



# Safety Data Sheet

Canada

## Section 1. Identification

**Product name** HyClone™ CD BEVS complete medium

**Catalogue Number** SH31205.01



9 0 S H 3 1 2 0 5 . 0 1

**Product type** Powder.

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

For Further Manufacturing or Research Use. Not for Diagnostic or Therapeutic Use.

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

Cytiva Austria  
Kremsplstr. 5  
4061 Pasching  
AUSTRIA  
Tel.: +43 7229 64865  
Fax: +43 7229 64866

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

**Importer** Cytiva Canada  
1055 Vernon Dr  
Vancouver BC V6A 3P4  
Canada  
+1 778-956-2584

### In case of emergency

INFOTRAC  
Outside of the United States, call 24 Hour number: 001-352-323-3500 (Call Collect)  
In the United States, call 24 Hour number: 1-800-535-5053

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## Section 2. Hazard identification

**Classification of the substance or mixture** AQUATIC HAZARD (LONG-TERM) - Category 3

### GHS label elements

**Signal word** No signal word.

**Hazard statements** Harmful to aquatic life with long lasting effects.

### Precautionary statements

**Prevention** Avoid release to the environment.

**Response** Not applicable.

**Storage** Not applicable.

**Disposal** Dispose of contents and container in accordance with all local, regional, national and international regulations.



9 5 3 1 3 1 7 0 8 4

<b>Supplemental label elements</b>	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 72.2%
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### Section 3. Composition/information on ingredients

**Substance/mixture** Mixture

**Other means of identification** Not available.

Ingredient name	Synonyms	% (w/w)	CAS number
Glucose	D-Glucose; Dextrose; D-gluconaldehyde; product composed of 62,1 % calcium carrageenate, 32,9 % dextrose and 5 % sucrose; DEXTROSE, ANHYDROUS; Grape sugar; GLUCOSE, D-; corn sugar; glucolin; D-GLUCOSE ANHYDROUS GRANULAR; GLUCOSE POWDER	≥15 - ≤40	CAS: 50-99-7
L-Glutamic acid	L-Glutamic acid; 2-Glutamic acid; .alpha.-Aminoglutaric acid; Glutaminic acid; E 620; L-2-aminopentanedioic acid; L-α-aminoglutaric acid; Glutamic acid, L-; GLUTAMIC ACID, (S)-(+)-; 1-AMINOPROPANE-1,3-DICARBOXYLIC ACID; AMINOGLUTARIC ACID, ALPHA-	≥1 - ≤5	CAS: 56-86-0
Sucrose	.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl; α-D-Glucopyranoside, β-D-fructofuranosyl; Saccharose; Sugar; Table sugar; Saccarose; Rock candy; Granulated sugar; Confectioner's sugar; Cane sugar; Beet sugar	≥1 - ≤5	CAS: 57-50-1
L-serine	2-Serine; serine; Serine, L-; 2-AMINO-3-HYDROXYPROPANOIC ACID, (S)-; BETA-HYDROXYALANINE; 2-Amino-3-hydroxypropanoic acid; 2-Amino-3-hydroxypropionic acid; D,L-Serine; (S)-2-Amino-3-hydroxypropanoic acid; SERINE PURISS, L-	≥1 - ≤5	CAS: 56-45-1
Maltose monohydrate	D-Glucose, 4-O-.alpha.-D-glucopyranosyl-, monohydrate; Maltose, monohydrate; 4-O-α-D-glucopyranosyl-D-glucose hydrate; D-(+)-maltose hydrate; Maltose; D-Glucose, 4-O-α-D-glucopyranosyl-, monohydrate; Maltose monohydrate; D(+)-Maltose monohydrate; D-Glucose, 4-O-alpha-D-glucopyranosyl-, hydrate (1:1); 2R,3R,4R,5R)-2,3,5,6-tetrahydroxy-4-[(2R,3R,4S,5S,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxyhexanal hydrate	≥1 - ≤5	CAS: 6363-53-7
L-valine	2-Valine; 2-Amino-3-methylbutanoic acid; valine; Valine, L-; ALPHA-AMINO-BETA-METHYLBUTYRIC ACID, L-; ALPHA-AMINOISOVALERIC ACID, L-(+)-; VALINE, (S)-; 2-AMINO-3-METHYLBUTANOIC ACID, (S)-; 2-AMINO-3-METHYLBUTYRIC ACID, (S)-; ALPHA-AMINO-BETA-METHYLBUTYRIC ACID, (S)-; 2-Amino-3-methylbutyric acid	≥1 - ≤5	CAS: 72-18-4
magnesium sulphate	Sulfuric acid magnesium salt (1:1); Sulfuric acid, magnesium salt (1:1); Magnesium sulfate; MAGNESIUM SULFATE ANHYDROUS; Magnesium sulfate (1:1); SULFURIC ACID MAGNESIUM SALT; MANGANESEIUM SULFATE; Magnesium Sulphate A.R.; magnesium(2+) sulfate	≥1 - ≤5	CAS: 7487-88-9
L-Leucine	2-Leucine; Leucine; E 641; L-Leu; alpha-aminoisocaproic acid;; (S)-2-amino-4-methylpentanoic acid; L-2-amino-4-methylvaleric acid; 2-aminoisobutylic acid; Leucine, L-; 2-Amino-4-methylvaleric acid; ALPHA-AMINOISOCAPROIC ACID; 2-AMINO-4-METHYLPENTANOIC ACID,	≥0.5 - ≤1.5	CAS: 61-90-5



