



# SAFETY DATA SHEET

United States

## Section 1. Identification

Product name

**PF-CHO™ Multi-Powder System,  
Recommended additions: 2.0 g/L Sodium  
Bicarbonate, 1.0 g/L Poloxamer 188, 4 mM L-  
Glutamine, 5L, 82g**

Catalogue Number

SH30333.01



9 0 S H 3 0 3 3 3 . 0 1

Other means of identification

Not available.

Product type

Solid.

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

#### Identified uses

Use in laboratories  
Scientific research and development  
Not available.

Supplier / Manufacturer

Cytiva Austria  
Krempelstr. 5  
4061 Pasching  
AUSTRIA  
Tel. (+43) 7229 64865  
Fax (+43) 7229 64866

HyClone Laboratories  
925 West 1800 South  
Logan, Utah 84321  
Phone: (435) 792-8000

Cytiva Singapore  
1 Maritime Square #13-01  
Harbourfront Centre  
Singapore 099253

Cytiva  
Amersham Place  
Little Chalfont  
Buckinghamshire  
HP7 9NA United Kingdom  
+44 0800 515 313

Cytiva USA  
100 Results Way  
Marlborough, MA 01752  
1-800-526-3593

In case of emergency

ChemTrec US (available 24/7) **1-800-424-9300**



## Section 2. Hazards identification

**OSHA/HCS status** While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture** Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 31.9%  
Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 60.4%  
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 60.4%  
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 24.6%

### GHS label elements

**Signal word** No signal word.

**Hazard statements** No known significant effects or critical hazards.

### Precautionary statements

**Prevention** Not applicable.

**Response** Not applicable.

**Storage** Not applicable.

**Disposal** Not applicable.

**Hazards not otherwise classified** None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** Mixture

**Other means of identification** Not available.

### CAS number/other identifiers

**CAS number** Not applicable.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

## Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact** Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion** Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

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

#### Potential acute health effects

**Eye contact** No known significant effects or critical hazards.

**Inhalation** No known significant effects or critical hazards.

**Skin contact** No known significant effects or critical hazards.

**Ingestion** No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

**Eye contact** No specific data.

**Inhalation** No specific data.

**Skin contact** No specific data.

**Ingestion** No specific data.

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

**Notes to physician** In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** No specific treatment.



**Protection of first-aiders** No action shall be taken involving any personal risk or without suitable training.

**See toxicological information (Section 11)**

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## Section 5. Fire-fighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	No specific fire or explosion hazard.
<b>Hazardous thermal decomposition products</b>	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides halogenated compounds metal oxide/oxides
<b>Special protective actions for fire-fighters</b>	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
<b>Environmental precautions</b>	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

<b>Small spill</b>	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
<b>Large spill</b>	Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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## Section 7. Handling and storage

### Precautions for safe handling

<b>Protective measures</b>	Put on appropriate personal protective equipment (see Section 8).
<b>Advice on general occupational hygiene</b>	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
<b>Conditions for safe storage, including any incompatibilities</b>	Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

None.

**Appropriate engineering controls** Good general ventilation should be sufficient to control worker exposure to airborne contaminants.



**Environmental exposure controls** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

**Hygiene measures** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

**Skin protection**

**Hand protection** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

**Section 9. Physical and chemical properties**

**Appearance**

**Physical state** Solid.

**Color** Not available.

**Odor** Not available.

**Odor threshold** Not available.

**pH** Not applicable.

**Melting point** Not available.

**Boiling point** Not available.

**Flash point** [Product does not sustain combustion.]

**Burning time** Not available.

**Burning rate** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

**Lower and upper explosive (flammable) limits** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** Not available.

**Solubility** Not available.

**Solubility in water** Not available.

**Partition coefficient: n-octanol/ water** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**SADT** Not available.

**Viscosity** Not available.

**Flow time (ISO 2431)** Not available.

**Aerosol product**

**Section 10. Stability and reactivity**

**Reactivity** No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** The product is stable.

**Possibility of hazardous reactions** Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** No specific data.

**Incompatible materials** No specific data.

**Hazardous decomposition products** Under normal conditions of storage and use, hazardous decomposition products should not be produced.



## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Not available.

#### Irritation/Corrosion

Not available.

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

<b>Eye contact</b>	No known significant effects or critical hazards.
<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	No specific data.
<b>Inhalation</b>	No specific data.
<b>Skin contact</b>	No specific data.
<b>Ingestion</b>	No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

#### Long term exposure

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

### Potential chronic health effects

Not available.

