



# Safety Data Sheet

Canada

## Section 1. Identification

Product name

**LSL 4010 Agarose, 25 kg**

Catalogue Number

**94010-2**



9 0 9 4 0 1 0 2

Chemical name

Agarose

Synonym

Agarose gel beads; Sepharose; (2S,3R,4S,5R,6R)-2-[[[(1S,3S,4S,5S,8R)-3-[(2S,3R,4S,5S,6R)-2-[(1S,3R,4S,5S,8R)-3,4-dihydroxy-2,6-dioxabicyclo[3.2.1]octan-8-yl]oxy]-3,5-dihydroxy-6-(hydroxymethyl)oxan-4-yl]oxy-4-hydroxy-2,6-dioxabicyclo[3.2.1]octan-8-yl]oxy]-6-(hydroxymethyl)oxane-3,4,5-triol

Product type

Powder.

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

For further manufacturing.  
Liquid chromatography.  
Manufacture of chemical products.  
Scientific research and development

Consumer use

-

**Supplier** Cytiva  
Amersham Place  
Little Chalfont  
Buckinghamshire  
HP7 9NA United Kingdom  
+44 1494 508000

**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** COMBUSTIBLE DUSTS - Category 1

### GHS label elements

**Signal word**

Warning

**Hazard statements**

May form combustible dust concentrations in air.

### Precautionary statements

**Prevention**

Not applicable.

**Response**

Not applicable.

**Storage**

Not applicable.

**Disposal**

Not applicable.

**Supplemental label elements**

Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.



9 5 2 9 9 6 7 6 3 7

Section 3. Composition/information on ingredients

|                               |  |
|-------------------------------|--|
| Substance/mixture             | Substance  |
| Chemical name                 | Agarose  |
| Other means of identification | Agarose gel beads; Sepharose; (2S,3R,4S,5R,6R)-2-[[[(1S,3S,4S,5S,8R)-3-[(2S,3R,4S,5S,6R)-2-[(1S,3R,4S,5S,8R)-3,4-dihydroxy-2,6-dioxabicyclo[3.2.1]octan-8-yl]oxy]-3,5-dihydroxy-6-(hydroxymethyl)oxan-4-yl]oxy-4-hydroxy-2,6-dioxabicyclo[3.2.1]octan-8-yl]oxy]-6-(hydroxymethyl)oxane-3,4,5-triol |

| Ingredient name | Synonyms   | % (w/w) | CAS number     |
|-----------------|--|---------|----------------|
| Sepharose       | Agarose gel beads; Sepharose; (2S,3R,4S,5R,6R)-2-[[[(1S,3S,4S,5S,8R)-3-[(2S,3R,4S,5S,6R)-2-[[[(1S,3R,4S,5S,8R)-3,4-dihydroxy-2,6-dioxabicyclo[3.2.1]octan-8-yl]oxy]-3,5-dihydroxy-6-(hydroxymethyl)oxan-4-yl]oxy-4-hydroxy-2,6-dioxabicyclo[3.2.1]octan-8-yl]oxy]-6-(hydroxymethyl)oxane-3,4,5-triol | 100     | CAS: 9012-36-6 |

There are no additional 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.  |
| 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. |

Most important symptoms/effects, acute and delayed

Potential acute health effects

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

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

|                            |   |
|----------------------------|---|
| Notes to physician         | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| 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)



Section 5. Fire-fighting measures

**Extinguishing media**

|   |  |
|---|--|
| <b>Suitable extinguishing media</b>                   | Use dry chemical powder.   |
| <b>Unsuitable extinguishing media</b>                 | Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.  |
| <b>Specific hazards arising from the chemical</b>     | May form explosible dust-air mixture if dispersed.   |
| <b>Hazardous thermal decomposition products</b>       | No specific data.  |
| <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 flares, 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).   |

**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 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: 4 to 30°C (39.2 to 86°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.

|   |  |
|---|--|
| <b>Appropriate engineering controls</b> | 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. |
| <b>Environmental exposure controls</b>  | 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**

|                               |  |
|-------------------------------|--|
| <b>Hygiene measures</b>       | 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.  |
| <b>Eye/face protection</b>    | 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. Recommended: safety glasses with side-shields.  |
| <b>Skin protection</b>        |  |
| <b>Hand protection</b>        | 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. > 8 hours (breakthrough time): nitrile rubber |
| <b>Body protection</b>        | 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. Recommended: No special recommendations.   |
| <b>Other skin protection</b>  | 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. Recommended: No special recommendations.   |
| <b>Respiratory protection</b> | 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. Recommended: Wear appropriate respiratory protection.   |