(S)-; 2-Amino-4-methylpentanoic acid

Cupric chloride dihydrate

Cupric chloride, dihydrate; Copper (II) chloride, dihydrate; copper dichloride hydrate; Copper(2+) chloride dihydrate; Copper chloride, dihydrate; Cupric chloride dihydrate; Coppertrace; Copper chloride dihydrate; Copper chloride (CuCl<sub>2</sub>), dihydrate; Copper dichloride dihydrate; Copper (II) Chloride Dihydrate

≤0.1

CAS: 10125-13-0

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified 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

<b>Eye contact</b>	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.
<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.
<b>Skin contact</b>	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	Wash out mouth with water. 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.

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

#### Potential acute health effects

<b>Eye contact</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
<b>Inhalation</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	Adverse symptoms may include the following: irritation redness
<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing
<b>Skin contact</b>	No specific data.
<b>Ingestion</b>	No specific data.

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

<b>Notes to physician</b>	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.
<b>Specific treatments</b>	No specific treatment.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	Use dry chemical powder.
<b>Unsuitable extinguishing media</b>	None known.

<b>Specific hazards arising from the chemical</b>	May form explosible dust-air mixture if dispersed. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
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<b>Hazardous thermal decomposition products</b>	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
<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.

## 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. Shut off all ignition sources. No flames, smoking or flames in hazard area. Avoid breathing dust. 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). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

<b>Small spill</b>	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

<b>Protective measures</b>	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid release to the environment. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
<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 a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.



Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name  
Sucrose

Exposure limits  
**CA Saskatchewan Provincial (Canada, 4/2021)**  
STEL 15 minutes: 20 mg/m³.  
TWA 8 hours: 10 mg/m³.  
**CA British Columbia Provincial (Canada, 9/2024)**  
Notes: The 8-hour TWA listed in the Table is for the total dust. The substance also has an 8-hour TWA of 3 mg/m3 for the respirable fraction.  
TWA 8 hours: 10 mg/m³. Form: Total dust.  
TWA 8 hours: 3 mg/m³. Form: respirable fraction.  
**CA Ontario Provincial (Canada, 6/2019)**  
TWA 8 hours: 10 mg/m³.  
**CA Quebec Provincial (Canada, 2/2024)**  
TWA8EV 8 hours: 10 mg/m³.  
**CA Alberta Provincial (Canada, 3/2023)**  
OEL 8 hours: 10 mg/m³.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls	Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
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. If operating conditions cause high dust concentrations to be produced, use dust goggles.
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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

