

## Kit

Product name	Catalog No.	Quantity
PUREfrex <sup>®</sup> 2.1	PF213-0.25-EX	250 µL for reaction
	PF213-0.25-5-EX	5x 250 µL for reaction
	PF213-10-EX	5x 2 mL for reaction

## Contents

Product name	Product No.
Solution I	PF213-11
Solution II	PF201-21
Solution III	PF-3A1
DHFR DNA	PF001-D2
Cysteine	PF213-6
DTT	PF213-7
GSH	PF213-8



# SAFETY DATA SHEET

Page 1 of 7  
First issue: Dec 21st, 2022  
PF213-11 (US)  
Version 1

## Section 1: Identification

### Product identifier

**Product name:** Solution I  
**Product code:** PF213-11

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

#### Relevant identified uses of the product:

This product is for research and development only.

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

**Name:** GeneFrontier Corporation  
**Address:** SHARP Kashiwa Building 4F, 273-1  
Kashiwa, Kashiwa-shi, Chiba 277-0005,  
Japan  
**Telephone number:** +81-4-7137-6301  
**Fax number:** +81-4-7132-7530  
**e-mail address:** purefex@genefrontier.com  
**Emergency telephone number:** +81-4-7137-6301

## Section 2: Hazard(s) identification

### GHS classification and label elements of the product

**Classification of the substance or mixture:** Not classified to GHS classification.

**Label elements:** No GHS label element.  
No Signal word.

## Section 3: Composition/information on ingredients

**Mixture/Substance selection:** Mixture

Ingredient name	CAS No.	Content (%)
Water	7732-18-5	> 85
Buffer	CBI	0.1 - 1
Mineral A	CBI	1 - 5
Mineral B	CBI	0.1 - 1
Mineral C	CBI	1 - 5
Mineral D	CBI	0.1 - 1
Nucleotide A	CBI	0.1 - 1
Nucleotide B	CBI	0.1 - 1

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Table 3 of Annex VI in EU CLP.

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#### **Section 4: First-aid measures**

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##### **Descriptions of first-aid measures**

IF INHALED	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)	Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

##### **Most important symptoms/effects, acute and delayed**

No information available.

##### **Indication of immediate medical attention and special treatment needed, if necessary**

Treat symptomatically.

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#### **Section 5: Fire-fighting measures**

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##### **Extinguishing media**

###### **Suitable extinguishing media:**

Use appropriate extinguishing media suitable for surrounding facilities.

##### **Advice for firefighters**

###### **Specific fire-fighting measures:**

Evacuate non-essential personnel to safe area.

###### **Special protective equipment and precautions for fire-fighters:**

Wear fire/flame resistant/retardant clothing.

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#### **Section 6: Accidental release measures**

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

Wear gloves, goggles and other protective clothing. Wear dust mask if the product is dry.

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

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

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## Section 7: Handling and storage

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### Precautions for safe handling

#### Safety treatments:

- Avoid contact with skin.
- Avoid contact with eyes.

### Conditions for safe storage, including any incompatibilities

#### Recommendation for storage:

- Keep container tightly closed.
- Store at temperatures not exceeding designated temperature.
- Storage temperature upper limit: -20 °C/ -4 °F

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## Section 8: Exposure controls/personal protection

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### Control parameters

- Adopted value
- No Adopted value data available in ACGIH.

### Exposure controls

#### Appropriate engineering controls:

- Eye wash station should be available.
- Washing facilities should be available.

#### Individual protection measures, such as personal protective equipment:

- |                          |   |
|--------------------------|---|
| Hand protection          | Wear protective gloves.<br>Recommended material(s): impermeable or chemical resistant rubber. |
| Eye protection           | Wear safety glasses with side-shields or chemical safety goggles.                             |
| Skin and body protection | Wear protective clothing.   |

#### Safety and Health measures:

- Do not get in eyes, on skin, or on clothing.
- Do not eat, drink or smoke when using this product.
- Wash hands thoroughly after handling.

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## Section 9: Physical and chemical properties

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### Information on basic physical and chemical properties

#### Appearance

Physical state	Liquid
Color	Clear
Odor	None
pH	7 – 8
Flammability	Non-flammable
Solubility	Solubility in water: Soluble

### Other information

No information available.

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## Section 10: Stability and reactivity

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### Reactivity

No data available.

### Chemical stability

Stable under normal storage/handling conditions.

### Possibility of hazardous reactions

No hazardous reaction expected under normal handling.

### Conditions to avoid

No further relevant information available.

### Incompatible materials

No further relevant information available.

### Hazardous decomposition products

No dangerous decomposition products known.

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## **Section 11: Toxicological information**

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### **Information on toxicological effects**

No Acute toxicity data available.  
No Irritant properties (Skin and Eyes) data available.  
No Allergenic and sensitizing effects data available.  
No Mutagenic effects data available.  
No Carcinogenic effects data available.  
No Teratogenic effects data available.  
No reproductive toxicity data available.  
No STOT-single/repeated exposure data available.  
No Aspiration hazard data available.

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## **Section 12: Ecological information**

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### **Ecotoxicity:**

No Aquatic toxicity data available.

### **Persistence and degradability:**

No Persistence and degradability data available.

### **Bioaccumulative potential:**

No Bioaccumulative potential data available.