<b>General</b>	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Teratogenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates



Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
PF-CHO™ Multi-Powder System, Recommended additions: 2.0 g/L Sodium Bicarbonate, 1.0 g/L Poloxamer 188, 4 mM L-Glutamine	114438.3	N/A	N/A	N/A	N/A

## Section 12. Ecological information

### Toxicity

Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

Not available.

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) Not available.

**Other adverse effects** No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification
<b>UN number</b>	Not available.	Not available.	Not available.
<b>UN proper shipping name</b>	Not available.	Not available.	Not available.
<b>Transport hazard class(es)</b>	Not available.	Not available.	Not available.
<b>Packing group</b>	-	-	-
<b>Environmental hazards</b>	No.	No.	No.
<b>Additional information</b>	-	-	-

	ADR/RID	IMDG	IATA
<b>UN number</b>	Not available.	Not available.	Not available.
<b>UN proper shipping name</b>	Not available.	Not available.	Not available.
<b>Transport hazard class(es)</b>	Not available.	Not available.	Not available.
<b>Packing group</b>	-	-	-
<b>Environmental hazards</b>	No.	No.	No.
<b>Additional information</b>	-	-	-

**Special precautions for user** **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code** Not available.

<b>Proper shipping name</b>	Not available.
<b>Ship type</b>	Not available.
<b>Pollution category</b>	Not available.



## Section 15. Regulatory information

### U.S. Federal regulations

**TSCA 4(a) proposed test rules:** glycine  
**TSCA 8(a) PAIR:** ammonium trioxovanadate  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**Clean Water Act (CWA) 307:** Sulfuric acid, zinc salt (1:1), heptahydrate; sodium selenite; Copper chloride (CuCl<sub>2</sub>), dihydrate; Cadmium chloride, hydrate (2:5)  
**Clean Water Act (CWA) 311:** acetic acid; ammonium iron(III) citrate; Sulfuric acid, zinc salt (1:1), heptahydrate; sodium selenite; Copper chloride (CuCl<sub>2</sub>), dihydrate; Cadmium chloride, hydrate (2:5); disodium hydrogenorthophosphate

<b>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</b>	Listed
<b>Clean Air Act Section 602 Class I Substances</b>	Not listed
<b>Clean Air Act Section 602 Class II Substances</b>	Not listed
<b>DEA List I Chemicals (Precursor Chemicals)</b>	Not listed
<b>DEA List II Chemicals (Essential Chemicals)</b>	Not listed

### SARA 302/304

#### Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
sodium selenite	<0.0001425	Yes.	100 / 10000	-	100	-
<b>SARA 304 RQ</b>	77972709.6 lbs / 35399610.1 kg					

### SARA 311/312

**Classification** Not applicable.

#### Composition/information on ingredients

No products were found.

### State regulations

**Massachusetts** The following components are listed: FERRIC AMMONIUM CITRATE; PHOSPHORIC ACID, DISODIUM SALT; SODIUM PHOSPHATE, DIBASIC

**New York** The following components are listed: Ferric ammonium citrate; Sodium phosphate, dibasic

**New Jersey** The following components are listed: FERRIC AMMONIUM CITRATE; 1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-, AMMONIUM IRON(3+)SALT; SODIUM PHOSPHATE, DIBASIC; PHOSPHORIC ACID, DISODIUM SALT

**Pennsylvania** The following components are listed: 1,2,3-PROPANETRICARBOXYLIC ACID, 2-HYDROXY-, AMMONIUM IRON(3+) SALT; PHOSPHORIC ACID, DISODIUM SALT

### California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

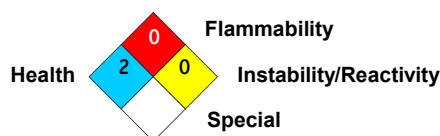
### Inventory list

<b>United States</b>	Not determined.
<b>Europe</b>	Not determined.
<b>Canada inventory</b>	Not determined.



## Section 16. Other information

### National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
Not classified.	

### History

Date of printing	4/15/2020
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Version	1

### Key to abbreviations

sds\_author@cytiva.com  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
N/A = Not available  
UN = United Nations

### References

Not available.

▀ Indicates information that has changed from previously issued version.

### Notice to reader

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