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**

|                                     |                           |
|-------------------------------------|---------------------------|
| <b>Physical state</b>               | Solid. [Powder.]          |
| <b>Color</b>                        | White.                    |
| <b>Odor</b>                         | Odorless.                 |
| <b>Odor threshold</b>               | Not available.            |
| <b>pH</b>                           | Not applicable.           |
| <b>Melting point/freezing point</b> | 60 to 90°C (140 to 194°F) |



|   |  |                   |
|---|--|-------------------|
| <b>Boiling point or initial boiling point and boiling range</b> | Decomposes   |                   |
| <b>Flash point</b>  | [Product does not sustain combustion.]   |                   |
| <b>Burning time</b>   | Not available.   |                   |
| <b>Burning rate</b>   | Not available.   |                   |
| <b>Evaporation rate</b>   | Not available.   |                   |
| <b>Flammability</b>   | Not available.   |                   |
| <b>Lower and upper explosive (flammable) limits</b>             | Not applicable.  |                   |
| <b>Vapor pressure</b>   | Not available.   |                   |
| <b>Relative vapor density</b>                                   | Not applicable.  |                   |
| <b>Relative density</b>   | Not available.   |                   |
| <b>Density</b>  | 1.49 g/cm <sup>3</sup>   |                   |
| <b>Solubility(ies)</b>  |  |                   |
|   | <b>Media</b>   | <b>Result</b>     |
|   | cold water   | Partially soluble |
|   | hot water  | Soluble           |
| <b>Solubility in water</b>                                      | Not available.   |                   |
| <b>Partition coefficient: n-octanol/ water</b>                  | Not available.   |                   |
| <b>Auto-ignition temperature</b>                                | Not applicable.  |                   |
| <b>Decomposition temperature</b>                                | Not available.   |                   |
| <b>SADT</b>   | Not available.   |                   |
| <b>Viscosity</b>  | Dynamic (room temperature): Not available.<br>Kinematic (room temperature): Not available.<br>Kinematic (40°C (104°F)): Not available. |                   |
| <b>Flow time (ISO 2431)</b>                                     | Not available.   |                   |
| <b><u>Particle characteristics</u></b>                          |  |                   |
| <b>Median particle size</b>                                     | Not available.   |                   |

## Section 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.   |
| <b>Chemical stability</b>                 | The product is stable.   |
| <b>Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.  |
| <b>Conditions to avoid</b>                | Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame).<br>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. |
| <b>Incompatible materials</b>             | Reactive or incompatible with the following materials:<br>oxidizing materials  |
| <b>Hazardous decomposition products</b>   | 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.

|                                     |                |
|-------------------------------------|----------------|
| <b>Conclusion/Summary [Product]</b> | Not available. |
|-------------------------------------|----------------|

#### Skin corrosion/irritation

Not available.

|                                     |                |
|-------------------------------------|----------------|
| <b>Conclusion/Summary [Product]</b> | 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 the likely routes  
of exposure** Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

**Potential acute health effects**

**Eye contact** 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:<br>irritation<br>redness                    |
| <b>Inhalation</b>   | Adverse symptoms may include the following:<br>respiratory tract irritation<br>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.

|                                     |  |
|-------------------------------------|--|
| <b>Conclusion/Summary [Product]</b> | Not available.   |
| <b>General</b>                      | Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. |
| <b>Carcinogenicity</b>              | No known significant effects or critical hazards.                                    |
| <b>Mutagenicity</b>                 | No known significant effects or critical hazards.                                    |
| <b>Reproductive toxicity</b>        | No known significant effects or critical hazards.                                    |

**Numerical measures of toxicity****Acute toxicity estimates**

N/A

**Section 12. Ecological information****Toxicity**

Not available.

|                                     |                |
|-------------------------------------|----------------|
| <b>Conclusion/Summary [Product]</b> | Not available. |
|-------------------------------------|----------------|

**Persistence and degradability**

Not available.

|                                     |                |
|-------------------------------------|----------------|
| <b>Conclusion/Summary [Product]</b> | Not available. |
|-------------------------------------|----------------|

**Bioaccumulative potential**

Not available.

**Mobility in soil**

|   |                |
|---|----------------|
| <b>Soil/Water partition coefficient</b> | 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.            |
| <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 IMO instruments

Not available.

## Section 15. Regulatory information

### Canadian lists

**Canadian NPRI** This material is not listed.

**CEPA Toxic substances** This material is not 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** This material is listed or exempted.





**United States**

This material is active or exempted.

**Section 16. Other information****History**

**Date of printing** 9/10/2025  
**Date of issue/Date of revision** 9/10/2025  
**Date of previous issue** 10/20/2022  
**Version** 2

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**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                 | Justification   |
|--------------------------------|-----------------|
| COMBUSTIBLE DUSTS - Category 1 | Regulatory data |

**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.

