



# Safety Data Sheet

Cat. # 786-273

## Fab Fragmentation (Micro) Kit

Size: 10 Reactions





# Fab Digestion Buffer

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Revision date: 5/11/2017 Version: 1.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : Fab Digestion Buffer  
Product code : 003F  
Product group : Blend

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

No additional information available

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
63132-1429 Saint Louis - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

##### Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name                       | Product identifier                        | %     | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------------------|---|-------|---|
| Deionized water            | (CAS-No.) 7732-18-5                       | >= 96 | Not classified  |
| Sodium phosphate monobasic | (CAS-No.) 7558-80-7<br>(EC-No.) 231-449-2 | < 2   | Not classified  |

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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

Hazardous decomposition products in case of fire : Toxic fumes may be released.

#### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Storage temperature : 20 °C

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Exposure controls

##### Appropriate engineering controls:

Ensure good ventilation of the work station.

##### Hand protection:

Protective gloves

##### Eye protection:

Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

##### Environmental exposure controls:

Avoid release to the environment.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : No data available

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|  |                     |
|--|---------------------|
| Odour                                      | : No data available |
| Odour threshold                            | : No data available |
| pH   | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : Not applicable    |
| Freezing point                             | : No data available |
| Boiling point                              | : No data available |
| Flash point                                | : No data available |
| Auto-ignition temperature                  | : No data available |
| Decomposition temperature                  | : No data available |
| Flammability (solid, gas)                  | : Not applicable    |
| Vapour pressure                            | : No data available |
| Relative vapour density at 20 °C           | : No data available |
| Relative density                           | : No data available |
| Solubility                                 | : No data available |
| Log Pow                                    | : No data available |
| Viscosity, kinematic                       | : No data available |
| Viscosity, dynamic                         | : No data available |
| Explosive properties                       | : No data available |
| Oxidising properties                       | : No data available |
| Explosive limits                           | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                             |                  |
|-----------------------------|------------------|
| Acute toxicity (oral)       | : Not classified |
| Acute toxicity (dermal)     | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

| Sodium phosphate monobasic (7558-80-7) |                               |
|--|-------------------------------|
| LD50 oral rat                          | 8290 mg/kg (Rat, Oral)        |
| LD50 dermal rabbit                     | > 7940 mg/kg (Rabbit, Dermal) |

|                                   |                  |
|-----------------------------------|------------------|
| Skin corrosion/irritation         | : Not classified |
| Serious eye damage/irritation     | : Not classified |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity            | : Not classified |
| Carcinogenicity                   | : Not classified |
| Reproductive toxicity             | : Not classified |
| STOT-single exposure              | : Not classified |
| STOT-repeated exposure            | : Not classified |
| Aspiration hazard                 | : Not classified |

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### SECTION 12: Ecological information

#### 12.1. Toxicity

|                          |   |
|--------------------------|---|
| Ecology - general        | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Acute aquatic toxicity   | : Not classified  |
| Chronic aquatic toxicity | : Not classified  |

#### Sodium phosphate monobasic (7558-80-7)

|             |   |
|-------------|---|
| LC50 fish 1 | > 2400 mg/l (OECD 203: Fish, Acute Toxicity Test, 48 h, Leuciscus idus) |
|-------------|---|

#### 12.2. Persistence and degradability

##### Sodium phosphate monobasic (7558-80-7)

|                               |                                   |
|-------------------------------|-----------------------------------|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD)  | Not applicable                    |
| ThOD                          | Not applicable                    |
| BOD (% of ThOD)               | Not applicable                    |

#### 12.3. Bioaccumulative potential

##### Sodium phosphate monobasic (7558-80-7)

|                           |                         |
|---------------------------|-------------------------|
| Log Pow                   | -3.96 (Estimated value) |
| Bioaccumulative potential | Not bioaccumulative.    |

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

|               |                  |
|---------------|------------------|
| UN-No. (ADR)  | : Not applicable |
| UN-No. (IMDG) | : Not regulated  |
| UN-No. (IATA) | : Not regulated  |
| UN-No. (ADN)  | : Not applicable |
| UN-No. (RID)  | : Not applicable |

#### 14.2. UN proper shipping name

|                             |                  |
|-----------------------------|------------------|
| Proper Shipping Name (ADR)  | : Not applicable |
| Proper Shipping Name (IMDG) | : Not regulated  |
| Proper Shipping Name (IATA) | : Not regulated  |
| Proper Shipping Name (ADN)  | : Not applicable |
| Proper Shipping Name (RID)  | : Not applicable |

#### 14.3. Transport hazard class(es)

##### ADR

Transport hazard class(es) (ADR) : Not applicable

##### IMDG

Transport hazard class(es) (IMDG) : Not regulated

##### IATA

Transport hazard class(es) (IATA) : Not regulated

##### ADN

Transport hazard class(es) (ADN) : Not applicable

##### RID

Transport hazard class(es) (RID) : Not applicable

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### 14.4. Packing group

|                      |                  |
|----------------------|------------------|
| Packing group (ADR)  | : Not applicable |
| Packing group (IMDG) | : Not regulated  |
| Packing group (IATA) | : Not regulated  |
| Packing group (ADN)  | : Not applicable |
| Packing group (RID)  | : Not applicable |

### 14.5. Environmental hazards

|                               |  |
|-------------------------------|--|
| Dangerous for the environment | : No                                     |
| Marine pollutant              | : No                                     |
| Other information             | : No supplementary information available |

### 14.6. Special precautions for user

#### Overland transport

No data available

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### Inland waterway transport

No data available

#### Rail transport

No data available

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# Immobilized Papain

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Revision date: 5/11/2017

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : Immobilized Papain  
Product code : 020I  
Product group : Blend

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

No additional information available

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
63132-1429 Saint Louis - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

##### Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name            | Product identifier  | %          | Classification according to Regulation (EC) No. 1272/2008 [CLP]  |
|-----------------|---|------------|--|
| agarose         | (CAS-No.) 9012-36-6<br>(EC-No.) 232-731-8                                 | 50 - 80    | Not classified   |
| glycerol        | (CAS-No.) 56-81-5<br>(EC-No.) 200-289-5                                   | 10 - 50    | Not classified   |
| Deionized water | (CAS-No.) 7732-18-5   | 10 - 50    | Not classified   |
| sodium acetate  | (CAS-No.) 127-09-3<br>(EC-No.) 204-823-8                                  | 0.05 - 0.5 | Not classified   |
| sodium azide    | (CAS-No.) 26628-22-8<br>(EC-No.) 247-852-1<br>(EC Index-No.) 011-004-00-7 | < 0.05     | Acute Tox. 2 (Oral), H300<br>Acute Tox. 1 (Dermal), H310<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |

Full text of H-statements: see section 16

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

|                                       |  |
|---------------------------------------|--|
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. |
| First-aid measures after skin contact | : Wash skin with plenty of water.                                |
| First-aid measures after eye contact  | : Rinse eyes with water as a precaution.                         |
| First-aid measures after ingestion    | : Call a poison center or a doctor if you feel unwell.           |

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

No additional information available

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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

Hazardous decomposition products in case of fire : Toxic fumes may be released.

#### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.  
Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.  
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### sodium azide (26628-22-8)

##### EU - Occupational Exposure Limits

|                                 |                       |
|---------------------------------|-----------------------|
| IOELV TWA (mg/m <sup>3</sup> )  | 0.1 mg/m <sup>3</sup> |
| IOELV STEL (mg/m <sup>3</sup> ) | 0.3 mg/m <sup>3</sup> |

##### United Kingdom - Occupational Exposure Limits

|                               |                       |
|-------------------------------|-----------------------|
| WEL TWA (mg/m <sup>3</sup> )  | 0.1 mg/m <sup>3</sup> |
| WEL STEL (mg/m <sup>3</sup> ) | 0.3 mg/m <sup>3</sup> |



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### sodium acetate (127-09-3)

#### United Kingdom - Occupational Exposure Limits

|                              |   |
|------------------------------|---|
| WEL TWA (mg/m <sup>3</sup> ) | 10 mg/m <sup>3</sup><br>4 mg/m <sup>3</sup> |
|------------------------------|---|

### glycerol (56-81-5)

#### United Kingdom - Occupational Exposure Limits

|                              |                      |
|------------------------------|----------------------|
| WEL TWA (mg/m <sup>3</sup> ) | 10 mg/m <sup>3</sup> |
|------------------------------|----------------------|

## 8.2. Exposure controls

### Appropriate engineering controls:

Ensure good ventilation of the work station.

