



MATERIAL SAFETY DATA SHEET

Section I – Product Information			
Product Name or Identity:	Papain		
Manufacturer's Name:	Acumedia Manufacturers, Inc.	Emergency Phone No.:	517/372-9200
	740 Shiawassee	Fax No.:	517/372-2006
	Lansing, Michigan 48912	e-mail:	foodsafety@neogen.com
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Section II – Hazardous Ingredients / Identity Information			
Hazardous Components (Specific Chemical Identity: Common Names)	OSHA PEL (Permissible Exposure Limits)	ACGIH TLV (Threshold Limit Value)	Toxicity Data LD ₅₀
Papain (CAS No. 9001-73-4)	N/A	N/A	ORL-RAT, >4000 mg/kg

Section III – Physical Characteristics	
Boiling Point: N/A	Specific Gravity (H₂O = 1): N/A
Vapor Pressure (mm Hg.): Negligible	Melting Point: N/A
Vapor Density (AIR = 1): N/A	Evaporation Rate (Butyl Acetate = 1): N/A
Solubility in Water: Readily Soluble	
Appearance and Odor: Solid, light tan, amorphous powder	

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

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

Section VI – Health Hazard Data			
Route(s) of Entry:	Inhalation? Yes	Skin? Yes	Ingestion? Yes
Health Hazards: (Acute and Chronic)	Irritate. Irritating to eyes, respiratory system and skin at high concentrations.		
Carcinogenicity:	NTP? No (National Toxicology Program)	IARC Monographs? No (International Agency for Research in Cancer)	OSHA Regulated? No
Signs and Symptoms of Exposure: Repeated inhalation can cause sensitization to susceptible individuals. May cause skin sensitization.			
Medical Conditions Generally Aggravated by Exposure: May cause allergic reaction affecting respiratory tract, digestive tract, or eye irritation.			
Emergency / First Aid Procedures	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
Accidental Release Measures: Ventilate spill area. Wear suitable protective clothing. Wipe up with damp sponge or mop.
Waste Disposal Method: Dispose in accordance with all applicable federal, state, and local environmental regulations.
Handling and Storing: 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.
Other Precautions: Remove contaminated clothing immediately. Ensure good ventilation / exhaustion at the workplace. Prevent formation of dust. Avoid prolonged or repeated exposure.

Section VIII – Control Measures		
Respiratory Protection (Specify Type): None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask.		
Ventilation:	Local Exhaust: 50 – 100 CFM	Special: N/A
	Mechanical (General): N/A	Other: N/A
Protective Gloves: Proper disposable gloves	Eye Protection: Chemical resistant safety goggles	
Other Protective Clothing or Equipment: Uniform, lab coat or disposable lab wear.		
Work / Hygienic Practices: 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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