Physical state	Solid. [Powder.]
Color	Off-white.
Odor	Not available.
Odor threshold	Not available.
pH	3.8 to 4.2 [Conc. (% w/w): 4.8%]
Melting point/freezing point	Not available.
Boiling point or initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Burning time	Not available.
Burning rate	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Lower and upper explosive (flammable) limits	Not applicable.
Vapor pressure	Not available.
Relative vapor density	Not applicable.
Relative density	Not available.
Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Dynamic (room temperature): Not available. Kinematic (room temperature): Not available. Kinematic (40°C (104°F)): Not available.
Flow time (ISO 2431)	Not available.

### Particle characteristics

Median particle size	Not available.
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## 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	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials
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

Product/ingredient name	Result
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Glucose

**Rat - Oral - LD50**

25800 mg/kg

Toxic effects: Behavioral - Coma Lung, Thorax, or Respiration - Cyanosis Gastrointestinal - Hypermotility, diarrhea

L-Glutamic acid

**Rat - Oral - LD50**

&gt;30 g/kg

Sucrose

**Rat - Oral - LD50**

29700 mg/kg

Toxic effects: Behavioral - Somnolence (general depressed activity) Lung, Thorax, or Respiration - Cyanosis Gastrointestinal - Hypermotility, diarrhea

L-serine

**Rat - Oral - LD50**

14 g/kg

L-valine

**Rat - Oral - LD50**

2000 mg/kg

L-Leucine

**Rat - Oral - LD50**

16000 mg/kg

**Conclusion/Summary  
[Product]**

Not available.

**Skin corrosion/irritation**

Not available.

**Conclusion/Summary  
[Product]**

Not available.

**Ingredient name**

L-serine

**Conclusion/Summary**

May cause skin irritation.

L-valine

May cause skin irritation.

L-Leucine

May cause skin irritation.

**Serious eye damage/eye irritation**

Not available.

**Conclusion/Summary  
[Product]**

Not available.

**Ingredient name**

L-serine

**Conclusion/Summary**

May cause eye irritation.

L-valine

May cause eye irritation.

L-Leucine

May cause eye irritation.

**Respiratory corrosion/irritation**

Not available.

**Conclusion/Summary  
[Product]**

Not available.

**Respiratory or skin sensitization**

Not available.

**Skin****Conclusion/Summary  
[Product]**

Not available.

**Respiratory****Conclusion/Summary  
[Product]**

Not available.

**Germ cell mutagenicity**

Not available.



**Conclusion/Summary  
[Product]** Not available.

**Carcinogenicity**

Not available.

**Conclusion/Summary  
[Product]** Not available.

**Classification**

Product/ingredient name	IARC	NTP	ACGIH
Sucrose	-	-	A4

**Reproductive toxicity**

Not available.

**Conclusion/Summary  
[Product]** 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, Eyes.

**Potential acute health effects**

<b>Eye contact</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
<b>Inhalation</b>	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
<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>	Adverse symptoms may include the following: irritation redness
<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing
<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.

**Conclusion/Summary  
[Product]**

Not available.

**General**

Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

**Carcinogenicity**

No known significant effects or critical hazards.

**Mutagenicity**

No known significant effects or critical hazards.

**Reproductive toxicity**

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)
DPM-HyClone™ CD BEVS complete medium	20199.2	13580.8	N/A	143.3	N/A
Glucose	25800	N/A	N/A	N/A	N/A
Sucrose	29700	N/A	N/A	N/A	N/A
L-serine	14000	N/A	N/A	N/A	N/A
L-valine	2000	N/A	N/A	N/A	N/A
magnesium sulphate	500	1100	N/A	11	N/A
L-Leucine	16000	N/A	N/A	N/A	N/A
Cupric chloride dihydrate	100	N/A	N/A	N/A	N/A

**Section 12. Ecological information****Toxicity****Product/ingredient name****Result**

L-serine

**Acute - EC50**

Daphnia

83 mg/l [48 hours]

**Acute - NOEC**

Algae

1000 mg/l [72 hours]