### Hand protection:

Protective gloves

### Eye protection:

Safety glasses

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|  |                     |
|--|---------------------|
| Physical state                             | : Liquid            |
| Colour                                     | : No data available |
| Odour                                      | : No data available |
| Odour threshold                            | : No data available |
| pH   | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : Not applicable    |
| Freezing point                             | : No data available |
| Boiling point                              | : No data available |
| Flash point                                | : No data available |
| Auto-ignition temperature                  | : No data available |
| Decomposition temperature                  | : No data available |
| Flammability (solid, gas)                  | : Not applicable    |
| Vapour pressure                            | : No data available |
| Relative vapour density at 20 °C           | : No data available |
| Relative density                           | : No data available |
| Solubility                                 | : No data available |
| Log Pow                                    | : No data available |
| Viscosity, kinematic                       | : No data available |
| Viscosity, dynamic                         | : No data available |
| Explosive properties                       | : No data available |
| Oxidising properties                       | : No data available |
| Explosive limits                           | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

#### sodium azide (26628-22-8)

|                    |  |
|--------------------|--|
| LD50 oral rat      | 27 mg/kg   |
| LD50 dermal rabbit | 19 - 48 mg/kg bodyweight (Rabbit, Inconclusive, insufficient data, Dermal) |

#### sodium acetate (127-09-3)

|                    |  |
|--------------------|--|
| LD50 oral rat      | 5200 mg/kg (Rat, Literature study, Oral)         |
| LD50 dermal rabbit | > 10000 mg/kg (Rabbit, Literature study, Dermal) |

#### glycerol (56-81-5)

|                            |  |
|----------------------------|--|
| LD50 oral rat              | 27200 mg/kg (OECD 401: Acute Oral Toxicity, Rat, Female, Experimental value, Oral)                       |
| LD50 dermal                | 56750 mg/kg (4 day(s), Guinea pig, Male / female, Experimental value, Dermal, 14 day(s))                 |
| LC50 inhalation rat (mg/l) | > 2.75 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male, Converted value, Inhalation (vapours)) |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Not classified

#### sodium azide (26628-22-8)

|                    |   |
|--------------------|---|
| LC50 fish 1        | 0.8 mg/l (Equivalent or similar to OECD 203, 96 h, Gasterosteus aculeatus, Fresh water, Experimental value, Nominal concentration)                    |
| EC50 96h algae (1) | 0.35 mg/l (Equivalent or similar to OECD 201, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration) |

#### sodium acetate (127-09-3)

|             |   |
|-------------|---|
| LC50 fish 1 | > 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP) |
|-------------|---|

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|                |   |
|----------------|---|
| EC50 Daphnia 1 | > 1000 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP) |
| ErC50 (algae)  | > 1000 mg/l (ISO 10253, 72 h, Skeletonema costatum, Salt water, Experimental value, GLP)              |

### glycerol (56-81-5)

|                |  |
|----------------|--|
| LC50 fish 1    | 54000 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Lethal)           |
| EC50 Daphnia 1 | > 10000 mg/l (24 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect) |

### 12.2. Persistence and degradability

#### agarose (9012-36-6)

|                               |   |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |
|-------------------------------|---|

#### sodium azide (26628-22-8)

|                               |   |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in soil: not applicable. Biodegradability: not applicable. |
| Chemical oxygen demand (COD)  | Not applicable (inorganic)  |
| ThOD                          | Not applicable (inorganic)  |

#### sodium acetate (127-09-3)

|                               |                                     |
|-------------------------------|-------------------------------------|
| Persistence and degradability | Readily biodegradable in water.     |
| Chemical oxygen demand (COD)  | 0.675 g O <sub>2</sub> /g substance |

#### glycerol (56-81-5)

|                                 |                                     |
|---------------------------------|-------------------------------------|
| Persistence and degradability   | Readily biodegradable in water.     |
| Biochemical oxygen demand (BOD) | 0.87 g O <sub>2</sub> /g substance  |
| Chemical oxygen demand (COD)    | 1.16 g O <sub>2</sub> /g substance  |
| ThOD                            | 1.217 g O <sub>2</sub> /g substance |
| BOD (% of ThOD)                 | 0.71                                |

### 12.3. Bioaccumulative potential

#### agarose (9012-36-6)

|                           |                                    |
|---------------------------|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |
|---------------------------|------------------------------------|

#### sodium azide (26628-22-8)

|                           |                      |
|---------------------------|----------------------|
| Bioaccumulative potential | Not bioaccumulative. |
|---------------------------|----------------------|

#### sodium acetate (127-09-3)

|                               |  |
|-------------------------------|--|
| BCF other aquatic organisms 1 | 3.162 (BCFWIN, Calculated value)               |
| Log Pow                       | -3.72 (Calculated, KOWWIN)                     |
| Bioaccumulative potential     | Low potential for bioaccumulation (BCF < 500). |

#### glycerol (56-81-5)

|                           |  |
|---------------------------|--|
| Log Pow                   | -1.75 (Experimental value, Equivalent or similar to OECD 107, 25 °C) |
| Bioaccumulative potential | Not bioaccumulative.   |

### 12.4. Mobility in soil

#### agarose (9012-36-6)

|                |   |
|----------------|---|
| Ecology - soil | No (test)data on mobility of the substance available. |
|----------------|---|

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| sodium azide (26628-22-8) |                        |
|---------------------------|------------------------|
| Ecology - soil            | Highly mobile in soil. |

| sodium acetate (127-09-3) |   |
|---------------------------|---|
| Log Koc                   | 0 (log Koc, SRC PCKOCWIN v1.66, Calculated value) |
| Ecology - soil            | Highly mobile in soil.                            |

| glycerol (56-81-5) |   |
|--------------------|---|
| Surface tension    | 0.0634 N/m (20 °C, 1000 g/l)                          |
| Ecology - soil     | No (test)data on mobility of the substance available. |

### 12.5. Results of PBT and vPvB assessment

| Component                 |   |
|---------------------------|---|
| sodium acetate (127-09-3) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII<br>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| glycerol (56-81-5)        | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII<br>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No. (ADR) : Not applicable  
UN-No. (IMDG) : Not applicable  
UN-No. (IATA) : Not applicable  
UN-No. (ADN) : Not applicable  
UN-No. (RID) : Not applicable

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not applicable  
Proper Shipping Name (IMDG) : Not applicable  
Proper Shipping Name (IATA) : Not applicable  
Proper Shipping Name (ADN) : Not applicable  
Proper Shipping Name (RID) : Not applicable

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : Not applicable

#### IMDG

Transport hazard class(es) (IMDG) : Not applicable

#### IATA

Transport hazard class(es) (IATA) : Not applicable

#### ADN

Transport hazard class(es) (ADN) : Not applicable

#### RID

Transport hazard class(es) (RID) : Not applicable

### 14.4. Packing group

Packing group (ADR) : Not applicable  
Packing group (IMDG) : Not applicable  
Packing group (IATA) : Not applicable  
Packing group (ADN) : Not applicable  
Packing group (RID) : Not applicable

# Immobilized Papain

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### 14.5. Environmental hazards

Dangerous for the environment : No  
Marine pollutant : No  
Other information : No supplementary information available

