

Safety Data Sheet

Canada

Section 1. Identification

Product name HyClone™ prime expression medium

(chemically defined), 5L

Catalogue Number SH31198.01

9 0 S H 3 1 1 9 8 . 0

Product type Powder.

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

For further manufacturing.

Supplier HyClone Laboratories

925 West 1800 South Logan, Utah 84321 Phone: (435) 792-8000 Cytiva Austria Kremplstr. 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

250 Howe Street, Suite 1400-C

Vancouver, British Columbia, Canada, V6C 3S7

1 800 463 5800

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

Section 2. Hazard identification

Classification of the substance

or mixture

Not classified.

GHS label elements

Signal word No signal word.

Hazard statements No known significant effects or critical hazards.

Precautionary statements

PreventionNot applicable.ResponseNot applicable.StorageNot applicable.DisposalNot applicable.

Article Number 31141431



Page: 1/10

Supplemental label elements Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic

environment: 46.6%

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Other means of identification Not available.

In ava dient neme	Sumanuma	0/ (14/14)	CAS mumbar
Ingredient name 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	% (w/w) ≥15 - ≤40	CAS number CAS: 50-99-7
L-serine	2-Serine; serine; Serine, L-; 2-AMINO- 3-HYDROXYPROPANOIC ACID, (S)-; BETA-HYDROXYALANINE; 2-Amino- 3-hydroxypropanoic acid; 2-Amion- 3-hydroxypropionic acid; D,L-Serine; (S) -2-Amino-3-hydroxypropanoic acid; SERINE PURISS, L-	≥1 - ≤5	CAS: 56-45-1
I-Leucine	2-Leucine; Leucine; E 641; L-Leu; alpha- aminoisocaproic acid;; (S)-2-amino- 4-methylpentanoic acid; L-2-amino- 4-methylvaleric acid; 2-aminoisobutylacetic acid; Leucine, L-; 2-Amino-4-methylvaleric acid; ALPHA-AMINOISOCAPROIC ACID; 2-AMINO-4-METHYLPENTANOIC ACID, (S)-; 2-Amino-4-methylpentanoic acid	≥1 - ≤5	CAS: 61-90-5
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	≥0.5 - ≤1.5	CAS: 72-18-4
I-Arginine	L-Arginine; 2-Arginine; Arginine, L-; N5- (AMINOIMINOMETHYL)-L-ORNITHINE; 5-((AMINOIMINOMETHYL)AMINO)-L- NORVALINE; AMINO-DELTA- GUANIDINOVALERIC ACID, L-ALPHA-; ARGININE, L-(+)-; 2-AMINO- 5-GUANIDINOVALERIC ACID, (S)-; 2-AMINO-5-((AMINOIMINOMETHYL) AMINO)PENTANOIC ACID, (S)-; 1-AMINO- 4-GUANIDOVALERIC ACID; GUANIDINE AMINOVALERIC ACID	≥0.5 - ≤1.5	CAS: 74-79-3
I-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-	≥0.5 - ≤1.5	CAS: 56-86-0

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

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. 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

Exposure to airborne concentrations above statutory or recommended exposure limits may cause

irritation of the eyes.

Inhalation Exposure to airborne concentrations above statutory or recommended exposure limits may cause

irritation of the nose, throat and lungs.

Skin contact

No known significant effects or critical hazards.

Ingestion

No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact Adverse symptoms may include the following:

irritation redness

Inhalation Adverse symptoms may include the following:

respiratory tract irritation

coughing

Skin contactNo specific data.IngestionNo 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-aidersNo action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Unsuitable extinguishing

media

None known.

Specific hazards arising from

the chemical

May form explosible dust-air mixture if dispersed.

Hazardous thermal

decomposition products

Decomposition products may include the following materials:

carbon dioxide carbon monoxide nitrogen oxides sulfur oxides phosphorus oxides halogenated compounds metal oxide/oxides

Special protective actions for

fire-fighters

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.

Special protective equipment for fire-fighters

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

For non-emergency personnel

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 flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.

For emergency responders

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".

Environmental precautions

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

Small spill

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.

Large spill

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

Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. 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. 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.

Advice on general occupational hygiene 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.

Conditions for safe storage, including any incompatibilities

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

None.

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.

Article Number 31141431



Individual protection measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, Hygiene measures

> 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.

Safety eyewear complying with an approved standard should be used when a risk assessment Eye/face protection

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.