### **Mobility in soil:**

No Mobility in soil data available.

### **Other adverse effects:**

Ozone depleting chemical data not available.

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## **Section 13: Disposal considerations**

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### **Waste treatment methods**

#### **Relevant Information:**

Keep out of drains, sewers, ditches and waterways.

#### **Disposal considerations:**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

#### **Contaminated packing:**

Dispose of container after using the contents completely.

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**Section 14: Transport information**

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**UN number, UN CLASS**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**UN proper shipping name**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**Transport hazard class(es)**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**Packing group**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**Environmental hazards**

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL 73/78 and IBC code**

Not applicable.

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**Section 15: Regulatory information**

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**Safety, health and environmental regulations/ legislation specific for the substance or mixture**

No data available.

**US major regulations**

TSCA

Buffer; Mineral B; Mineral D; Nucleotide A

**Other regulatory information**

We are not able to check up other regulatory information in regard to the substances in your country or region, therefore we request this matter would be filled by your responsibility.

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**Section 16: Other information, including date of preparation or last revision**

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Product name: Solution I

Product No.: PF213-11

**The product is not classified to GHS classifications.**

**Reference Book:**

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN  
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN  
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK(US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information  
Hazard Communication Standard - 2012 (29 CFR 1910.1200)  
GESTIS-Stoffdatenbank  
Pub Chem (OPEN CHEMISTRY DATABASE)

**[General Disclaimer]**

The GHS classification data given here is based on EU CLP - 2018 & US Hazard Communication Standard - 2012.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.



## Section 1: Identification

### Product identifier

**Product name:** Solution II  
**Product code:** PF201-21

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

#### Relevant identified uses of the product:

This product is for research and development only.

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

**Name:** GeneFrontier Corporation  
**Address:** SHARP Kashiwa Building 4F, 273-1  
Kashiwa, Kashiwa-shi, Chiba 277-0005,  
Japan  
**Telephone number:** +81-4-7137-6301  
**Fax number:** +81-4-7132-7530  
**e-mail address:** purefrefx@genefrontier.com  
**Emergency telephone number:** +81-4-7137-6301

## Section 2: Hazard(s) identification

### GHS classification and label elements of the product

**Classification of the substance or mixture:** Not classified to GHS classification.

**Label elements:** No GHS label element.  
No Signal word.

## Section 3: Composition/information on ingredients

**Mixture/Substance selection:** Mixture

Ingredient name	CAS No.	Content (%)
Water	7732-18-5	> 70
Buffer	CBI	0.1 - 1
Mineral	CBI	0.1 - 1
Glycerol	56-81-5	25 - 30

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Table 3 of Annex VI in EU CLP.

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## **Section 4: First-aid measures**

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### **Descriptions of first-aid measures**

IF INHALED	Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)	Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### **Most important symptoms/effects, acute and delayed**

No information available.

### **Indication of immediate medical attention and special treatment needed, if necessary**

Treat symptomatically.

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## **Section 5: Fire-fighting measures**

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### **Extinguishing media**

#### **Suitable extinguishing media:**

Use appropriate extinguishing media suitable for surrounding facilities.

### **Advice for firefighters**

#### **Specific fire-fighting measures:**

Evacuate non-essential personnel to safe area.

#### **Special protective equipment and precautions for fire-fighters:**

Wear fire/flammable resistant/retardant clothing.

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## **Section 6: Accidental release measures**

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

Wear gloves, goggles and other protective clothing. Wear dust mask if the product is dry.

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

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

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## **Section 7: Handling and storage**

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### **Precautions for safe handling**

#### **Safety treatments:**

- Avoid contact with skin.
- Avoid contact with eyes.

## Conditions for safe storage, including any incompatibilities

### Recommendation for storage:

Keep container tightly closed.

Store at temperatures not exceeding designated temperature.

Storage temperature upper limit: -20 °C/ -4 °F

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## Section 8: Exposure controls/personal protection

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### Control parameters

Adopted value

No Adopted value data available in ACGIH.

OSHA-PEL

(Glycerol) TWA: 15mg/m<sup>3</sup> (Total dust)  
TWA: 5mg/m<sup>3</sup> (Respirable fraction)

NIOSH-REL

(Glycerol) See Appendix D.

### Exposure controls

#### Appropriate engineering controls:

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures, such as personal protective equipment:

Hand protection	Wear protective gloves. Recommended material(s): impermeable or chemical resistant rubber.
Eye protection	Wear safety glasses with side-shields or chemical safety goggles.
Skin and body protection	Wear protective clothing.

#### Safety and Health measures:

Do not get in eyes, on skin, or on clothing.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

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## Section 9: Physical and chemical properties

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### Information on basic physical and chemical properties

Appearance

Physical state Liquid

Color Clear

Odor None

pH 7 – 8

Flammability Non-flammable

Solubility Solubility in water: Soluble

**Other information**

No information available.

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**Section 10: Stability and reactivity**

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**Reactivity**

No data available.

**Chemical stability**

Stable under normal storage/handling conditions.

**Possibility of hazardous reactions**

No hazardous reaction expected under normal handling.

**Conditions to avoid**

No further relevant information available.

**Incompatible materials**

No further relevant information available.

**Hazardous decomposition products**

No dangerous decomposition products known.