### 14.6. Special precautions for user

#### Overland transport

Not applicable

#### Transport by sea

Not applicable

#### Air transport

Not applicable

#### Inland waterway transport

Not applicable

#### Rail transport

Not applicable

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

| Full text of H- and EUH-statements: |   |
|-------------------------------------|---|
| Acute Tox. 1 (Dermal)               | Acute toxicity (dermal), Category 1                               |
| Acute Tox. 2 (Oral)                 | Acute toxicity (oral), Category 2                                 |
| Aquatic Acute 1                     | Hazardous to the aquatic environment — Acute Hazard, Category 1   |
| Aquatic Chronic 1                   | Hazardous to the aquatic environment — Chronic Hazard, Category 1 |
| H300                                | Fatal if swallowed.   |
| H310                                | Fatal in contact with skin.                                       |
| H400                                | Very toxic to aquatic life.                                       |
| H410                                | Very toxic to aquatic life with long lasting effects.             |

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# Phosphate Buffered Saline (PBS), [1X]

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Revision date: 5/11/2017

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : Phosphate Buffered Saline (PBS), [1X]  
Product code : 412A\_P161\_119P  
Product group : Blend

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

No additional information available

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
63132-1429 Saint Louis - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

##### Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name                            | Product identifier                        | %          | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|---------------------------------|---|------------|---|
| Deionized water                 | (CAS-No.) 7732-18-5                       | >= 80      | Not classified  |
| sodium chloride                 | (CAS-No.) 7647-14-5<br>(EC-No.) 231-598-3 | 0.5 - 2    | Not classified  |
| Sodium Phosphate (Dibasic)      | (CAS-No.) 7558-79-4<br>(EC-No.) 231-448-7 | 0.05 - 0.5 | Not classified  |
| Potassium Phosphate (Monobasic) | (CAS-No.) 7778-77-0<br>(EC-No.) 231-913-4 | < 0.05     | Not classified  |
| potassium chloride              | (CAS-No.) 7447-40-7<br>(EC-No.) 231-211-8 | < 0.05     | Not classified  |

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.

# Phosphate Buffered Saline (PBS), [1X]

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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

Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

#### Appropriate engineering controls:

Ensure good ventilation of the work station.

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

#### Environmental exposure controls:

Avoid release to the environment.

# Phosphate Buffered Saline (PBS), [1X]

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

|  |                     |
|--|---------------------|
| Physical state                             | : Liquid            |
| Colour                                     | : No data available |
| Odour                                      | : No data available |
| Odour threshold                            | : No data available |
| pH   | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : Not applicable    |
| Freezing point                             | : No data available |
| Boiling point                              | : No data available |
| Flash point                                | : No data available |
| Auto-ignition temperature                  | : No data available |
| Decomposition temperature                  | : No data available |
| Flammability (solid, gas)                  | : Not applicable    |
| Vapour pressure                            | : No data available |
| Relative vapour density at 20 °C           | : No data available |
| Relative density                           | : No data available |
| Solubility                                 | : No data available |
| Log Pow                                    | : No data available |
| Viscosity, kinematic                       | : No data available |
| Viscosity, dynamic                         | : No data available |
| Explosive properties                       | : No data available |
| Oxidising properties                       | : No data available |
| Explosive limits                           | : No data available |

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

#### 10.2. Chemical stability

Stable under normal conditions.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

Hazardous decomposition products.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

|                             |                  |
|-----------------------------|------------------|
| Acute toxicity (oral)       | : Not classified |
| Acute toxicity (dermal)     | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

#### sodium chloride (7647-14-5)

|                            |  |
|----------------------------|--|
| LD50 oral rat              | > 3980 mg/kg bodyweight (Rat, Experimental value, 20% aqueous solution, Oral)                  |
| LD50 dermal rabbit         | > 10000 mg/kg (Rabbit, Experimental value, Dermal)   |
| LC50 inhalation rat (mg/l) | > 42 mg/l air (1 h, Rat, Male, Experimental value, 20% aqueous solution, Inhalation (aerosol)) |

#### Sodium Phosphate (Dibasic) (7558-79-4)

|                 |                            |
|-----------------|----------------------------|
| LD50 oral rat   | 17000 mg/kg (Rat, Oral)    |
| LD50 dermal rat | > 7940 mg/kg (Rat, Dermal) |



# Phosphate Buffered Saline (PBS), [1X]

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

| <b>Potassium Phosphate (Monobasic) (7778-77-0)</b> |                               |
|--|-------------------------------|
| LD50 oral rat                                      | 7100 mg/kg (Rat, Oral)        |
| LD50 dermal rabbit                                 | > 4640 mg/kg (Rabbit, Dermal) |

| <b>potassium chloride (7447-40-7)</b> |   |
|---------------------------------------|---|
| LD50 oral rat                         | 3020 mg/kg bodyweight (Rat, Female, Experimental value, Oral) |
| Skin corrosion/irritation             | : Not classified  |
| Serious eye damage/irritation         | : Not classified  |
| Respiratory or skin sensitisation     | : Not classified  |
| Germ cell mutagenicity                | : Not classified  |
| Carcinogenicity                       | : Not classified  |
| Reproductive toxicity                 | : Not classified  |
| STOT-single exposure                  | : Not classified  |
| STOT-repeated exposure                | : Not classified  |
| Aspiration hazard                     | : Not classified  |

## SECTION 12: Ecological information

### 12.1. Toxicity

|                          |   |
|--------------------------|---|
| Ecology - general        | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Acute aquatic toxicity   | : Not classified  |
| Chronic aquatic toxicity | : Not classified  |

| <b>sodium chloride (7647-14-5)</b> |   |
|------------------------------------|---|
| LC50 fish 1                        | 5840 mg/l (ASTM, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value) |

| <b>Sodium Phosphate (Dibasic) (7558-79-4)</b> |   |
|---|---|
| LC50 fish 1                                   | > 2400 mg/l (OECD 203: Fish, Acute Toxicity Test, 48 h, Leuciscus idus) |

| <b>Potassium Phosphate (Monobasic) (7778-77-0)</b> |                                   |
|--|-----------------------------------|
| LC50 fish 1  | > 900 mg/l (48 h, Leuciscus idus) |

| <b>potassium chloride (7447-40-7)</b> |   |
|---------------------------------------|---|
| LC50 fish 1                           | 2010 mg/l (96 h, Lepomis macrochirus, Static system)  |
| LC50 fish 2                           | 880 mg/l (EPA 600/4-90/027, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, Nominal concentration)           |
| EC50 Daphnia 1                        | 660 mg/l (EPA 600/4-90/027, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)                 |
| EC50 72h algae (1)                    | 2500 mg/l (Scenedesmus subspicatus, Biomass)  |
| ErC50 (algae)                         | > 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP) |

### 12.2. Persistence and degradability

| <b>sodium chloride (7647-14-5)</b> |                                   |
|------------------------------------|-----------------------------------|
| Persistence and degradability      | Biodegradability: not applicable. |
| Chemical oxygen demand (COD)       | Not applicable                    |
| ThOD                               | Not applicable                    |
| BOD (% of ThOD)                    | Not applicable                    |

| <b>Sodium Phosphate (Dibasic) (7558-79-4)</b> |                                   |
|---|-----------------------------------|
| Persistence and degradability                 | Biodegradability: not applicable. |
| Biochemical oxygen demand (BOD)               | Not applicable                    |

# Phosphate Buffered Saline (PBS), [1X]

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

|                              |                |
|------------------------------|----------------|
| Chemical oxygen demand (COD) | Not applicable |
| ThOD                         | Not applicable |
| BOD (% of ThOD)              | Not applicable |

| Potassium Phosphate (Monobasic) (7778-77-0) |                                   |
|---|-----------------------------------|
| Persistence and degradability               | Biodegradability: not applicable. |
| Biochemical oxygen demand (BOD)             | Not applicable                    |
| Chemical oxygen demand (COD)                | Not applicable                    |
| ThOD  | Not applicable                    |
| BOD (% of ThOD)                             | Not applicable                    |

| potassium chloride (7447-40-7) |                                   |
|--------------------------------|-----------------------------------|
| Persistence and degradability  | Biodegradability: not applicable. |
| Chemical oxygen demand (COD)   | Not applicable (inorganic)        |
| ThOD                           | Not applicable (inorganic)        |

