated or prolonged exposure may cause hypersensitization or dermatitis. Inhalation: Repeated or prolonged inhalation of dust may cause respiratory tract irritation or allergic asthmatic reaction.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks on the Products of Biodegradation	Not available.

Continued on Next Page

Section 13. Disposal Considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification Not a DOT controlled material (United States).

Identification Not applicable.

Special Provisions for Transport Not applicable.

DOT (Pictograms)



Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations New Jersey: Trypsin, USP
TSCA 8(b) inventory: Trypsin, USP

California Proposition 65 Warnings

Other Regulations OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications


WHMIS (Canada) Not controlled under WHMIS (Canada).

DSCL (EEC) R36/37/38- Irritating to eyes, respiratory system and skin. R42- May cause sensitization by inhalation. S2- Keep out of the reach of children. S22- Do not breathe dust. S24- Avoid contact with skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37- Wear suitable protective clothing and gloves.

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	1
Reactivity	0
Personal Protection	E

National Fire Protection Association (U.S.A.)

Health  Flammability
Reactivity
Specific hazard

WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



**TDG (Canada)
(Pictograms)**



**ADR (Europe)
(Pictograms)**



Protective Equipment



Gloves.



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent.



Splash goggles.

Section 16. Other Information

MSDS Code T4082

References Not available.

Other Special Considerations Not available.

Validated by Sonia Owen on 7/3/2003.

Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.