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**Section 11: Toxicological information**

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**Information on toxicological effects**

No Acute toxicity data available.  
No Irritant properties (Skin and Eyes) data available.  
No Allergenic and sensitizing effects data available.  
No Mutagenic effects data available.  
No Carcinogenic effects data available.  
No Teratogenic effects data available.  
No reproductive toxicity data available.  
No STOT-single/repeated exposure data available.  
No Aspiration hazard data available.

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**Section 12: Ecological information**

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**Ecotoxicity:**

No Aquatic toxicity data available.  
Water solubility  
(Mineral) 256 g/100 ml (20 °C) (ICSC, 2006)  
(Glycerol) miscible (ICSC, 2006)

**Persistence and degradability:**

No Persistence and degradability data available.

**Bioaccumulative potential:**

(Glycerol) log Pow=-1.76 (ICSC, 2006)

**Mobility in soil:**

No Mobility in soil data available.

**Other adverse effects:**

Ozone depleting chemical data not available.

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**Section 13: Disposal considerations**

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**Waste treatment methods****Relevant Information:**

Keep out of drains, sewers, ditches and waterways.

**Disposal considerations:**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packing:**

Dispose of container after using the contents completely.

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**Section 14: Transport information**

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**14.1. UN number, UN CLASS**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**14.2. UN proper shipping name**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

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

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

#### 14.4. Packing group

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

#### 14.5. Environmental hazards

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

#### 14.6. Special precautions for user

Not applicable.

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code

Not applicable.

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### Section 15: Regulatory information

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

No data available.

#### US major regulations

TSCA

Buffer; Mineral; Glycerol

#### Other regulatory information

We are not able to check up other regulatory information in regard to the substances in your country or region, therefore we request this matter would be filled by your responsibility.

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### Section 16: Other information, including date of preparation or last revision

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The product is not classified to GHS classifications.

#### Reference Book:

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN  
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN  
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK(US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information  
Hazard Communication Standard - 2012 (29 CFR 1910.1200)  
GESTIS-Stoffdatenbank  
Pub Chem (OPEN CHEMISTRY DATABASE)

**[General Disclaimer]**

The GHS classification data given here is based on EU CLP - 2018 & US Hazard Communication Standard - 2012.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

## Section 1: Identification

### Product identifier

**Product name:** Solution III  
**Product code:** PF-3A1

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

#### Relevant identified uses of the product:

This product is for research and development only.

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

**Name:** GeneFrontier Corporation  
**Address:** SHARP Kashiwa Building 4F, 273-1  
Kashiwa, Kashiwa-shi, Chiba 277-0005,  
Japan  
**Telephone number:** +81-4-7137-6301  
**Fax number:** +81-4-7132-7530  
**e-mail address:** purefrefx@genefrontier.com  
**Emergency telephone number:** +81-4-7137-6301

## Section 2: Hazard(s) identification

### GHS classification and label elements of the product

**Classification of the substance or mixture:** Not classified to GHS classification.

**Label elements:** No GHS label element.  
No Signal word.

## Section 3: Composition/information on ingredients

**Mixture/Substance selection:** Mixture

Ingredient name	CAS No.	Content (%)
Water	7732-18-5	> 90
Buffer	CBI	0.1 - 1
Mineral A	CBI	0.1 - 1
Mineral B	CBI	0.1 - 1

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Table 3 of Annex VI in EU CLP.



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## Section 4: First-aid measures

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### Descriptions of first-aid measures

IF INHALED	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)	Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### Most important symptoms/effects, acute and delayed

No information available.

### Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

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## Section 5: Fire-fighting measures

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### Extinguishing media

#### Suitable extinguishing media:

Use appropriate extinguishing media suitable for surrounding facilities.

### Advice for firefighters

#### Specific fire-fighting measures:

Evacuate non-essential personnel to safe area.

#### Special protective equipment and precautions for fire-fighters:

Wear fire/flammable resistant/retardant clothing.

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## Section 6: Accidental release measures

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

Wear gloves, goggles and other protective clothing. Wear dust mask if the product is dry.

### Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

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## Section 7: Handling and storage

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### Precautions for safe handling

#### Safety treatments:

- Avoid contact with skin.
- Avoid contact with eyes.

## Conditions for safe storage, including any incompatibilities

### Recommendation for storage:

Keep container tightly closed.

Store at temperatures not exceeding designated temperature.

Storage temperature upper limit: -20 °C/ -4 °F

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## Section 8: Exposure controls/personal protection

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### Control parameters

Adopted value

No Adopted value data available in ACGIH.

### Exposure controls

#### Appropriate engineering controls:

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures, such as personal protective equipment:

Hand protection	Wear protective gloves. Recommended material(s): impermeable or chemical resistant rubber.
Eye protection	Wear safety glasses with side-shields or chemical safety goggles.
Skin and body protection	Wear protective clothing.

#### Safety and Health measures:

Do not get in eyes, on skin, or on clothing.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

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## Section 9: Physical and chemical properties

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### Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	Clear
Odor	None
pH	7 – 8
Flammability	Non-flammable
Solubility	Solubility in water: Soluble

### Other information

No information available.

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## **Section 10: Stability and reactivity**

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### **Reactivity**

No data available.

### **Chemical stability**

Stable under normal storage/handling conditions.

