

Section 1. Product and Company Identification

Product Name Papain
CAS Number 9001-73-4

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EMERGENCY RESPONSE NUMBER
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Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture

Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Respiratory sensitization (Category 1), H334
Specific target organ toxicity- single exposure (Category 3), Respiratory system, H335

GHS Label Elements

Pictograms:



Signal word: DANGER

Hazard and precautionary statements

Hazard statements

Causes skin irritation
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation

Precautionary statements

If medical advice is needed, have product container or label at hand
Keep out of reach of children
Read label before use
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
In case of inadequate ventilation wear respiratory protection



Use only outdoors or in a well-ventilated area
IF ON SKIN: Wash with soap and water
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.
Continue rinsing
If skin irritation occurs: Get medical advice/attention
If eye irritation persists get medical advice/attention
Store locked up
Dispose of contents and container to an approved waste disposal plant

Combustible Dust Hazard: May form combustible dust concentrations in air (during processing).

Other Non-GHS Classification

HMIS Rating

Health: 2

Flammability: 0

Reactivity: 0

Personal Protection: X

NFPA Rating

Health: 2

Flammability: 0

Reactivity: 0

Section 3. Composition / Information on Ingredients

Common Name Papain
CAS Number 9001-73-4

COMPONENT	CAS NUMBER	CONCENTRATION
Papain	9001-73-4	> 99%

Section 4. First Aid Measures

Description of first-aid measures

Inhalation: Loosen clothing as necessary and position individual in a comfortable position. Move exposed to fresh air. Give artificial respiration if necessary. If breathing is difficult give oxygen. Get medical assistance if cough or other symptoms appear.

Skin contact: Rinse/flush exposed skin gently using soap and water for 15 - 20 minutes. Seek medical advice if discomfort or irritation persists.

Eye contact: Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15 - 20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.



Ingestion: Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort, or vomiting persists. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Irritation, Nausea, Headache, Shortness of breath.

Indication of any immediate medical attention and special treatment needed: If seeking medical attention, provide SDS document to physician. Physician should treat symptomatically.

Section 5. Firefighting Measures

Extinguishing media

Suitable extinguishing agents: Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Use water, dry chemical, chemical foam, carbon dioxide, or alcohol-resistant foam.

For safety reasons unsuitable extinguishing agents

Special hazards arising from the substance or mixture: Combustion products may include carbon oxides or other toxic vapors. Thermal decomposition can lead to release of irritating gases and vapors.

Advice for firefighters

Protective equipment: Use NIOSH-approved respiratory protection/breathing apparatus.

Additional information (precautions): Move product containers away from fire or keep cool with water spray as a protective measure, where feasible. Use spark-proof tools and explosion-proof equipment. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing.

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Wear protective equipment. Use spark-proof tools and explosion-proof equipment. Ensure that air-handling systems are operational. Ensure adequate ventilation.

Environmental precautions: Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Should not be released into environment.

Methods and material for containment and cleaning up: Keep in suitable closed containers for disposal. Wear protective eyewear, gloves, and clothing. Refer to Section B. Always obey local regulations. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect solids in powder form using vacuum with (HEPA filter). Evacuate personnel to safe areas.

Section 7. Handling and Storage

Precautions for safe handling: Minimize dust generation and accumulation. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. Protect from freezing and physical damage. Keep away from food and beverages. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store in cool, dry conditions in well-sealed containers. Store with like hazards

Section 8. Exposure Controls / Personal Protection

Control Parameters: No applicable occupational exposure limits

Appropriate Engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-GELs) indicated above. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use under a fume hood.

Respiratory protection: Not required under normal conditions of use. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. When necessary use NIOSH approved breathing equipment.

Protection of skin: Select glove material impermeable and resistant to the substance. Select glove material based on rates of diffusion and degradation. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Use proper glove removal technique without touching outer surface. Avoid skin contact with used gloves. Wear protective clothing.

Eye protection: Wear equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses or goggles are appropriate eye protection.

General hygienic measures: Perform routine housekeeping. Wash hands before breaks and at the end of work. Avoid contact with skin, eyes, and clothing. Before wearing wash contaminated clothing.

Section 9. Physical and Chemical Properties

Appearance (physical state, color): Powder, lyophilized

Odor: Not Determined

Odor threshold: Not determined
pH-Value: Not Determined
Melting/Freezing point: Not determined
Boiling point/Boiling range: Not determined
Flash point (Closed Cup): Not determined
Evaporation rate: Not determined
Flammability (solid, gaseous): Not determined
Explosion limit lower: Not determined
Explosion limit upper: Not determined
Vapor pressure: Not determined
Vapor density: Not determined
Relative density: Not determined
Solubilities
Partition coefficient (n-Octanol/Water): Not determined
Auto/Self-ignition temperature: Not determined
Decomposition temperature: Not determined
Viscosity - Kinematic: Not determined
Viscosity - Dynamic: Not determined

Section 10. Stability and Reactivity

Reactivity: Nonreactive under normal conditions.
Chemical stability: Stable under normal conditions.
Possible hazardous reactions: None under normal processing
Conditions to avoid: Incompatible Materials.
Incompatible materials: Strong acids. Strong bases. Oxidizing agents.
Hazardous decomposition products: N/A

Section 11. Toxicological Information

Acute Toxicity:

LD50 Oral - rat: > 4,000 mg/kg

Chronic Toxicity: No additional information.

Corrosion Irritation: No additional information.

Sensitization: No additional information.

Single Target Organ (STOT): No additional information.

Numerical Measures: No additional information.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC

Mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

Section 12. Ecological Information

Ecotoxicity Persistence and degradability: N/A

Bioaccumulative potential: N/A

Mobility in soil: N/A

Other adverse effects: N/A

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

UN Number: Not Regulated.

UN proper shipping name: Not Regulated.

Transport hazard class(es): N/A

Packing group: Not Regulated

Environmental hazard: N/A

Transport in bulk: N/A

Special precautions for user: N/A

Section 15. Regulatory Information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings): Acute

SARA Section 313 (Specific toxic chemical listings): None of the ingredients is listed

RCRA (hazardous waste code): None of the ingredients is listed

TSCA (Toxic Substances Control Act): All ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):
None of the ingredients is listed

Proposition 65 (California)

Chemicals known to cause cancer: None of the ingredients is listed

Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed

Chemicals known to cause developmental toxicity: None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL): All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%): None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%): None of the ingredients is listed

Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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