### 12.3. Bioaccumulative potential

| sodium chloride (7647-14-5) |                      |
|-----------------------------|----------------------|
| Log Pow                     | -3 (Calculated)      |
| Bioaccumulative potential   | Not bioaccumulative. |

| Sodium Phosphate (Dibasic) (7558-79-4) |                      |
|--|----------------------|
| Bioaccumulative potential              | Not bioaccumulative. |

| Potassium Phosphate (Monobasic) (7778-77-0) |                                    |
|---|------------------------------------|
| Bioaccumulative potential                   | No bioaccumulation data available. |

| potassium chloride (7447-40-7) |                         |
|--------------------------------|-------------------------|
| Log Pow                        | -0.46 (Estimated value) |
| Bioaccumulative potential      | Not bioaccumulative.    |

### 12.4. Mobility in soil

| sodium chloride (7647-14-5) |   |
|-----------------------------|---|
| Surface tension             | 73.03 mN/m (23 °C, 14.5 g/l)                          |
| Ecology - soil              | No (test)data on mobility of the substance available. |

| potassium chloride (7447-40-7) |   |
|--------------------------------|---|
| Ecology - soil                 | No (test)data on mobility of the substance available. |

### 12.5. Results of PBT and vPvB assessment

| Component                   |   |
|-----------------------------|---|
| sodium chloride (7647-14-5) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII<br>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

# Phosphate Buffered Saline (PBS), [1X]

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### 14.1. UN number

|               |                 |
|---------------|-----------------|
| UN-No. (ADR)  | : Not regulated |
| UN-No. (IMDG) | : Not regulated |
| UN-No. (IATA) | : Not regulated |
| UN-No. (ADN)  | : Not regulated |
| UN-No. (RID)  | : Not regulated |

### 14.2. UN proper shipping name

|                             |                 |
|-----------------------------|-----------------|
| Proper Shipping Name (ADR)  | : Not regulated |
| Proper Shipping Name (IMDG) | : Not regulated |
| Proper Shipping Name (IATA) | : Not regulated |
| Proper Shipping Name (ADN)  | : Not regulated |
| Proper Shipping Name (RID)  | : Not regulated |

### 14.3. Transport hazard class(es)

#### ADR

|                                  |                 |
|----------------------------------|-----------------|
| Transport hazard class(es) (ADR) | : Not regulated |
|----------------------------------|-----------------|

#### IMDG

|                                   |                 |
|-----------------------------------|-----------------|
| Transport hazard class(es) (IMDG) | : Not regulated |
|-----------------------------------|-----------------|

#### IATA

|                                   |                 |
|-----------------------------------|-----------------|
| Transport hazard class(es) (IATA) | : Not regulated |
|-----------------------------------|-----------------|

#### ADN

|                                  |                 |
|----------------------------------|-----------------|
| Transport hazard class(es) (ADN) | : Not regulated |
|----------------------------------|-----------------|

#### RID

|                                  |                 |
|----------------------------------|-----------------|
| Transport hazard class(es) (RID) | : Not regulated |
|----------------------------------|-----------------|

### 14.4. Packing group

|                      |                 |
|----------------------|-----------------|
| Packing group (ADR)  | : Not regulated |
| Packing group (IMDG) | : Not regulated |
| Packing group (IATA) | : Not regulated |
| Packing group (ADN)  | : Not regulated |
| Packing group (RID)  | : Not regulated |

### 14.5. Environmental hazards

|                               |  |
|-------------------------------|--|
| Dangerous for the environment | : No                                     |
| Marine pollutant              | : No                                     |
| Other information             | : No supplementary information available |

### 14.6. Special precautions for user

#### Overland transport

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### Inland waterway transport

Not regulated

#### Rail transport

Not regulated

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

# Phosphate Buffered Saline (PBS), [1X]

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# L-Cysteine.HCl

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Revision date: 5/11/2017 Version: 1.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

|                 |  |
|-----------------|--|
| Product form    | : Substance  |
| Substance name  | : L-Cysteine.HCl   |
| EC-No.          | : 200-157-7  |
| CAS-No.         | : 52-89-1  |
| Product code    | : 295C   |
| Type of product | : Pure substance   |
| Formula         | : C3H7NO2S.HCl   |
| Synonyms        | : (R)-(+)-cysteine hydrochloride / (R)-cysteine hydrochloride / 2-amino-3-mercaptopropionic acid hydrochloride, L- / 3-mercapto-2-aminopropionic acid hydrochloride, L- / cystein chloride, L- / cysteine chlorhydrate, L- / cysteine chlorohydrate, L- / cysteine HCl, L- / cysteine hydrochloride / cysteine hydrochloride, (R)- / cysteine hydrochloride, (R)-(+)- / cysteine hydrochloride, L- / cysteine hydrochloride, L(+)- / cysteine hydrochloride, L-(+)- / cysteine hydrochloride, L-, anhydrous / cysteine monohydrochloride, L- / cysteine, hydrochloride, L- / cystein-hydrochloride, L- / L(+)-cysteine hydrochloride / L-(+)-cysteine hydrochloride / L-2-amino-3-mercaptopropionic acid hydrochloride / L-3-mercapto-2-aminopropionic acid hydrochloride / L-cystein chloride / L-cysteine chlorhydrate / L-cysteine chlorohydrate / L-cysteine HCl / L-cysteine hydrochloride, anhydrous / L-cysteine monohydrochloride / L-cysteine, hydrochloride / L-cystein-hydrochloride / WR 348 |
| Product group   | : Raw material   |
| BIG No          | : 37494  |

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Main use category : Research purposes

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
63132-1429 Saint Louis - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

| Country        | Organisation/Company  | Address   | Emergency number | Comment |
|----------------|---|---|------------------|---------|
| United Kingdom | National Poisons Information Service (Belfast Centre)<br>Royal Victoria Hospital                                | Grosvenor Road<br>BT12 6BA Belfast                          | 0344 892 0111    |         |
| United Kingdom | National Poisons Information Service (Birmingham Centre)<br>City Hospital                                       | Dudley Road<br>B18 7QH Birmingham                           | 0344 892 0111    |         |
| United Kingdom | National Poisons Information Service (Cardiff Centre)<br>Gwenwyn Ward, Llandough Hospital                       | Penarth<br>CF64 2XX Cardiff                                 | 0344 892 0111    |         |
| United Kingdom | National Poisons Information Service Edinburgh<br>Royal Infirmary of Edinburgh                                  | Little France Crescent<br>EH16 4SA Edinburgh                | 0344 892 0111    |         |
| United Kingdom | Guy's & St Thomas' Poisons Unit<br>Medical Toxicology Unit,<br>Guy's & St Thomas' Hospital Trust                | Avonley Road<br>SE14 5ER London                             | +44 20 7188 7188 |         |
| United Kingdom | National Poisons Information Service (Newcastle Centre)<br>Regional Drugs and Therapeutics Centre, Wolfson Unit | Claremont Place<br>Newcastle-upon-Tyne<br>NE1 4LP Newcastle | 0344 892 0111    |         |

# L-Cysteine.HCl

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin corrosion/irritation, Category 2 H315  
Serious eye damage/eye irritation, Category 2 H319  
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation H335  
Full text of H statements : see section 16

##### Adverse physicochemical, human health and environmental effects

May cause respiratory irritation. Causes skin irritation. Causes serious eye irritation.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

CLP Signal word

: Warning

Hazard statements (CLP)

: H315 - Causes skin irritation.  
H319 - Causes serious eye irritation.  
H335 - May cause respiratory irritation.