### **Possibility of hazardous reactions**

No hazardous reaction expected under normal handling.

### **Conditions to avoid**

No further relevant information available.

### **Incompatible materials**

No further relevant information available.

### **Hazardous decomposition products**

No dangerous decomposition products known.

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## **Section 11: Toxicological information**

---

### **Information on toxicological effects**

No Acute toxicity data available.  
No Irritant properties (Skin and Eyes) data available.  
No Allergenic and sensitizing effects data available.  
No Mutagenic effects data available.  
No Carcinogenic effects data available.  
No Teratogenic effects data available.  
No reproductive toxicity data available.  
No STOT-single/repeated exposure data available.  
No Aspiration hazard data available.

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## **Section 12: Ecological information**

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### **Ecotoxicity:**

No Aquatic toxicity data available.  
Water solubility  
(Mineral) 256 g/100 ml (20 °C) (ICSC, 2006)

### **Persistence and degradability:**

No Persistence and degradability data available.

### **Bioaccumulative potential:**

No Bioaccumulative potential data available.

**Mobility in soil:**

No Mobility in soil data available.

**Other adverse effects:**

Ozone depleting chemical data not available.

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**Section 13: Disposal considerations**

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**Waste treatment methods****Relevant Information:**

Keep out of drains, sewers, ditches and waterways.

**Disposal considerations:**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packing:**

Dispose of container after using the contents completely.

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**Section 14: Transport information**

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**UN number, UN CLASS**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)	Not applicable.
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IATA Dangerous Goods Regulations	Not applicable.
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**UN proper shipping name**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)	Not applicable.
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IATA Dangerous Goods Regulations	Not applicable.
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**Transport hazard class(es)**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)	Not applicable.
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IATA Dangerous Goods Regulations	Not applicable.
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**Packing group**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)	Not applicable.
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IATA Dangerous Goods Regulations	Not applicable.
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**Environmental hazards**

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL 73/78 and IBC code**

Not applicable.

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**Section 15: Regulatory information**

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**Safety, health and environmental regulations/ legislation specific for the substance or mixture**

No data available.

**US major regulations**

TSCA

Buffer; Mineral A; Mineral B

**Other regulatory information**

We are not able to check up other regulatory information in regard to the substances in your country or region, therefore we request this matter would be filled by your responsibility.

---

**Section 16: Other information, including date of preparation or last revision**

---

**The product is not classified to GHS classifications.**

**Reference Book:**

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN  
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN  
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK(US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information  
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GESTIS-Stoffdatenbank  
Pub Chem (OPEN CHEMISTRY DATABASE)

**[General Disclaimer]**

The GHS classification data given here is based on EU CLP - 2018 & US Hazard Communication Standard - 2012.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

## Section 1: Identification

### Product identifier

**Product name:** DHFR DNA  
**Product code:** PF001-D2

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

#### Relevant identified uses of the product:

This product is for research and development only.

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

**Name:** GeneFrontier Corporation  
**Address:** SHARP Kashiwa Building 4F, 273-1  
Kashiwa, Kashiwa-shi, Chiba 277-0005,  
Japan  
**Telephone number:** +81-4-7137-6301  
**Fax number:** +81-4-7132-7530  
**e-mail address:** purefex@genefrontier.com  
**Emergency telephone number:** +81-4-7137-6301

## Section 2: Hazard(s) identification

### GHS classification and label elements of the product

**Classification of the substance or mixture:** Not classified to GHS classification.

**Label elements:** No GHS label element.  
No Signal word.

## Section 3: Composition/information on ingredients

**Mixture/Substance selection:** Mixture

Ingredient name	CAS No.	Content (%)
Water	7732-18-5	> 95
Nucleotide A	CBI	< 0.1
Nucleotide B	CBI	< 0.1
Nucleotide C	CBI	< 0.1
Nucleotide D	CBI	< 0.1

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Table 3 of Annex VI in EU CLP.

---

## **Section 4: First-aid measures**

---

### **Descriptions of first-aid measures**

IF INHALED	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)	Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### **Most important symptoms/effects, acute and delayed**

No information available.

### **Indication of immediate medical attention and special treatment needed, if necessary**

Treat symptomatically.

---

## **Section 5: Fire-fighting measures**

---

### **Extinguishing media**

#### **Suitable extinguishing media:**

Use appropriate extinguishing media suitable for surrounding facilities.

### **Advice for firefighters**

#### **Specific fire-fighting measures:**

Evacuate non-essential personnel to safe area.

#### **Special protective equipment and precautions for fire-fighters:**

Wear fire/flame resistant/retardant clothing.

---

## **Section 6: Accidental release measures**

---

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

Wear gloves, goggles and other protective clothing. Wear dust mask if the product is dry.

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

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

---

## Section 7: Handling and storage

---

### Precautions for safe handling

#### Safety treatments:

- Avoid contact with skin.
- Avoid contact with eyes.

### Conditions for safe storage, including any incompatibilities

#### Recommendation for storage:

- Keep container tightly closed.
- Store at temperatures not exceeding designated temperature.
- Storage temperature upper limit: -20 °C/ -4 °F

---

## Section 8: Exposure controls/personal protection

---

### Control parameters

- Adopted value
- No Adopted value data available in ACGIH.

