

## Safety Data Sheet

**PAPAIN**

**EFFECTIVE DATE: 2016-07-25**

### 1 Product and Company Identification

- 1.1 **Product Name:** Papain
- 1.2 **Product Identifier:** Papain
- 1.3 **Catalog Number:** 07465, 07466
- 1.4 **Product Use:** Laboratory reagent
- 1.5 **Manufacturer/Supplier:** STEMCELL Technologies Inc.  
Suite 500-1618 Station Street  
Vancouver, British Columbia V6A 1B6 Canada
- 1.6 **In Case of Emergency Call:** 1-800-667-0322

### 2 Hazards Identification

#### 2.1 Classification of the substance or mixture

Acute Toxicity: Oral, Category 5  
 Skin Corrosion/Irritation, Category 2  
 Serious Eye Damage/Eye Irritation, Category 2A  
 Respiratory Sensitization, Category 1  
 Specific Target Organ Toxicity (Single Exposure), Category 3, Respiratory System

#### 2.2 Label elements

##### Pictogram



**Signal word** Danger

##### Hazard statement(s)

H303 May be harmful if swallowed.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H335 May cause respiratory irritation.

##### Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P264 Wash skin thoroughly after handling.  
 P280 Wear protective gloves/eye protection/ face protection.  
 P285 In case of inadequate ventilation wear respiratory protection.  
 P302+352 IF ON SKIN: Wash with plenty of soap and water.  
 P304+341 IF INHALED If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.

## Safety Data Sheet

**PAPAIN**
**EFFECTIVE DATE: 2016-07-25**

P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+313	If skin irritation occurs: Get medical advice/ attention.
P337+313	If eye irritation persists, get medical advice/attention.
P342+311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362	Take off contaminated clothing and wash before reuse.
<b>2.3 Other hazards</b>	No data available

### 3 Composition / Information on Ingredients

#### 3.1 Substances

**Synonyms** Papaya peptidase I; Papainase

Hazardous Components (Chemical Name)	CAS #	Concentration	EC #
Papain	9001-73-4	N/A	232-627-2

### 4 First Aid Measures

#### 4.1 Description of first aid measures

##### 4.1.1 If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### 4.1.2 In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### 4.1.3 In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### 4.1.4 If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2.2 and/or in section 11.

#### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

### 5 Fire Fighting Measures

#### 5.1 Extinguishing Media

##### 5.1.1 Suitable Extinguishing Media

Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

##### 5.1.2 Unsuitable Extinguishing Media

No data available

## Safety Data Sheet

**PAPAIN****EFFECTIVE DATE: 2016-07-25**

### 5.2 Special hazards arising from the substance or mixture

#### 5.2.1 Flammable Properties and Hazards

Not flammable or combustible.

#### 5.2.2 Flash Pt

No data available

#### 5.2.3 Autoignition Pt

No data available

#### 5.2.4 Explosive Limits

LEL: No data available

UEL: No data available

#### 5.2.5 Hazardous Combustion Products

No data available

### 5.3 Fire Fighting Instructions

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

---

## 6 Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

---

## 7 Handling and Storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

### 7.2 Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

---

## 8 Exposure Controls/Personal Protection

### 8.1 Exposure limits

Contains no substances with occupational exposure limit values.

### 8.2 Engineering controls

Use mechanical exhaust or laboratory fumehood to avoid exposure.

## Safety Data Sheet

**PAPAIN**
**EFFECTIVE DATE: 2016-07-25**

### 8.3 Personal protective equipment

#### 8.3.1 Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### 8.3.2 Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### 8.3.3 Respiratory protection

Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### 8.3.4 General hygiene considerations

General industrial hygiene practice.

#### 8.3.5 Environmental exposure controls

Do not let product enter drains.