Precautionary statements (CLP)

: P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P302+P352 - IF ON SKIN: Wash with plenty of water.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 - Call a POISON CENTRE or doctor if you feel unwell.  
P321 - Specific treatment (see supplemental first aid instruction on this label).  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Substance type : Mono-constituent

| Name           | Product identifier                      | %   | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------|---|-----|---|
| L-Cysteine.HCl | (CAS-No.) 52-89-1<br>(EC-No.) 200-157-7 | 100 | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335    |

Full text of H-statements: see section 16

#### 3.2. Mixtures

Not applicable

# L-Cysteine.HCl

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

|                                       |   |
|---------------------------------------|---|
| First-aid measures general            | : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. |
| First-aid measures after inhalation   | : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.   |
| First-aid measures after skin contact | : Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.  |
| First-aid measures after eye contact  | : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.   |
| First-aid measures after ingestion    | : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre ( <a href="http://www.big.be/antigif.htm">www.big.be/antigif.htm</a> ).   |

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

|                                     |  |
|-------------------------------------|--|
| Symptoms/effects after inhalation   | : AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. |
| Symptoms/effects after skin contact | : Tingling/irritation of the skin.   |
| Symptoms/effects after eye contact  | : Irritation of the eye tissue.  |
| Symptoms/effects after ingestion    | : Irritation of the gastric/intestinal mucosa.   |

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

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

|                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | : Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam. |
| Unsuitable extinguishing media | : Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.  |

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

|  |   |
|--|---|
| Fire hazard                                      | : INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard". |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released.  |

#### 5.3. Advice for firefighters

|                                |  |
|--------------------------------|--|
| Precautionary measures fire    | : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows. |
| Firefighting instructions      | : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray.           |
| Protection during firefighting | : Heat/fire exposure: compressed air/oxygen apparatus.   |

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

|                                  |   |
|----------------------------------|---|
| Protective equipment             | : Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit. |
| Emergency procedures             | : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.                          |
| Measures in case of dust release | : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.                                     |

##### 6.1.2. For emergency responders

|                      |   |
|----------------------|---|
| Protective equipment | : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection". |
|----------------------|---|

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

|                         |  |
|-------------------------|--|
| For containment         | : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. On heating: dilute combustible/toxic gases/vapours. |
| Methods for cleaning up | : Prevent dust cloud formation. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.                      |
| Other information       | : Dispose of materials or solid residues at an authorized site.  |

# L-Cysteine.HCl

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### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

|                               |  |
|-------------------------------|--|
| Precautions for safe handling | : Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Keep container tightly closed. |
| Hygiene measures              | : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.   |

### 7.2. Conditions for safe storage, including any incompatibilities

|                              |   |
|------------------------------|---|
| Storage conditions           | : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.  |
| Storage temperature          | : 20 °C   |
| Heat and ignition sources    | : KEEP SUBSTANCE AWAY FROM: heat sources.   |
| Information on mixed storage | : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. metals. water/moisture.   |
| Storage area                 | : Store in a dry area. Store in a dark area. May be stored under argon. Store at room temperature. Keep out of direct sunlight. Meet the legal requirements.        |
| Special rules on packaging   | : SPECIAL REQUIREMENTS: hermetical. watertight. dry. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers. |
| Packaging materials          | : MATERIAL TO AVOID: iron. copper.  |

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

#### Appropriate engineering controls:

Ensure good ventilation of the work station.

#### Hand protection:

Gloves

#### Eye protection:

Face shield. In case of dust production: protective goggles

#### Skin and body protection:

Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

#### Respiratory protection:

Dust formation: dust mask. On heating: full face mask

#### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|  |                      |
|--|----------------------|
| Physical state                             | : Solid              |
| Appearance                                 | : Crystalline solid. |
| Molecular mass                             | : 157.62 g/mol       |
| Colour                                     | : White.             |
| Odour                                      | : Unpleasant odour.  |
| Odour threshold                            | : No data available  |
| pH   | : No data available  |
| Relative evaporation rate (butylacetate=1) | : No data available  |
| Melting point                              | : 175 °C             |
| Freezing point                             | : Not applicable     |
| Boiling point                              | : Not applicable     |
| Flash point                                | : Not applicable     |
| Auto-ignition temperature                  | : Not applicable     |



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|                                  |   |
|----------------------------------|---|
| Decomposition temperature        | : 175 °C  |
| Flammability (solid, gas)        | : Non flammable.  |
| Vapour pressure                  | : No data available   |
| Relative vapour density at 20 °C | : Not applicable  |
| Relative density                 | : Not applicable  |
| Solubility                       | : Soluble in water. Soluble in ethanol. Soluble in acetone.<br>Water: soluble, Literature |
| Log Pow                          | : No data available   |
| Viscosity, kinematic             | : No data available   |
| Viscosity, dynamic               | : No data available   |
| Explosive properties             | : No data available   |
| Oxidising properties             | : No data available   |
| Explosive limits                 | : Not applicable  |

### 9.2. Other information

Other properties : Hygroscopic. Acid reaction.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Oxidizes slowly on exposure to air.

### 10.2. Chemical stability

Discolours on exposure to light. Discolours on exposure to air. Hygroscopic. Unstable on exposure to air.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|   |  |
|---|--|
| Acute toxicity (oral)                               | : Not classified   |
| Acute toxicity (dermal)                             | : Not classified   |
| Acute toxicity (inhalation)                         | : Not classified   |
| Skin corrosion/irritation                           | : Causes skin irritation.  |
| Serious eye damage/irritation                       | : Causes serious eye irritation.   |
| Respiratory or skin sensitisation                   | : Not classified   |
| Germ cell mutagenicity                              | : Not classified   |
| Carcinogenicity                                     | : Not classified   |
| Reproductive toxicity                               | : Not classified   |
| STOT-single exposure                                | : May cause respiratory irritation.  |
| STOT-repeated exposure                              | : Not classified   |
| Aspiration hazard                                   | : Not classified   |
| Potential adverse human health effects and symptoms | : Causes skin irritation. May cause respiratory irritation. Causes serious eye irritation. |

## SECTION 12: Ecological information

### 12.1. Toxicity

|                          |   |
|--------------------------|---|
| Ecology - general        | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Ecology - air            | : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).                                       |
| Ecology - water          | : No water pollutant (surface water). Insufficient data available on ecotoxicity. pH shift.                             |
| Acute aquatic toxicity   | : Not classified  |
| Chronic aquatic toxicity | : Not classified  |

### 12.2. Persistence and degradability

#### L-Cysteine.HCl (52-89-1)

|                               |   |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |
|-------------------------------|---|

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### 12.3. Bioaccumulative potential

#### L-Cysteine.HCl (52-89-1)

|                           |                                    |
|---------------------------|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |
|---------------------------|------------------------------------|

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|  |  |
|--|--|
| Waste treatment methods                    | : Waste treatment methods.   |
| Product/Packaging disposal recommendations | : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an incinerator for chlorinated waste materials with energy recovery. Dissolve or mix with a combustible solvent. |
| Additional information                     | : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.   |
| European List of Waste (LoW) code          | : 15 01 10* - packaging containing residues of or contaminated by dangerous substances<br>16 03 05* - organic wastes containing dangerous substances   |

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

|               |                  |
|---------------|------------------|
| UN-No. (ADR)  | : Not applicable |
| UN-No. (IMDG) | : Not regulated  |
| UN-No. (IATA) | : Not regulated  |
| UN-No. (ADN)  | : Not applicable |
| UN-No. (RID)  | : Not applicable |

### 14.2. UN proper shipping name

|                             |                  |
|-----------------------------|------------------|
| Proper Shipping Name (ADR)  | : Not applicable |
| Proper Shipping Name (IMDG) | : Not regulated  |
| Proper Shipping Name (IATA) | : Not regulated  |
| Proper Shipping Name (ADN)  | : Not applicable |
| Proper Shipping Name (RID)  | : Not applicable |

### 14.3. Transport hazard class(es)

#### ADR

|                                  |                  |
|----------------------------------|------------------|
| Transport hazard class(es) (ADR) | : Not applicable |
|----------------------------------|------------------|

#### IMDG

|                                   |                 |
|-----------------------------------|-----------------|
| Transport hazard class(es) (IMDG) | : Not regulated |
|-----------------------------------|-----------------|

#### IATA

|                                   |                 |
|-----------------------------------|-----------------|
| Transport hazard class(es) (IATA) | : Not regulated |
|-----------------------------------|-----------------|

