



SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Commission Regulation (EU) 2020/878

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

1.1 Product identifier

| | |
|-------------------------------|---|
| Product name | HyClone™ peak expression medium (chemically defined) |
| Catalogue Number | SH31192 |
| Product description | Not available. |
| Product type | Powder. |
| Other means of identification | Not available. |

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

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

1.3 Details of the supplier of the safety data sheet

| | |
|---|----------------------------|
| Supplier | Hours of operation |
| Cytiva Austria Kremslstr. 5 4061 Pasching AUSTRIA Phone: +43 7229 64865 | Mo. - Fr. 08.30 - 17.00 |
| HyClone Laboratories 925 West 1800 South Logan, Utah 84321 Phone: (435) 792-8000 | |
| Cytiva Singapore 1 Maritime Square #13-01 Harbourfront Centre Singapore 099253 | |

Person who prepared the SDS: sds_author@cytiva.com

| | |
|--------------------|---|
| Switzerland | Cytiva Austria Kremslstr. 5 4061 Pasching AUSTRIA Phone: +43 7229 64865 |
|--------------------|---|

1.4 Emergency telephone number

Call INFOTRAC 24 Hour number:
001-352-323-3500 (Call Collect).

National advisory body/Poison Centre

| | |
|--------------------|---|
| Switzerland | Vergiftungsnotruf Tel: 145 |
| | Aus dem Ausland oder bei technischen Problemen: +41 44 251 51 51 |
| | https://www.toxinfo.ch/notruf-145 |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition Mixture

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

Not classified.

The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown toxicity 44.2 percent of the mixture consists of component(s) of unknown acute oral toxicity
87.1 percent of the mixture consists of component(s) of unknown acute dermal toxicity
94.4 percent of the mixture consists of component(s) of unknown acute inhalation toxicity

Ingredients of unknown ecotoxicity Contains 69.7% of components with unknown hazards to the aquatic environment

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms

Signal word No signal word.

Hazard statements No known significant effects or critical hazards.

Precautionary statements

General Not applicable.

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

Supplemental label elements Safety data sheet available on request.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings Not applicable.

Tactile warning of danger Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Product meets the criteria for endocrine disrupting properties according to Regulation (EC) No. 1907/2006.

Other hazards which do not result in classification May form combustible dust concentrations in air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Mixture

| Product/ingredient name | Identifiers | % | Classification Regulation (EC) No. 1272/2008 [CLP] | Type |
|-------------------------|-------------------------------|------|--|------|
| L-serine | EC: 200-274-3 CAS: 56-45-1 | <2.8 | Aquatic Chronic 3, H412 - | [1] |
| L-valine | EC: 200-773-6 CAS: 72-18-4 | <1.5 | Acute Tox. 4, H302 ATE [Oral] = 2000 mg/kg See Section 16 for the full text of the H statements declared above. | [1] |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a physical, health or environmental hazard

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

SECTION 4: First aid measures

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

4.2 Most important symptoms and effects, both acute and delayed

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 contact | No specific data. |
| Ingestion | No specific data. |

4.3 Indication of any immediate medical attention and special treatment needed

| | |
|----------------------------|---|
| 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. |

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Use dry chemical powder.

Unsuitable extinguishing media Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture May form explosible dust-air mixture if dispersed.

| | |
|---|---|
| Hazardous combustion products | Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides phosphorus oxides halogenated compounds metal oxide/oxides |
| 5.3 Advice for firefighters | |
| Special precautions 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |

SECTION 6: Accidental release measures

6.1 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 flames, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment. |
| For emergency responders | If specialised 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". |
| 6.2 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). |

6.3 Methods and material 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, labelled 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 the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. |

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 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 earthing 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. |

7.2 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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

| | |
|------------------------|----------------|
| Recommendations | Not available. |
|------------------------|----------------|

Industrial sector specific solutions Not available.

SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario (s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures

Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Not available.

PNECs

Not available.

8.2 Exposure controls

Appropriate engineering controls

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour 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, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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.

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.

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.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

Appearance

| | |
|---|------------------|
| Physical state | Solid. [Powder.] |
| Colour | Not available. |
| Odour | Not available. |
| Odour threshold | Not available. |
| Melting point/freezing point | Not available. |
| Boiling point or initial boiling point and boiling range | Not available. |
| Flammability | Not available. |
| Lower and upper explosion limit | Not applicable. |

| | |
|--|-----------------|
| Flash point | Not applicable. |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | Not available. |
| pH | Not available. |
| Viscosity | Not applicable. |
| Solubility in water | Not available. |
| Partition coefficient: n-octanol/ water | Not applicable. |
| Vapour pressure | Not available. |
| Relative density | Not available. |
| Relative vapour density | Not applicable. |

Particle characteristics

| | |
|-----------------------------|----------------|
| Median particle size | Not available. |
|-----------------------------|----------------|