## 9 Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

Appearance	Powder
Odour	No data available
Odour threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	No data available
Solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

**Safety Data Sheet****PAPAIN****EFFECTIVE DATE: 2016-07-25****10 Stability and Reactivity**

<b>10.1 Reactivity</b>	No data available
<b>10.2 Chemical stability</b>	Stable under recommended storage conditions.
<b>10.3 Possibility of hazardous reactions</b>	No data available
<b>10.4 Conditions to avoid</b>	Light
<b>10.5 Incompatible materials</b>	Strong oxidizing agents
<b>10.6 Hazardous decomposition products</b>	No data available

**11 Toxicological Information****11.1 Acute toxicity**

Oral:	LD50 Oral - Rat - > 4000 mg/kg
Inhalation:	No data available
Dermal:	No data available
Other:	No data available

**11.2 Skin corrosion/irritation**

No data available

**11.3 Serious eye damage/eye irritation**

No data available

**11.4 Respiratory and/or skin sensitization**

May cause allergic respiratory reaction.

**11.5 Germ cell mutagenicity**

No data available

**11.6 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.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as A carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**11.7 Reproductive toxicity**

No data available

**11.8 Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation.

**11.9 Specific target organ toxicity - repeated exposure**

No data available

**11.10 Aspiration hazard**

No data available

## Safety Data Sheet

**PAPAIN****EFFECTIVE DATE: 2016-07-25****11.11 Potential health effects**

- Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.  
Ingestion: May be harmful if swallowed.  
Skin: May be harmful if absorbed through skin. Causes skin irritation.  
Eyes: Causes eye irritation.

**11.12 Signs and symptoms of exposure**

Asthma

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**11.13 RTECS #** RU4950000

---

**12 Ecological Information**

- |   |                   |
|---|-------------------|
| <b>12.1 Toxicity</b>                      | No data available |
| <b>12.2 Persistence and degradability</b> | No data available |
| <b>12.3 Bioaccumulative potential</b>     | No data available |
| <b>12.4 Mobility in soil</b>              | No data available |
| <b>12.5 Other adverse effects</b>         | No data available |

---

**13 Disposal Considerations****13.1 Waste disposal method**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**13.2 Contaminated packaging**

Dispose of as unused product.

---

**14 Transport Information**

- |  |  |
|--|--|
| <b>14.1 UN number</b>                  | No data available  |
| <b>14.2 UN proper shipping name</b>    | DOT Not dangerous goods<br>ADR/RID Not dangerous goods<br>IMDG Not dangerous goods<br>IATA Not dangerous goods |
| <b>14.3 Transport hazard class(es)</b> | No data available  |
| <b>14.4 Packing group</b>              | No data available  |
| <b>14.5 Environmental hazards</b>      | No data available  |
| <b>14.6 Special precautions</b>        | No data available  |

---

**15 Regulatory Information****15.1 USA**

## Safety Data Sheet

**PAPAIN****EFFECTIVE DATE: 2016-07-25****SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312:**

Acute Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

Component	CAS #	Revision Date
Papain	9001-73-4	1989-12-01

**New Jersey Right To Know Components**

Component	CAS #	Revision Date
Papain	9001-73-4	1989-12-01

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**15.2 EU**

This SDS was prepared in accordance with Regulation (EC) No.1272/2008.

**15.3 Canada**

WHMIS Classification:

D2A	Very Toxic Material Causing Other Toxic Effects	Respiratory sensitizer
D2B	Toxic Material Causing Other Toxic Effects	Moderate skin irritant Moderate eye irritant Moderate respiratory irritant

This SDS was prepared in accordance with Hazardous Products Regulations (HPR) and WHMIS 2015.

---

**16 Other Information**

**16.1 Prepared by:** Quality Control, STEMCELL Technologies Inc.

**16.2 Revision:** N/A

**16.3 Notice:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. STEMCELL Technologies Inc. shall not be held liable for any damage resulting from handling or from contact with the product. The information contained in this Safety Data Sheet (SDS) is current as of the Effective Date shown in this document and may be subject to amendment by STEMCELL Technologies Inc.

**16.4 Disclaimer:** **THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES.**