

# Safety Data Sheet

according to 29CFR1910/1200 and GHS Rev. 3

Effective date : 10.24.2014

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## Papain

### SECTION 1 : Identification of the substance/mixture and of the supplier

**Product name :** Papain

**Manufacturer/Supplier Trade name:**

**Manufacturer/Supplier Article number:** S25764

**Recommended uses of the product and uses restrictions on use:**

**Manufacturer Details:**

AquaPhoenix Scientific  
9 Barnhart Drive, Hanover, PA 17331

**Supplier Details:**

Fisher Science Education  
15 Jet View Drive, Rochester, NY 14624

**Emergency telephone number:**

Fisher Science Education Emergency Telephone No.: 800-535-5053

### SECTION 2 : Hazards identification

**Classification of the substance or mixture:**



**Irritant**



**Environmentally Damaging**

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Respiratory sensitisation (Category 1), H334

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

**Signal word :** Danger

**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/vapours/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

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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:

#### WHMIS NFPA/HMIS



NFPA SCALE (0-4)

Health	2
Flammability	0
Physical Hazard	0
Personal Protection	X

HMIS RATINGS (0-4)

## SECTION 3 : Composition/information on ingredients

### Ingredients:

CAS 9001-73-4

Papain

>99 %

Percentages are by weight

## SECTION 4 : First aid measures

### Description of first aid measures

**After 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.

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

**After 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.

**After swallowing:** 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:

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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 8. 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.

#### Reference to other sections:

### 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

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**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-OELs) 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

<b>Appearance (physical state,color):</b>	Powder, lyophilized	<b>Explosion limit lower: Explosion limit upper:</b>	Not determined Not determined
<b>Odor:</b>	Not Determined	<b>Vapor pressure:</b>	Not determined
<b>Odor threshold:</b>	Not determined	<b>Vapor density:</b>	Not determined
<b>pH-value:</b>	Not Determined	<b>Relative density:</b>	Not determined
<b>Melting/Freezing point:</b>	Not determined	<b>Solubilities:</b>	
<b>Boiling point/Boiling range:</b>	Not determined	<b>Partition coefficient (n-octanol/water):</b>	Not determined
<b>Flash point (closed cup):</b>	Not determined	<b>Auto/Self-ignition temperature:</b>	Not determined

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<b>Evaporation rate:</b>	Not determined	<b>Decomposition temperature:</b>	Not determined
<b>Flammability (solid,gaseous):</b>	Not determined	<b>Viscosity:</b>	a. Kinematic:Not determined b. Dynamic: Not determined
<b>Density:</b> 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:**

### SECTION 11 : Toxicological information

<b>Acute Toxicity:</b>	
<b>Oral:</b>	LD50 Oral - rat - > 4,000 mg/kg
<b>Chronic Toxicity:</b> No additional information.	
<b>Corrosion Irritation:</b> No additional information.	
<b>Sensitization:</b>	No additional information.
<b>Single Target Organ (STOT):</b>	No additional information.
<b>Numerical Measures:</b>	No additional information.
<b>Carcinogenicity:</b>	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
<b>Mutagenicity:</b>	No additional information.
<b>Reproductive Toxicity:</b>	No additional information.

### SECTION 12 : Ecological information

**Ecotoxicity Persistence and degradability:**

**Bioaccumulative potential:**

**Mobility in soil:**

**Other adverse effects:**

### SECTION 13 : Disposal considerations

**Waste disposal recommendations:**

Contact a licensed professional waste disposal service to dispose of this material.Dispose of empty containers as unused product.Product or containers must not be disposed with household garbage.It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US

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40CFR262.11).Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations. Ensure complete and accurate classification.

### SECTION 14 : Transport information

#### UN-Number

Not Regulated.

#### UN proper shipping name

Not Regulated.

#### Transport hazard class(es)

Packing group:Not Regulated

#### Environmental hazard:

Transport in bulk:

Special precautions for user:

### 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

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### Canadian NPRI Ingredient Disclosure list (limit 1%):

None of the ingredients is listed

### SECTION 16 : Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note: The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

### GHS Full Text Phrases:

#### Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

CFR: Code of Federal Regulations (USA)

SARA: Superfund Amendments and Reauthorization Act (USA)

RCRA: Resource Conservation and Recovery Act (USA)

TSCA: Toxic Substances Control Act (USA)

NPRI: National Pollutant Release Inventory (Canada)

DOT: US Department of Transportation

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