9.2 Other information

9.2.1 Information with regard to physical hazard classes

| | |
|-----------------------------|----------------|
| Burning time | Not available. |
| Burning rate | Not available. |
| Explosive properties | Not available. |
| Oxidising properties | Not available. |

9.2.2 Other safety characteristics

| | |
|-------------------------|-----------------|
| Evaporation rate | Not available. |
| | Not applicable. |

SECTION 10: Stability and reactivity

| | |
|--|--|
| 10.1 Reactivity | No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability | The product is stable. |
| 10.3 Possibility of hazardous reactions | Under normal conditions of storage and use, hazardous reactions will not occur. |
| 10.4 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 earthing and bonding containers and equipment before transferring material. Prevent dust accumulation. |
| 10.5 Incompatible materials | Reactive or incompatible with the following materials: oxidising materials |
| 10.6 Hazardous decomposition products | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Not available.

Conclusion/Summary [Product] Not available.

Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|--|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| HyClone™ peak expression medium (ADCF) | 89324.7 | 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 |

Skin corrosion/irritation

Not available.

Conclusion/Summary [Product] Not available.

Serious eye damage/eye irritation

Not available.

Conclusion/Summary [Product] Not available.

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.

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 likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects**Inhalation**

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.

Ingestion

No known significant effects or critical hazards.

Skin contact

No known significant effects or critical hazards.

Eye contact

Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.

Symptoms related to the physical, chemical and toxicological characteristics**Inhalation**Adverse symptoms may include the following:
respiratory tract irritation
coughing**Ingestion**

No specific data.

Skin contact

No specific data.

Eye contactAdverse symptoms may include the following:
irritation
redness**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Short term exposure****Potential immediate effects** Not available.**Potential delayed effects** Not available.**Long term exposure****Potential immediate effects** Not available.**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**11.2 Information on other hazards****11.2.1 Endocrine disrupting properties**

Not available.

Conclusion/Summary [Product] Not available.**11.2.2 Other information**

Not available.

SECTION 12: Ecological information**12.1 Toxicity**

Not available.

Conclusion/Summary [Product] Not available.**12.2 Persistence and degradability**

Not available.

Conclusion/Summary [Product] Not available.

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|-------|-----------|
| L-serine | -3.07 | 0.609 | Low |
| L-valine | -2.26 | 0.846 | Low |

12.4 Mobility in soil**Soil/water partition coefficient**

Not available.

Results of PMT and vPvM assessment**Mobility** Not available.**Conclusion/Summary** Not available.**12.5 Results of PBT and vPvB assessment****Regulation (EC) No. 1907/2006 [REACH]****Regulation (EC) No. 1272/2008 [CLP]****Conclusion/Summary** Not available.**Regulation (EC) No. 1272/2008 [CLP]****12.6 Endocrine disrupting properties**

Not applicable.

Conclusion/Summary [Product] Not available.**12.7 Other adverse effects**

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product****Methods of disposal****Hazardous waste**

Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging**Methods of disposal**

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

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 spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|--|----------------|----------------|----------------|----------------|
| 14.1 UN number | Not available. | Not available. | Not available. | Not available. |
| 14.2 UN proper shipping name | Not available. | Not available. | Not available. | Not available. |
| 14.3 Transport hazard class(es) | Not available. | Not available. | Not available. | Not available. |
| 14.4 Packing group | - | - | - | - |
| 14.5 Environmental hazards | No. | No. | No. | No. |
| | | | | |

| | | | | |
|-------------------------------|---|---|---|---|
| Additional information | - | - | - | - |
|-------------------------------|---|---|---|---|

14.6 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.

14.7 Transport in bulk according to IMO instruments Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

| Product/ingredient name | % | Designation [Usage] |
|-----------------------------|-------|---------------------|
| hexaammonium heptamolybdate | ≤0.1 | 65 |
| cadmium chloride | ≤0.02 | 23 |

Labelling Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air Not listed

Industrial emissions (integrated pollution prevention and control) - Water Not listed

Explosive precursors

Ozone depleting substances (EU 2024/590)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

VOC content Exempt.

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

| | |
|-------------------------|--|
| United States | Not determined. |
| Canada inventory | Not determined. |
| China | Not determined. |
| Japan | Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined. |

15.2 Chemical safety assessment This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

 Indicates information that has changed from previously issued version.

| | |
|-----------------------------------|---|
| Abbreviations and acronyms | ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration RRN = REACH Registration Number vPvB = Very Persistent and Very Bioaccumulative |
|-----------------------------------|---|

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | | Justification |
|---|---|--|
| Not classified. | | |
| Full text of abbreviated H statements | H302 Harmful if swallowed. H412 Harmful to aquatic life with long lasting effects. | |
| Full text of classifications [CLP/GHS] | Acute Tox. 4 Aquatic Chronic 3 | ACUTE TOXICITY - Category 4 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 |
| Date of printing | 11 September 2025 | |
| Date of issue/ Date of revision | 11 September 2025 | |
| Date of previous issue | 23 April 2024 | |
| Version | 3 | |

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.