#### ADN

|                                  |                  |
|----------------------------------|------------------|
| Transport hazard class(es) (ADN) | : Not applicable |
|----------------------------------|------------------|

#### RID

|                                  |                  |
|----------------------------------|------------------|
| Transport hazard class(es) (RID) | : Not applicable |
|----------------------------------|------------------|

### 14.4. Packing group

|                      |                  |
|----------------------|------------------|
| Packing group (ADR)  | : Not applicable |
| Packing group (IMDG) | : Not regulated  |
| Packing group (IATA) | : Not regulated  |
| Packing group (ADN)  | : Not applicable |
| Packing group (RID)  | : Not applicable |

### 14.5. Environmental hazards

|                               |  |
|-------------------------------|--|
| Dangerous for the environment | : No                                     |
| Marine pollutant              | : No                                     |
| Other information             | : No supplementary information available |

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### 14.6. Special precautions for user

#### Overland transport

Transport regulations (ADR) : Insufficient data

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### Inland waterway transport

No data available

#### Rail transport

Transport regulations (RID) : Insufficient data

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

L-Cysteine.HCl is not on the REACH Candidate List

L-Cysteine.HCl is not on the REACH Annex XIV List

L-Cysteine.HCl is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

L-Cysteine.HCl is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

#### 15.1.2. National regulations

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

#### Full text of H- and EUH-statements:

|               |  |
|---------------|--|
| Eye Irrit. 2  | Serious eye damage/eye irritation, Category 2  |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2  |
| STOT SE 3     | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H315          | Causes skin irritation.  |
| H319          | Causes serious eye irritation.   |
| H335          | May cause respiratory irritation.  |

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# SpinOUT GT-600

## Safety Data Sheet

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Date of issue: 5/20/2013 Revision date: 5/11/2017 Version: 1.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : SpinOUT GT-600  
Product code : 326S\_323S\_325S\_324S\_321S\_320S  
Type of product : Pure substance  
Synonyms : sephadex G25 fine 20-80  
Product group : Trade product  
BIG No : 48721

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
63132-1429 Saint Louis - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

| Country        | Organisation/Company  | Address   | Emergency number | Comment |
|----------------|---|---|------------------|---------|
| United Kingdom | National Poisons Information Service (Belfast Centre)<br>Royal Victoria Hospital                                | Grosvenor Road<br>BT12 6BA Belfast                          | 0344 892 0111    |         |
| United Kingdom | National Poisons Information Service (Birmingham Centre)<br>City Hospital                                       | Dudley Road<br>B18 7QH Birmingham                           | 0344 892 0111    |         |
| United Kingdom | National Poisons Information Service (Cardiff Centre)<br>Gwenwyn Ward, Llandough Hospital                       | Penarth<br>CF64 2XX Cardiff                                 | 0344 892 0111    |         |
| United Kingdom | National Poisons Information Service Edinburgh<br>Royal Infirmary of Edinburgh                                  | Little France Crescent<br>EH16 4SA Edinburgh                | 0344 892 0111    |         |
| United Kingdom | Guy's & St Thomas' Poisons Unit<br>Medical Toxicology Unit,<br>Guy's & St Thomas' Hospital Trust                | Avonley Road<br>SE14 5ER London                             | +44 20 7188 7188 |         |
| United Kingdom | National Poisons Information Service (Newcastle Centre)<br>Regional Drugs and Therapeutics Centre, Wolfson Unit | Claremont Place<br>Newcastle-upon-Tyne<br>NE1 4LP Newcastle | 0344 892 0111    |         |

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

##### Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

# SpinOUT GT-600

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### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

| Name                 | Product identifier                        | %       | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------------|---|---------|---|
| SpinOUT Resin        | (CAS-No.) 9041-35-4                       | >= 80   | Not classified  |
| Water, Nuclease free | (CAS-No.) 7732-18-5<br>(EC-No.) 231-791-2 | 10 - 50 | Not classified  |

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

|                                       |   |
|---------------------------------------|---|
| First-aid measures general            | : If you feel unwell, seek medical advice.  |
| First-aid measures after inhalation   | : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.   |
| First-aid measures after skin contact | : Rinse with water. Do not apply (chemical) neutralizing agents without medical advice. Soap may be used. Take victim to a doctor if irritation persists.   |
| First-aid measures after eye contact  | : Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist if irritation persists.   |
| First-aid measures after ingestion    | : Rinse mouth with water. Do not apply (chemical) neutralizing agents without medical advice. Call Poison Information Centre ( <a href="http://www.big.be/antigif.htm">www.big.be/antigif.htm</a> ). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. |

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

|                                     |                     |
|-------------------------------------|---------------------|
| Symptoms/effects after inhalation   | : No effects known. |
| Symptoms/effects after skin contact | : No effects known. |
| Symptoms/effects after eye contact  | : No effects known. |
| Symptoms/effects after ingestion    | : No effects known. |
| Chronic symptoms                    | : No effects known. |

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

|                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | : Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam. |
| Unsuitable extinguishing media | : Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.  |

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

|  |   |
|--|---|
| Fire hazard                                      | : Combustible liquid.   |
| Explosion hazard                                 | : DIRECT EXPLOSION HAZARD: Most organic solids are liable to dust explosion hazard.<br>INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark. |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released.  |

### 5.3. Advice for firefighters

|                                |  |
|--------------------------------|--|
| Precautionary measures fire    | : Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows. |
| Firefighting instructions      | : No specific fire-fighting instructions required.   |
| Protection during firefighting | : Heat/fire exposure: compressed air/oxygen apparatus.   |

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

|                      |   |
|----------------------|---|
| Protective equipment | : Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.            |
| Emergency procedures | : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. Wash contaminated clothes. |

# SpinOUT GT-600

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Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

## 6.2. Environmental precautions

Avoid release to the environment.

## 6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up : Stop dust cloud by humidifying. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information : Dispose of materials or solid residues at an authorized site.

## 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid raising dust. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Keep container tightly closed. Powdered form: no compressed air for pumping over.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. water/moisture.

Storage area : Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Meet the legal requirements.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

#### Appropriate engineering controls:

Ensure good ventilation of the work station.

#### Hand protection:

Protective gloves against chemicals (EN374)

#### Eye protection:

Safety glasses. In case of dust production: protective goggles

#### Skin and body protection:

Protective clothing

#### Respiratory protection:

Dust production: dust mask with filter type P1

#### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Solid. Powder.

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|  |                     |
|--|---------------------|
| Colour                                     | : White.            |
| Odour                                      | : No data available |
| Odour threshold                            | : No data available |
| pH   | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : Not applicable    |
| Freezing point                             | : No data available |
| Boiling point                              | : No data available |
| Flash point                                | : 65 °C             |
| Auto-ignition temperature                  | : No data available |
| Decomposition temperature                  | : No data available |
| Flammability (solid, gas)                  | : Not applicable    |
| Vapour pressure                            | : No data available |
| Relative vapour density at 20 °C           | : Not applicable    |
| Relative density                           | : No data available |
| Solubility                                 | : No data available |
| Log Pow                                    | : No data available |
| Viscosity, kinematic                       | : No data available |
| Viscosity, dynamic                         | : No data available |
| Explosive properties                       | : No data available |
| Oxidising properties                       | : No data available |
| Explosive limits                           | : No data available |

### 9.2. Other information

VOC content : 0 %

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                                   |                  |
|-----------------------------------|------------------|
| Acute toxicity (oral)             | : Not classified |
| Acute toxicity (dermal)           | : Not classified |
| Acute toxicity (inhalation)       | : Not classified |
| Skin corrosion/irritation         | : Not classified |
| Serious eye damage/irritation     | : Not classified |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity            | : Not classified |
| Carcinogenicity                   | : Not classified |
| Reproductive toxicity             | : Not classified |
| STOT-single exposure              | : Not classified |
| STOT-repeated exposure            | : Not classified |
| Aspiration hazard                 | : Not classified |

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

# SpinOUT GT-600

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

|                          |  |
|--------------------------|--|
| Ecology - air            | : Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). |
| Acute aquatic toxicity   | : Not classified   |
| Chronic aquatic toxicity | : Not classified   |