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. рΗ 5.2 to 7.4 Melting point/freezing point Not available. Boiling point or initial boiling Not available. point and boiling range

Flash point Not applicable. **Burning time** Not available **Burning rate** Not available **Evaporation rate** Not available. **Flammability** Not available. Not applicable.

Lower and upper explosive

(flammable) limits

Vapor pressure Not available. Relative vapor density Not applicable. Relative density Not available. Solubility in water Not available. Partition coefficient: n-octanol/ 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

Not available Median particle size



Version 0.02

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.

Reactive or incompatible with the following materials: oxidizing materials

Hazardous decomposition

products

Incompatible materials

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

Glucose

L-serine

I-Leucine

L-valine

I-Arginine

Rat - Oral - LD50 25800 mg/kg

Result

Toxic effects: Behavioral - Coma Lung, Thorax, or Respiration -

Cyanosis Gastrointestinal - Hypermotility, diarrhea

Rat - Oral - LD50

14 g/kg Rat - Oral - LD50

16000 mg/kg Rat - Oral - LD50 2000 mg/kg

Rat - Oral - LD50 12000 mg/kg

Rat - Oral - LD50 >30 g/kg

Conclusion/Summary

[Product]

I-Glutamic acid

Not available.

Skin corrosion/irritation

Not available.

Conclusion/Summary

[Product]

Not available

Ingredient name Conclusion/Summary L-serine May cause skin irritation. I-Leucine May cause skin irritation. L-valine May cause skin irritation.

Serious eye damage/eye irritation

Not available

Conclusion/Summary

Not available.

[Product]

Ingredient name Conclusion/Summary I -serine May cause eye irritation. I-Leucine May cause eye irritation. May cause eye irritation.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary

[Product]

Not available.

Article Number 31141431



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.

Ingredient name

Conclusion/Summary

I-Arginine

To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

Substanted have not been ancreaging investig

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

Routes of entry anticipated: Oral, Dermal, Eyes.

of exposure

Potential acute health effects

Exposure to airborne concentrations above statutory or recommended exposure limits may cause

irritation of the eyes.

Inhalation Exposure to airborne concentrations above statutory or recommended exposure limits may cause

irritation of the nose, throat and lungs.

Skin contactNo known significant effects or critical hazards.IngestionNo known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Page: 7/10

Eye contact Adverse symptoms may include the following:

irritation redness

Inhalation Adverse symptoms may include the following:

respiratory tract irritation

coughing

Skin contact No specific data. Ingestion No specific data.

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

Short term exposure

Potential immediate effects Not available. Potential delayed effects Not available.

Long term exposure

Not available. Potential immediate effects Potential delayed effects 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)
HyClone™ prime expression medium (chemically defined)	86611.3	186982.3	N/A	N/A	N/A
Glucose	25800	N/A	N/A	N/A	N/A
L-serine	14000	N/A	N/A	N/A	N/A
I-Leucine	16000	N/A	N/A	N/A	N/A
L-valine	2000	N/A	N/A	N/A	N/A
I-Arginine	12000	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

10000 mg/l [96 hours]

Conclusion/Summary

[Product]

Not available.

Ingredient name Conclusion/Summary L-serine Naturally occurring substance I-Leucine Naturally occurring substance L-valine Naturally occurring substance

Persistence and degradability

Product/ingredient name Result



Page: 8/10

L-valine 82% [28 days]

Conclusion/Summary

[Product]

Not available.

Ingredient name

L-serine I-Leucine L-valine

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	Aquatic half-life	Photolysis	Biodegradability
Glucose	-	-	Readily
L-valine	-	-	Readily
I-Arginine	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Glucose	-3.24	-	Low
L-serine	-3.07	0.609	Low
I-Leucine	-1.52	0.849	Low
L-valine	-2.26	0.846	Low
I-Arginine	-4.2	-	Low
I-Glutamic acid	<-4	-	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. 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

	TDG Classification	DOT Classification	ADR/RID	IMDG	IATA
UN number	Not available.	Not available.	Not available.	Not available.	Not available.
UN proper shipping name	Not available.	Not available.	Not available.	Not available.	Not available.
Transport hazard class(es)	Not available.	Not available.	Not available.	Not available.	Not available.
Packing group	-	-	-	-	-
Environmental hazards	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.

Article Number 31141431



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.

Section 16. Other information

History

Date of printing 9/10/2025 9/10/2025 Date of issue/Date of revision Date of previous issue 7/18/2024 Version 0.02

sds author@cytiva.com

ATE = Acute Toxicity Estimate Key to abbreviations

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 Justification

Not classified

References Not available



Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.