### Exposure controls

#### Appropriate engineering controls:

- Eye wash station should be available.
- Washing facilities should be available.

#### Individual protection measures, such as personal protective equipment:

- |                          |   |
|--------------------------|---|
| Hand protection          | Wear protective gloves.<br>Recommended material(s): impermeable or chemical resistant rubber. |
| Eye protection           | Wear safety glasses with side-shields or chemical safety goggles.                             |
| Skin and body protection | Wear protective clothing.   |

#### Safety and Health measures:

- Do not get in eyes, on skin, or on clothing.
- Do not eat, drink or smoke when using this product.
- Wash hands thoroughly after handling.



---

## Section 9: Physical and chemical properties

---

### Information on basic physical and chemical properties

#### Appearance

Physical state	Liquid
Color	Clear
Odor	None
pH	7 – 8
Flammability	Non-flammable
Solubility	Solubility in water: Soluble

### Other information

No information available.

---

## Section 10: Stability and reactivity

---

### Reactivity

No data available.

### Chemical stability

Stable under normal storage/handling conditions.

### Possibility of hazardous reactions

No hazardous reaction expected under normal handling.

### Conditions to avoid

No further relevant information available.

### Incompatible materials

No further relevant information available.

### Hazardous decomposition products

No dangerous decomposition products known.

---

**Section 11: Toxicological information**

---

**Information on toxicological effects**

No Acute toxicity data available.  
No Irritant properties (Skin and Eyes) data available.  
No Allergenic and sensitizing effects data available.  
No Mutagenic effects data available.  
No Carcinogenic effects data available.  
No Teratogenic effects data available.  
No reproductive toxicity data available.  
No STOT-single/repeated exposure data available.  
No Aspiration hazard data available.

---

**Section 12: Ecological information**

---

**Ecotoxicity:**

No Aquatic toxicity data available.

**Persistence and degradability:**

No Persistence and degradability data available.

**Bioaccumulative potential:**

No Bioaccumulative potential data available.

**Mobility in soil:**

No Mobility in soil data available.

**Other adverse effects:**

Ozone depleting chemical data not available.

---

**Section 13: Disposal considerations**

---

**Waste treatment methods****Relevant Information:**

Keep out of drains, sewers, ditches and waterways.

**Disposal considerations:**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packing:**

Dispose of container after using the contents completely.

---

**Section 14: Transport information**

---

**UN number, UN CLASS**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**UN proper shipping name**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**Transport hazard class(es)**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**Packing group**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations) Not applicable.

IATA Dangerous Goods Regulations Not applicable.

**Environmental hazards**

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no): no

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL 73/78 and IBC code**

Not applicable.

---

**Section 15: Regulatory information**

---

**Safety, health and environmental regulations/ legislation specific for the substance or mixture**

No data available.

**US major regulations**

TSCA

Nucleotide A; Nucleotide C

**Other regulatory information**

We are not able to check up other regulatory information in regard to the substances in your country or region, therefore we request this matter would be filled by your responsibility.

---

**Section 16: Other information, including date of preparation or last revision**

---

**The product is not classified to GHS classifications.**

**Reference Book:**

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN  
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN  
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information  
Hazard Communication Standard - 2012 (29 CFR 1910.1200)  
GESTIS-Stoffdatenbank  
Pub Chem (OPEN CHEMISTRY DATABASE)

**[General Disclaimer]**

The GHS classification data given here is based on EU CLP - 2018 & US Hazard Communication Standard - 2012.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

---

## Section 1: Identification

---

### Product identifier

**Product name:** Cysteine  
**Product code:** PF213-6

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

#### Relevant identified uses of the product:

This product is for research and development only.

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

**Name:** GeneFrontier Corporation  
**Address:** SHARP Kashiwa Building 4F, 273-1  
Kashiwa, Kashiwa-shi, Chiba 277-0005,  
Japan  
**Telephone number:** +81-4-7137-6301  
**Fax number:** +81-4-7132-7530  
**e-mail address:** purefrex@genefrontier.com  
**Emergency telephone number:** +81-4-7137-6301

---

## Section 2: Hazard(s) identification

---

### GHS classification and label elements of the product

**Classification of the substance or mixture:** Not classified to GHS classification.

**Label elements:** No GHS label element.  
No Signal word.

---

## Section 3: Composition/information on ingredients

---

**Mixture/Substance selection:** Mixture

Ingredient name	CAS No.	Content (%)
Water	7732-18-5	> 99
L-Cysteine	52-90-4	0.1 - 0.2

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Table 3 of Annex VI in EU CLP.

---

## Section 4: First-aid measures

---

### Descriptions of first-aid measures

IF INHALED	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)	Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

#### **Most important symptoms/effects, acute and delayed**

No information available.

#### **Indication of immediate medical attention and special treatment needed, if necessary**

Treat symptomatically.

---

### **Section 5: Fire-fighting measures**

---

#### **Extinguishing media**

##### **Suitable extinguishing media:**

Use appropriate extinguishing media suitable for surrounding facilities.

#### **Advice for firefighters**

##### **Specific fire-fighting measures:**

Evacuate non-essential personnel to safe area.

##### **Special protective equipment and precautions for fire-fighters:**

Wear fire/flame resistant/retardant clothing.

---

### **Section 6: Accidental release measures**

---

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

Wear gloves, goggles and other protective clothing. Wear dust mask if the product is dry.