L-valine

**LC50**

Fish

10000 mg/l [96 hours]

magnesium sulphate

**Chronic - NOEC - Fresh water**Daphnia - Water flea - *Daphnia magna* - Neonate

Age: &lt;24 hours

360 mg/l [3 weeks]

Effect: Reproduction

**Chronic - IC10 - Fresh water**Aquatic plants - Lesser Duckweed - *Lemna aequinoctialis*

1.9 mg/l [96 hours]

Effect: Population

**Acute - IC50 - Fresh water**Aquatic plants - Lesser Duckweed - *Lemna aequinoctialis*

4.4 mg/l [96 hours]

Effect: Population

**Acute - LC50 - Fresh water**Fish - Purple Spotted Gudgeon - *Mogurnda mogurnda* - Larvae

40 mg/l [96 hours]

Effect: Mortality

**Acute - EC50 - Fresh water**Daphnia - Water flea - *Daphnia magna*

343.56 mg/l [48 hours]

Effect: Intoxication

Cupric chloride dihydrate

**Acute - EC50 - Marine water**

US EPA

Algae - Diatom - *Skeletonema costatum*

Age: 3 days

9.52 ppb [72 hours]

Effect: Population

**Chronic - NOEC - Marine water**

US EPA

Crustaceans - Harpacticoid copepod - *Tisbe battagliai*

Age: &lt;24 hours

18 ppb [21 days]



Effect: Mortality

**Conclusion/Summary [Product]** Not available.

**Ingredient name**

L-serine  
L-valine  
L-Leucine

**Conclusion/Summary**

Naturally occurring substance  
Naturally occurring substance  
Naturally occurring substance

**Persistence and degradability****Product/ingredient name**

L-valine

**Result**

82% [28 days]

**Conclusion/Summary [Product]** Not available.

**Ingredient name**

L-serine  
L-valine  
L-Leucine

**Conclusion/Summary**

Not expected to bioaccumulate. Naturally occurring substance  
Not expected to bioaccumulate. Naturally occurring substance  
Not expected to bioaccumulate. Naturally occurring substance

**Product/ingredient name**

Glucose  
L-valine

**Aquatic half-life**

-  
-

**Photolysis**

-  
-

**Biodegradability**

Readily  
Readily

**Bioaccumulative potential****Product/ingredient name**

Glucose  
L-Glutamic acid  
Sucrose  
L-serine  
L-valine  
L-Leucine

**LogP<sub>ow</sub>**

-3.24  
<-4  
-3.7  
-3.07  
-2.26  
-1.52

**BCF**

-  
-  
-  
0.609  
0.846  
0.849

**Potential**

Low  
Low  
Low  
Low  
Low  
Low

**Mobility in soil**

**Soil/Water partition coefficient** 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. 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**

	<b>TDG Classification</b>	<b>DOT Classification</b>	<b>ADR/RID</b>	<b>IMDG</b>	<b>IATA</b>
<b>UN number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>UN proper shipping name</b>	-	-	-	-	-
<b>Transport hazard class(es)</b>	-	-	-	-	-
<b>Packing group</b>	-	-	-	-	-
<b>Environmental hazards</b>	No.	No.	No.	No.	No.



**Additional information**

- - - - -

**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 IMO instruments**

Not available.

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**Section 15. Regulatory information**
**Canadian lists****Canadian NPRI**

The following components are listed: selenium (and its compounds)

**CEPA Toxic substances**

None of the components are listed.

**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****Canada**

Not determined.

**United States**

Not determined.

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**Section 16. Other information**
**History****Date of printing**

1/27/2026

**Date of issue/Date of revision**

1/27/2026

**Date of previous issue**

No previous validation

**Version**

1

sds\_author@cytiva.com

**Key to abbreviations**

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HPR = Hazardous Products Regulations

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

**Procedure used to derive the classification****Classification**

AQUATIC HAZARD (LONG-TERM) - Category 3

**Justification**

Calculation method

**References**

Not available.



Indicates information that has changed from previously issued version.



**Notice to reader**

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