



## MATERIAL SAFETY DATA SHEET

Section I – Product Information			
<b>Product Name or Identity:</b>	Papain		
<b>Manufacturer's Name:</b>	Acumedia Manufacturers, Inc.	<b>Emergency Phone No.:</b>	517/372-9200
	740 Shiawassee	<b>Fax No.:</b>	517/372-2006
	Lansing, Michigan 48912	<b>e-mail:</b>	foodsafety@neogen.com
<b>Date Prepared or Revised:</b> 10/10/04			

Section II – Hazardous Ingredients / Identity Information			
<b>Hazardous Components</b> (Specific Chemical Identity: Common Names)	<b>OSHA PEL</b> (Permissible Exposure Limits)	<b>ACGIH TLV</b> (Threshold Limit Value)	<b>Toxicity Data LD<sub>50</sub></b>
Papain (CAS No. 9001-73-4)	N/A	N/A	ORL-RAT, >4000 mg/kg

Section III – Physical Characteristics	
<b>Boiling Point:</b> N/A	<b>Specific Gravity (H<sub>2</sub>O = 1):</b> N/A
<b>Vapor Pressure (mm Hg.):</b> Negligible	<b>Melting Point:</b> N/A
<b>Vapor Density (AIR = 1):</b> N/A	<b>Evaporation Rate (Butyl Acetate = 1):</b> N/A
<b>Solubility in Water:</b> Readily Soluble	
<b>Appearance and Odor:</b> Solid, light tan, amorphous powder	

Section IV – Fire and Explosion Hazard Data	
<b>Flash Point (Method Used):</b> Not applicable	<b>Flammable Limits:</b> LEL (Lower Explosive Limit) - N/A UEL:(Upper Explosive Limit) – N/A
<b>Extinguishing Media:</b> Suitable extinguishing agents. CO <sub>2</sub> , extinguishing powder or water spray.	
<b>Special Fire Fighting Procedures:</b> Fight larger fires with water or alcohol resistant foam. Firefighters should wear protective equipment and self-contained breathing apparatus.	
<b>Unusual Fire and Explosion Hazards:</b> During heating or in case of fire poisonous gases are produced.	

Section V – Reactivity Data			
<b>Stability</b>	Unstable		Conditions to Avoid: Stable under normal temperatures and pressures.
	Stable	X	
<b>Incompatibility (Materials to Avoid):</b> Incompatible with strong oxidizers.			
<b>Hazardous Decomposition or Byproducts:</b> Carbon monoxide (CO) in cases of incomplete combustion and Carbon dioxide (CO <sub>2</sub> ).			
<b>Hazardous Polymerization</b>	May Occur		<b>Conditions to Avoid:</b> Incompatible materials, dust generation, excess heat and strong oxidizers.
	Will Not Occur	X	

Section VI – Health Hazard Data			
<b>Route(s) of Entry:</b>	Inhalation? Yes	Skin? Yes	Ingestion? Yes
<b>Health Hazards:</b> (Acute and Chronic)	Irritate. Irritating to eyes, respiratory system and skin at high concentrations.		
<b>Carcinogenicity:</b>	NTP? No (National Toxicology Program)	IARC Monographs? No (International Agency for Research in Cancer)	OSHA Regulated? No
<b>Signs and Symptoms of Exposure:</b> Repeated inhalation can cause sensitization to susceptible individuals. May cause skin sensitization.			
<b>Medical Conditions Generally Aggravated by Exposure:</b> May cause allergic reaction affecting respiratory tract, digestive tract, or eye irritation.			
<b>Emergency / First Aid Procedures</b>	Ingestion: If swallowed, seek medical attention immediately.		
	Inhalation: In case of unconsciousness, place patient on side position for transportation. Supply fresh air or oxygen; seek medical attention.		
	Eye Contact: Rinse opened eye for at least 15 minutes. Seek medical attention.		
	Skin Contact: Immediately wash with plenty of soap and water for at least 15 minutes. Seek medical attention.		

Section VII – Precautions for Safe Handling and Use	
<b>Accidental Release Measures:</b> Ventilate spill area. Wear suitable protective clothing. Wipe up with damp sponge or mop.	
<b>Waste Disposal Method:</b> Dispose in accordance with all applicable federal, state, and local environmental regulations.	
<b>Handling and Storing:</b> Keep container tightly closed. Store in cool, dry conditions. Do not store together with oxidizing and acidic materials. Containers may be hazardous when empty because they retain product residues.	
<b>Other Precautions:</b> Remove contaminated clothing immediately. Ensure good ventilation / exhaustion at the workplace. Prevent formation of dust. Avoid prolonged or repeated exposure.	

Section VIII – Control Measures		
<b>Respiratory Protection</b> (Specify Type): None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask.		
<b>Ventilation:</b>	Local Exhaust: 50 – 100 CFM	<b>Special:</b> N/A
	Mechanical (General): N/A	<b>Other:</b> N/A
<b>Protective Gloves:</b> Proper disposable gloves		<b>Eye Protection:</b> Chemical resistant safety goggles
<b>Other Protective Clothing or Equipment:</b> Uniform, lab coat or disposable lab wear.		
<b>Work / Hygienic Practices:</b> Follow the usual precautionary measures for handling chemicals / powder. Keep away from food and beverages. Immediately remove all soiled and contaminated clothing. Avoid contact with eyes, skin, and clothing.		

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