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

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

---

### **Section 7: Handling and storage**

---

#### **Precautions for safe handling**

##### **Safety treatments:**

- Avoid contact with skin.
- Avoid contact with eyes.

### Conditions for safe storage, including any incompatibilities

#### Recommendation for storage:

Keep container tightly closed.

Store at temperatures not exceeding designated temperature.

Storage temperature upper limit: -20 °C/ -4 °F

---

## Section 8: Exposure controls/personal protection

---

### Control parameters

Adopted value

No Adopted value data available in ACGIH.

### Exposure controls

#### Appropriate engineering controls:

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures, such as personal protective equipment:

Hand protection

Wear protective gloves.

Recommended material(s): impermeable or chemical resistant rubber.

Eye protection

Wear safety glasses with side-shields or chemical safety goggles.

Skin and body protection

Wear protective clothing.

#### Safety and Health measures:

Do not get in eyes, on skin, or on clothing.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

---

## Section 9: Physical and chemical properties

---

### Information on basic physical and chemical properties

Appearance

Physical state      Liquid

Color                      Clear

Odor                        None

pH                            7 – 8

Flammability              Non-flammable

Solubility                   Solubility in water: Soluble

### Other information

No information available.

---

## **Section 10: Stability and reactivity**

---

### **Reactivity**

No data available.

### **Chemical stability**

Stable under normal storage/handling conditions.

### **Possibility of hazardous reactions**

No hazardous reaction expected under normal handling.

### **Conditions to avoid**

No further relevant information available.

### **Incompatible materials**

No further relevant information available.

### **Hazardous decomposition products**

No dangerous decomposition products known.

---

## **Section 11: Toxicological information**

---

### **Information on toxicological effects**

No Acute toxicity data available.  
No Irritant properties (Skin and Eyes) data available.  
No Allergenic and sensitizing effects data available.  
No Mutagenic effects data available.  
No Carcinogenic effects data available.  
No Teratogenic effects data available.  
No reproductive toxicity data available.  
No STOT-single/repeated exposure data available.  
No Aspiration hazard data available.

---

## **Section 12: Ecological information**

---

### **Ecotoxicity:**

No Aquatic toxicity data available.

### **Persistence and degradability:**

No Persistence and degradability data available.

### **Bioaccumulative potential:**

No Bioaccumulative potential data available.

### **Mobility in soil:**

No Mobility in soil data available.



**Other adverse effects:**

Ozone depleting chemical data not available.

---

**Section 13: Disposal considerations**

---

**Waste treatment methods**

**Relevant Information:**

Keep out of drains, sewers, ditches and waterways.

**Disposal considerations:**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packing:**

Dispose of container after using the contents completely.

---

**Section 14: Transport information**

---

**UN number, UN CLASS**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**UN proper shipping name**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Transport hazard class(es)**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Packing group**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Environmental hazards**

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL 73/78 and IBC code**

Not applicable.

---

**Section 15: Regulatory information**

---

**Safety, health and environmental regulations/ legislation specific for the substance or mixture**

No data available.

**US major regulations**

TSCA

L-Cysteine

**Other regulatory information**

We are not able to check up other regulatory information in regard to the substances in your country or region, therefore we request this matter would be filled by your responsibility.

---

**Section 16: Other information, including date of preparation or last revision**

---

**The product is not classified to GHS classifications.**

**Reference Book:**

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN  
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN  
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK(US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information  
Hazard Communication Standard - 2012 (29 CFR 1910.1200)  
GESTIS-Stoffdatenbank  
Pub Chem (OPEN CHEMISTRY DATABASE)

**[General Disclaimer]**

The GHS classification data given here is based on EU CLP - 2018 & US Hazard Communication Standard - 2012.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

## Section 1: Identification

### Product identifier

**Product name:** DTT  
**Product code:** PF213-7

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

#### Relevant identified uses of the product:

This product is for research and development only.

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

**Name:** GeneFrontier Corporation  
**Address:** SHARP Kashiwa Building 4F, 273-1  
Kashiwa, Kashiwa-shi, Chiba 277-0005,  
Japan  
**Telephone number:** +81-4-7137-6301  
**Fax number:** +81-4-7132-7530  
**e-mail address:** purefrefx@genefrontier.com  
**Emergency telephone number:** +81-4-7137-6301

## Section 2: Hazard(s) identification

### GHS classification and label elements of the product

**Classification of the substance or mixture:** Not classified to GHS classification.

**Label elements:** No GHS label element.  
No Signal word.

## Section 3: Composition/information on ingredients

**Mixture/Substance selection:** Mixture

Ingredient name	CAS No.	Content (%)
Water	7732-18-5	> 99
DL-Dithiothreitol	3483-12-3	0.5 – 1.0

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Table 3 of Annex VI in EU CLP.

---

## Section 4: First-aid measures

---

### Descriptions of first-aid measures

IF INHALED	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)	Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### Most important symptoms/effects, acute and delayed

No information available.

### Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

---

## Section 5: Fire-fighting measures

---

### Extinguishing media

#### Suitable extinguishing media:

Use appropriate extinguishing media suitable for surrounding facilities.

### Advice for firefighters

#### Specific fire-fighting measures:

Evacuate non-essential personnel to safe area.