### 12.2. Persistence and degradability

#### SpinOUT GT-600

|                               |   |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |
|-------------------------------|---|

#### SpinOUT Resin (9041-35-4)

|                               |   |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |
|-------------------------------|---|

### 12.3. Bioaccumulative potential

#### SpinOUT GT-600

|                           |                                    |
|---------------------------|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |
|---------------------------|------------------------------------|

#### SpinOUT Resin (9041-35-4)

|                           |                                    |
|---------------------------|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |
|---------------------------|------------------------------------|

### 12.4. Mobility in soil

#### SpinOUT GT-600

|                |   |
|----------------|---|
| Ecology - soil | No (test)data on mobility of the substance available. |
|----------------|---|

#### SpinOUT Resin (9041-35-4)

|                |   |
|----------------|---|
| Ecology - soil | No (test)data on mobility of the substance available. |
|----------------|---|

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|  |   |
|--|---|
| Waste treatment methods                    | : Waste treatment methods.  |
| Product/Packaging disposal recommendations | : Remove waste in accordance with local and/or national regulations. Remove to an authorized waste treatment plant.                                       |
| Additional information                     | : Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. |
| European List of Waste (LoW) code          | : 16 05 09 - discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08   |

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

|               |                 |
|---------------|-----------------|
| UN-No. (ADR)  | : Not regulated |
| UN-No. (IMDG) | : Not regulated |
| UN-No. (IATA) | : Not regulated |
| UN-No. (ADN)  | : Not regulated |
| UN-No. (RID)  | : Not regulated |

### 14.2. UN proper shipping name

|                             |                 |
|-----------------------------|-----------------|
| Proper Shipping Name (ADR)  | : Not regulated |
| Proper Shipping Name (IMDG) | : Not regulated |
| Proper Shipping Name (IATA) | : Not regulated |
| Proper Shipping Name (ADN)  | : Not regulated |
| Proper Shipping Name (RID)  | : Not regulated |

### 14.3. Transport hazard class(es)

#### ADR

|                                  |                 |
|----------------------------------|-----------------|
| Transport hazard class(es) (ADR) | : Not regulated |
|----------------------------------|-----------------|



# SpinOUT GT-600

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### IMDG

Transport hazard class(es) (IMDG) : Not regulated

### IATA

Transport hazard class(es) (IATA) : Not regulated

### ADN

Transport hazard class(es) (ADN) : Not regulated

### RID

Transport hazard class(es) (RID) : Not regulated

### 14.4. Packing group

Packing group (ADR) : Not regulated

Packing group (IMDG) : Not regulated

Packing group (IATA) : Not regulated

Packing group (ADN) : Not regulated

Packing group (RID) : Not regulated

### 14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : Remarks: IATA Special Provision A 58-Aqueous solutions containing 24% or less alcohol by volume is not subject to these regulations.

### 14.6. Special precautions for user

#### Overland transport

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### Inland waterway transport

Not regulated

#### Rail transport

Not regulated

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

VOC content : 0 %

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

# SpinOUT GT-600

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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# Protein A Resin

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Revision date: 5/11/2017 Version: 1.1

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : Protein A Resin  
Product code : 440P\_443P\_439P  
Product group : Blend

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

No additional information available

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
63132-1429 Saint Louis - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

##### Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name            | Product identifier   | %       | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|-----------------|--|---------|---|
| agarose         | (CAS-No.) 9012-36-6<br>(EC-No.) 232-731-8                              | 50 - 80 | Not classified  |
| Deionized water | (CAS-No.) 7732-18-5  | 10 - 50 | Not classified  |
| ethanol         | (CAS-No.) 64-17-5<br>(EC-No.) 200-578-6<br>(EC Index-No.) 603-002-00-5 | 10 - 50 | Flam. Liq. 2, H225  |

Full text of H-statements: see section 16

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

# Protein A Resin

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

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

No additional information available

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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

Fire hazard : Combustible liquid.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Storage temperature : 4 °C

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### ethanol (64-17-5)

#### United Kingdom - Occupational Exposure Limits

|                              |                        |
|------------------------------|------------------------|
| WEL TWA (mg/m <sup>3</sup> ) | 1920 mg/m <sup>3</sup> |
| WEL TWA (ppm)                | 1000 ppm               |

### 8.2. Exposure controls

#### Appropriate engineering controls:

Ensure good ventilation of the work station.

#### Hand protection:

Protective gloves

#### Eye protection:

Safety glasses

# Protein A Resin

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|  |                     |
|--|---------------------|
| Physical state                             | : Liquid            |
| Colour                                     | : No data available |
| Odour                                      | : No data available |
| Odour threshold                            | : No data available |
| pH   | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : Not applicable    |
| Freezing point                             | : No data available |
| Boiling point                              | : No data available |
| Flash point                                | : 65 °C             |
| Auto-ignition temperature                  | : No data available |
| Decomposition temperature                  | : No data available |
| Flammability (solid, gas)                  | : Not applicable    |
| Vapour pressure                            | : No data available |
| Relative vapour density at 20 °C           | : No data available |
| Relative density                           | : No data available |
| Solubility                                 | : No data available |
| Log Pow                                    | : No data available |
| Viscosity, kinematic                       | : No data available |
| Viscosity, dynamic                         | : No data available |
| Explosive properties                       | : No data available |
| Oxidising properties                       | : No data available |
| Explosive limits                           | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                             |                  |
|-----------------------------|------------------|
| Acute toxicity (oral)       | : Not classified |
| Acute toxicity (dermal)     | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

#### ethanol (64-17-5)

|                    |   |
|--------------------|---|
| LD50 oral rat      | 10740 mg/kg bodyweight (Rat; OECD 401: Acute Oral Toxicity; Experimental value) |
| LD50 dermal rabbit | > 16000 mg/kg (Rabbit; Literature study)  |

# Protein A Resin

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

|                                   |                                  |
|-----------------------------------|----------------------------------|
| LC50 inhalation rat (mg/l)        | > 20 mg/l (4 h, Rat, Inhalation) |
| Skin corrosion/irritation         | : Not classified                 |
| Serious eye damage/irritation     | : Not classified                 |
| Respiratory or skin sensitisation | : Not classified                 |
| Germ cell mutagenicity            | : Not classified                 |
| Carcinogenicity                   | : Not classified                 |

### ethanol (64-17-5)

|            |                            |
|------------|----------------------------|
| IARC group | 1 - Carcinogenic to humans |
|------------|----------------------------|

|                        |                  |
|------------------------|------------------|
| Reproductive toxicity  | : Not classified |
| STOT-single exposure   | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard      | : Not classified |

## SECTION 12: Ecological information

### 12.1. Toxicity

|                          |   |
|--------------------------|---|
| Ecology - general        | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Acute aquatic toxicity   | : Not classified  |
| Chronic aquatic toxicity | : Not classified  |

### ethanol (64-17-5)

|                    |   |
|--------------------|---|
| LC50 fish 1        | 14200 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)                          |
| EC50 Daphnia 1     | 9300 mg/l (48 h, Daphnia magna, Pure substance)   |
| EC50 72h algae (1) | 275 mg/l (Equivalent or similar to OECD 201, Chlorella vulgaris, Static system, Fresh water, Experimental value, Growth rate) |

### 12.2. Persistence and degradability

#### ethanol (64-17-5)

|                                 |  |
|---------------------------------|--|
| Persistence and degradability   | Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available. |
| Biochemical oxygen demand (BOD) | 0.8 - 0.967 g O <sub>2</sub> /g substance  |
| Chemical oxygen demand (COD)    | 1.7 g O <sub>2</sub> /g substance  |
| ThOD                            | 2.1 g O <sub>2</sub> /g substance  |
| BOD (% of ThOD)                 | 0.43   |

### agarose (9012-36-6)

|                               |   |
|-------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |
|-------------------------------|---|