#### Special protective equipment and precautions for fire-fighters:

Wear fire/flame resistant/retardant clothing.

---

## Section 6: Accidental release measures

---

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

Wear gloves, goggles and other protective clothing. Wear dust mask if the product is dry.

### Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

---

## Section 7: Handling and storage

---

### Precautions for safe handling

#### Safety treatments:

- Avoid contact with skin.
- Avoid contact with eyes.

### Conditions for safe storage, including any incompatibilities

#### Recommendation for storage:

Keep container tightly closed.

Store at temperatures not exceeding designated temperature.

Storage temperature upper limit: -20 °C/ -4 °F

---

## Section 8: Exposure controls/personal protection

---

### Control parameters

Adopted value

No Adopted value data available in ACGIH.

### Exposure controls

#### Appropriate engineering controls:

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures, such as personal protective equipment:

Hand protection

Wear protective gloves.

Recommended material(s): impermeable or chemical resistant rubber.

Eye protection

Wear safety glasses with side-shields or chemical safety goggles.

Skin and body protection

Wear protective clothing.

#### Safety and Health measures:

Do not get in eyes, on skin, or on clothing.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

---

## Section 9: Physical and chemical properties

---

### Information on basic physical and chemical properties

Appearance

Physical state      Liquid

Color                      Clear

Odor                      Slight characteristic odor

pH                          7 – 8

Flammability            Non-flammable

Solubility                Solubility in water: Soluble

### Other information

No information available.

---

## **Section 10: Stability and reactivity**

---

### **Reactivity**

No data available.

### **Chemical stability**

Stable under normal storage/handling conditions.

### **Possibility of hazardous reactions**

No hazardous reaction expected under normal handling.

### **Conditions to avoid**

No further relevant information available.

### **Incompatible materials**

No further relevant information available.

### **Hazardous decomposition products**

No dangerous decomposition products known.

---

## **Section 11: Toxicological information**

---

### **Information on toxicological effects**

No Acute toxicity data available.  
No Irritant properties (Skin and Eyes) data available.  
No Allergenic and sensitizing effects data available.  
No Mutagenic effects data available.  
No Carcinogenic effects data available.  
No Teratogenic effects data available.  
No reproductive toxicity data available.  
No STOT-single/repeated exposure data available.  
No Aspiration hazard data available.

---

## **Section 12: Ecological information**

---

### **Ecotoxicity:**

No Aquatic toxicity data available.

### **Persistence and degradability:**

No Persistence and degradability data available.

### **Bioaccumulative potential:**

No Bioaccumulative potential data available.

### **Mobility in soil:**

No Mobility in soil data available.

**Other adverse effects:**

Ozone depleting chemical data not available.

---

**Section 13: Disposal considerations**

---

**Waste treatment methods**

**Relevant Information:**

Keep out of drains, sewers, ditches and waterways.

**Disposal considerations:**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packing:**

Dispose of container after using the contents completely.

---

**Section 14: Transport information**

---

**UN number, UN CLASS**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**UN proper shipping name**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Transport hazard class(es)**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Packing group**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Environmental hazards**

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL 73/78 and IBC code**

Not applicable.

---

**Section 15: Regulatory information**

---

**Safety, health and environmental regulations/ legislation specific for the substance or mixture**

No data available.

**US major regulations**

TSCA

DL-Dithiothreitol

**Other regulatory information**

We are not able to check up other regulatory information in regard to the substances in your country or region, therefore we request this matter would be filled by your responsibility.

---

**Section 16: Other information, including date of preparation or last revision**

---

**The product is not classified to GHS classifications.**

**Reference Book:**

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK(US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information  
Hazard Communication Standard - 2012 (29 CFR 1910.1200)  
GESTIS-Stoffdatenbank  
Pub Chem (OPEN CHEMISTRY DATABASE)

**[General Disclaimer]**

The GHS classification data given here is based on EU CLP - 2018 & US Hazard Communication Standard - 2012.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.



---

## Section 1: Identification

---

### Product identifier

**Product name:** GSH  
**Product code:** PF213-8

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

#### Relevant identified uses of the product:

This product is for research and development only.

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

**Name:** GeneFrontier Corporation  
**Address:** SHARP Kashiwa Building 4F, 273-1  
Kashiwa, Kashiwa-shi, Chiba 277-0005,  
Japan  
**Telephone number:** +81-4-7137-6301  
**Fax number:** +81-4-7132-7530  
**e-mail address:** purefrex@genefrontier.com  
**Emergency telephone number:** +81-4-7137-6301

---

## Section 2: Hazard(s) identification

---

### GHS classification and label elements of the product

**Classification of the substance or mixture:** Not classified to GHS classification.

**Label elements:** No GHS label element.  
No Signal word.

---

## Section 3: Composition/information on ingredients

---

**Mixture/Substance selection:** Mixture

Ingredient name	CAS No.	Content (%)
Water	7732-18-5	> 97
L-Glutathione reduced	70-18-8	2 – 3

Note: The figures shown above are not the specifications of the product.

The components not described in this component table are not listed in Table 3 of Annex VI in EU CLP.

---

## **Section 4: First-aid measures**

---

### **Descriptions of first-aid measures**

IF INHALED	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF ON SKIN (or hair)	Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
IF IN EYES	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF SWALLOWED	Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### **Most important symptoms/effects, acute and delayed**

No information available.