### 12.3. Bioaccumulative potential

#### ethanol (64-17-5)

|                           |  |
|---------------------------|--|
| BCF fish 1                | 1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)                                |
| Log Pow                   | -0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C) |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4).   |

### agarose (9012-36-6)

|                           |                                    |
|---------------------------|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |
|---------------------------|------------------------------------|

### 12.4. Mobility in soil

#### ethanol (64-17-5)

|                 |                        |
|-----------------|------------------------|
| Surface tension | 0.0245 N/m (20 °C)     |
| Ecology - soil  | Highly mobile in soil. |

# Protein A Resin

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

|                            |   |
|----------------------------|---|
| <b>agarose (9012-36-6)</b> |   |
| Ecology - soil             | No (test)data on mobility of the substance available. |

### 12.5. Results of PBT and vPvB assessment

|                   |   |
|-------------------|---|
| <b>Component</b>  |   |
| ethanol (64-17-5) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII<br>This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No. (ADR) : Not regulated  
UN-No. (IMDG) : Not regulated  
UN-No. (IATA) : Not regulated  
UN-No. (ADN) : Not regulated  
UN-No. (RID) : Not regulated

### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : Not regulated  
Proper Shipping Name (IMDG) : Not regulated  
Proper Shipping Name (IATA) : Not regulated  
Proper Shipping Name (ADN) : Not regulated  
Proper Shipping Name (RID) : Not regulated

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : Not regulated

#### IMDG

Transport hazard class(es) (IMDG) : Not regulated

#### IATA

Transport hazard class(es) (IATA) : Not regulated

#### ADN

Transport hazard class(es) (ADN) : Not regulated

#### RID

Transport hazard class(es) (RID) : Not regulated

### 14.4. Packing group

Packing group (ADR) : Not regulated  
Packing group (IMDG) : Not regulated  
Packing group (IATA) : Not regulated  
Packing group (ADN) : Not regulated  
Packing group (RID) : Not regulated

### 14.5. Environmental hazards

Dangerous for the environment : No  
Marine pollutant : No  
Other information : No supplementary information available

### 14.6. Special precautions for user

#### Overland transport

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

# Protein A Resin

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### Inland waterway transport

Not regulated

### Rail transport

Not regulated

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

### Full text of H- and EUH-statements:

|              |                                     |
|--------------|-------------------------------------|
| Flam. Liq. 2 | Flammable liquids, Category 2       |
| H225         | Highly flammable liquid and vapour. |

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*





# IgG Elution Buffer

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830  
Revision date: 5/11/2017

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form : Mixture  
Product name : IgG Elution Buffer  
Product code : 442P  
Product group : Blend

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

No additional information available

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
63132-1429 Saint Louis - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

##### Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

#### 2.3. Other hazards

No additional information available

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name            | Product identifier                      | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|-----------------|---|---|---|
| Deionized water | (CAS-No.) 7732-18-5                     |   | Not classified  |
| Glycine         | (CAS-No.) 56-40-6<br>(EC-No.) 200-272-2 |   | Not classified  |

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

No additional information available

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

Treat symptomatically.

# IgG Elution Buffer

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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

Hazardous decomposition products in case of fire : Toxic fumes may be released.

#### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

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

##### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Exposure controls

##### Appropriate engineering controls:

Ensure good ventilation of the work station.

##### Hand protection:

Protective gloves

##### Eye protection:

Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

##### Environmental exposure controls:

Avoid release to the environment.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Colour : No data available

Odour : No data available

# IgG Elution Buffer

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

|  |                     |
|--|---------------------|
| Odour threshold                            | : No data available |
| pH   | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point                              | : Not applicable    |
| Freezing point                             | : No data available |
| Boiling point                              | : No data available |
| Flash point                                | : No data available |
| Auto-ignition temperature                  | : No data available |
| Decomposition temperature                  | : No data available |
| Flammability (solid, gas)                  | : Not applicable    |
| Vapour pressure                            | : No data available |
| Relative vapour density at 20 °C           | : No data available |
| Relative density                           | : No data available |
| Solubility                                 | : No data available |
| Log Pow                                    | : No data available |
| Viscosity, kinematic                       | : No data available |
| Viscosity, dynamic                         | : No data available |
| Explosive properties                       | : No data available |
| Oxidising properties                       | : No data available |
| Explosive limits                           | : No data available |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                             |                  |
|-----------------------------|------------------|
| Acute toxicity (oral)       | : Not classified |
| Acute toxicity (dermal)     | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

#### Glycine (56-40-6)

|                                   |  |
|-----------------------------------|--|
| LD50 oral rat                     | 7930 - 9550 mg/kg (Rat, Male / female, Experimental value, Oral, 7 day(s)) |
| Skin corrosion/irritation         | : Not classified   |
| Serious eye damage/irritation     | : Not classified   |
| Respiratory or skin sensitisation | : Not classified   |
| Germ cell mutagenicity            | : Not classified   |
| Carcinogenicity                   | : Not classified   |
| Reproductive toxicity             | : Not classified   |
| STOT-single exposure              | : Not classified   |
| STOT-repeated exposure            | : Not classified   |
| Aspiration hazard                 | : Not classified   |

## SECTION 12: Ecological information

### 12.1. Toxicity

|                   |   |
|-------------------|---|
| Ecology - general | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
|-------------------|---|

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Acute aquatic toxicity : Not classified

Chronic aquatic toxicity : Not classified

### Glycine (56-40-6)

|                    |   |
|--------------------|---|
| LC50 fish 1        | > 1000 mg/l (Equivalent or similar to OECD 203, 96 h, Oryzias latipes, Static system, Fresh water, Experimental value, Nominal concentration) |
| EC50 Daphnia 1     | >= 220 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP)  |
| EC50 72h algae (1) | > 1000 mg/l (Equivalent or similar to OECD 201, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Biomass)     |

### 12.2. Persistence and degradability

#### Glycine (56-40-6)

|                               |                                   |
|-------------------------------|-----------------------------------|
| Persistence and degradability | Readily biodegradable in water.   |
| BOD (% of ThOD)               | 0.86 (5 day(s), Literature study) |

### 12.3. Bioaccumulative potential

#### Glycine (56-40-6)

|                           |   |
|---------------------------|---|
| BCF fish 1                | 0.893 l/kg (BCFBAF v3.01, Pisces, QSAR) |
| Log Pow                   | -3.21 (Experimental value)              |
| Bioaccumulative potential | Not bioaccumulative.                    |

### 12.4. Mobility in soil

#### Glycine (56-40-6)

|                |                                      |
|----------------|--------------------------------------|
| Log Koc        | 0 (log Koc, SRC PCKOCWIN v2.0, QSAR) |
| Ecology - soil | Highly mobile in soil.               |

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

|               |                 |
|---------------|-----------------|
| UN-No. (ADR)  | : Not regulated |
| UN-No. (IMDG) | : Not regulated |
| UN-No. (IATA) | : Not regulated |
| UN-No. (ADN)  | : Not regulated |
| UN-No. (RID)  | : Not regulated |

### 14.2. UN proper shipping name

|                             |                 |
|-----------------------------|-----------------|
| Proper Shipping Name (ADR)  | : Not regulated |
| Proper Shipping Name (IMDG) | : Not regulated |
| Proper Shipping Name (IATA) | : Not regulated |
| Proper Shipping Name (ADN)  | : Not regulated |
| Proper Shipping Name (RID)  | : Not regulated |

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : Not regulated

#### IMDG

Transport hazard class(es) (IMDG) : Not regulated

#### IATA

Transport hazard class(es) (IATA) : Not regulated

#### ADN

Transport hazard class(es) (ADN) : Not regulated

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### RID

Transport hazard class(es) (RID) : Not regulated

### 14.4. Packing group

Packing group (ADR) : Not regulated

Packing group (IMDG) : Not regulated

Packing group (IATA) : Not regulated

Packing group (ADN) : Not regulated

Packing group (RID) : Not regulated

### 14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

### 14.6. Special precautions for user

#### Overland transport

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### Inland waterway transport

Not regulated

#### Rail transport

Not regulated

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*