### **Indication of immediate medical attention and special treatment needed, if necessary**

Treat symptomatically.

---

## **Section 5: Fire-fighting measures**

---

### **Extinguishing media**

#### **Suitable extinguishing media:**

Use appropriate extinguishing media suitable for surrounding facilities.

### **Advice for firefighters**

#### **Specific fire-fighting measures:**

Evacuate non-essential personnel to safe area.

#### **Special protective equipment and precautions for fire-fighters:**

Wear fire/flammable resistant/retardant clothing.

---

## **Section 6: Accidental release measures**

---

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

Wear gloves, goggles and other protective clothing. Wear dust mask if the product is dry.

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

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

---

## **Section 7: Handling and storage**

---

### **Precautions for safe handling**

#### **Safety treatments:**

- Avoid contact with skin.
- Avoid contact with eyes.

### Conditions for safe storage, including any incompatibilities

#### Recommendation for storage:

Keep container tightly closed.

Store at temperatures not exceeding designated temperature.

Storage temperature upper limit: -20 °C/ -4 °F

---

## Section 8: Exposure controls/personal protection

---

### Control parameters

Adopted value

No Adopted value data available in ACGIH.

### Exposure controls

#### Appropriate engineering controls:

Eye wash station should be available.

Washing facilities should be available.

#### Individual protection measures, such as personal protective equipment:

Hand protection	Wear protective gloves. Recommended material(s): impermeable or chemical resistant rubber.
Eye protection	Wear safety glasses with side-shields or chemical safety goggles.
Skin and body protection	Wear protective clothing.

#### Safety and Health measures:

Do not get in eyes, on skin, or on clothing.

Do not eat, drink or smoke when using this product.

Wash hands thoroughly after handling.

---

## Section 9: Physical and chemical properties

---

### Information on basic physical and chemical properties

Appearance

Physical state	Liquid
Color	Clear
Odor	None
pH	7 – 8
Flammability	Non-flammable
Solubility	Solubility in water: Soluble

### Other information

No information available.

---

## **Section 10: Stability and reactivity**

---

### **Reactivity**

No data available.

### **Chemical stability**

Stable under normal storage/handling conditions.

### **Possibility of hazardous reactions**

No hazardous reaction expected under normal handling.

### **Conditions to avoid**

No further relevant information available.

### **Incompatible materials**

No further relevant information available.

### **Hazardous decomposition products**

No dangerous decomposition products known.

---

## **Section 11: Toxicological information**

---

### **Information on toxicological effects**

No Acute toxicity data available.  
No Irritant properties (Skin and Eyes) data available.  
No Allergenic and sensitizing effects data available.  
No Mutagenic effects data available.  
No Carcinogenic effects data available.  
No Teratogenic effects data available.  
No reproductive toxicity data available.  
No STOT-single/repeated exposure data available.  
No Aspiration hazard data available.

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## **Section 12: Ecological information**

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### **Ecotoxicity:**

No Aquatic toxicity data available.

### **Persistence and degradability:**

No Persistence and degradability data available.

### **Bioaccumulative potential:**

No Bioaccumulative potential data available.

### **Mobility in soil:**

No Mobility in soil data available.

**Other adverse effects:**

Ozone depleting chemical data not available.

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**Section 13: Disposal considerations**

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**Waste treatment methods**

**Relevant Information:**

Keep out of drains, sewers, ditches and waterways.

**Disposal considerations:**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packing:**

Dispose of container after using the contents completely.

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**Section 14: Transport information**

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**UN number, UN CLASS**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**UN proper shipping name**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Transport hazard class(es)**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Packing group**

Not applicable.

IMDG Code (International Maritime Dangerous Goods Regulations)

Not applicable.

IATA Dangerous Goods Regulations

Not applicable.

**Environmental hazards**

MARPOL Annex III - Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL 73/78 and IBC code**

Not applicable.

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**Section 15: Regulatory information**

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**Safety, health and environmental regulations/ legislation specific for the substance or mixture**

No data available.

**US major regulations**

TSCA

L-Glutathione Reduced

**Other regulatory information**

We are not able to check up other regulatory information in regard to the substances in your country or region, therefore we request this matter would be filled by your responsibility.

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**Section 16: Other information, including date of preparation or last revision**

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**The product is not classified to GHS classifications.**

**Reference Book:**

Globally Harmonized System of classification and labelling of chemicals, (5th ed., 2013), UN  
Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN  
IMDG Code, 2018 Edition (Incorporating Amendment 39-18)  
IATA Dangerous Goods Regulations (60th Edition) 2019  
Classification, labelling and packaging of substances and mixtures (table3-1 ECNO6182012)  
2016 EMERGENCY RESPONSE GUIDEBOOK(US DOT)  
2019 TLVs and BEIs. (ACGIH)  
<http://monographs.iarc.fr/ENG/Classification/index.php>  
Supplier's data/information  
Hazard Communication Standard - 2012 (29 CFR 1910.1200)  
GESTIS-Stoffdatenbank  
Pub Chem (OPEN CHEMISTRY DATABASE)

**[General Disclaimer]**

The GHS classification data given here is based on EU CLP - 2018 & US Hazard Communication Standard - 2012.

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.