

SAFETY DATA SHEET

Republic of Korea

(In accordance with Article 10 Paragraph 1, Industrial Safety and Health Act)

Section 1. Chemical product and company identification

A. **Product name** HyClone™ G418 Sulfate Solution, 50 mg/mL
Catalogue Number SV30069

Article Number SV30069

B. **Recommended use of the chemical**

Not applicable.

Restrictions on use

None identified.

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

GE Healthcare Bio-Sciences Austria GmbH.
Kremslstr. 5
4061 Pasching
AUSTRIA
Phone: +43 7229 64865
Fax (+43) 7229 64866

Emergency telephone number 82-2-6201-3800
(with hours of operation) (9.00 am - 6.00 pm)

Section 2. Hazards identification

A. **Hazard classification** RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 5%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5%

B. **GHS label elements, including precautionary statements**

Symbol



Signal word Danger

Hazard statements May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Precautionary statements

Prevention Wear protective gloves. In case of inadequate ventilation wear respiratory protection. Avoid breathing vapor. Contaminated work clothing should not be allowed out of the workplace.

Response IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage Not applicable.

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

C. **Other hazards which do not result in classification** None known.



Section 3. Composition/information on ingredients

Substance/mixture	Mixture
Other means of identification	Not available.
<u>CAS number/other identifiers</u>	
CAS number	Not applicable.
EC number	Mixture.
Product code	SV30069

Ingredient name	Synonym	CAS number	%
D-Streptamine, O-2-amino-2,7-dideoxy-D-glycero- α -D-glucopyranosyl-(1.fwdarw.4)-O-[3-deoxy-4-C-methyl-3-(methylamino)- β -L-arabinopyranosyl-(1.fwdarw.6)]-2-deoxy-, sulfate (1:2) (salt)	G418 disulfate	108321-42-2	5

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 and hence require reporting in this section.

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

Section 4. First aid measures

A. Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
B. Skin contact	Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
C. Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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. In the event of any complaints or symptoms, avoid further exposure.
D. Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
E. Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

A. <u>Extinguishing media</u>	
Suitable	Use an extinguishing agent suitable for the surrounding fire.
Not suitable	None known.
B. Specific hazards arising from the chemical	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides
C. 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.
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.



Section 6. Accidental release measures

- A. Personal precautions, protective equipment and emergency procedures** 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- B. 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).
- C. Methods and materials for containment and cleaning up**
- Small spill** Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- A. Precautions for safe handling**
- Protective measures** 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.
- 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.
- B. Conditions for safe storage, including any incompatibilities** Store between the following temperatures: 15 to 25°C (59 to 77°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

- A. Control parameters**
- Occupational exposure limits**
- None.
- B. 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.
- 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.
- C. Personal protective equipment**
- Respiratory protection** Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Eye 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.
- 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.
- Skin 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.
- 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.



Section 9. Physical and chemical properties

A. Appearance

Physical state	Liquid.
Color	Clear. Colorless.
B. Odor	Not available.
C. Odor threshold	Not available.
D. pH	7 to 8
E. Melting/freezing point	Not available.
F. Boiling point/boiling range	Not available.
G. Flash point	[Product does not sustain combustion.]
Burning time	Not applicable.
Burning rate	Not applicable.
H. Evaporation rate	Not available.
I. Flammability (solid, gas)	Not available.
J. Lower and upper explosive (flammable) limits	Not available.
K. Vapor pressure	Not available.
L. Solubility	Not available.
Solubility in water	Not available.
M. Vapor density	Not available.
N. Relative density	Not available.
O. Partition coefficient: n-octanol/water	Not available.
P. Auto-ignition temperature	Not available.
Q. Decomposition temperature	Not available.
SADT	Not available.
R. Viscosity	Not available.
S. Molecular weight	Not applicable.

Section 10. Stability and reactivity

A. Chemical stability	The product is stable.
Possibility of hazardous reactions	Hazardous reactions or instability may occur under certain conditions of storage or use.
B. Conditions to avoid	No specific data.
C. Incompatible materials	No specific data.
D. Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

A. Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Respiratory	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Oral	No known significant effects or critical hazards.
Skin	May cause an allergic skin reaction.
Eyes	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation	Adverse symptoms may include the following: wheezing and breathing difficulties asthma
Ingestion	No specific data.
Skin contact	Adverse symptoms may include the following: irritation redness



Eye contact

No specific data.

B. Health hazards**Acute toxicity**

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Potential chronic health effects**Chronic toxicity**

Not available.

General

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity

No known significant effects or critical hazards.

Mutagenicity

No known significant effects or critical hazards.

Teratogenicity

No known significant effects or critical hazards.

Developmental effects

No known significant effects or critical hazards.

Fertility effects

No known significant effects or critical hazards.

ATE value

Not available.

Section 12. Ecological information**A. Aquatic and terrestrial toxicity**

Not available.

B. Persistence/degradability

Not available.

C. Bioaccumulative potential

Not available.

D. Mobility in soil**Soil/water partition coefficient (K_{oc})** Not available.**E. Other adverse effects**

No known significant effects or critical hazards.



Section 13. Disposal considerations

- A. 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.
- B. Disposal precautions** 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

UN

- A. UN number** Not regulated.
- B. Proper shipping name** -
- C. Classes** -
- D. Packing group** -
- E. Marine pollutant** No.
- F. Additional information** -
- Label

IMDG

- A. UN number** Not regulated.
- B. Proper shipping name** -
- C. Classes** -
- D. Packing group** -
- E. Marine pollutant** No.
- F. Additional information** -
- Label

IATA

- A. UN number** Not regulated.
- B. Proper shipping name** -
- C. Classes** -
- D. Packing group** -
- E. Marine pollutant** No.
- F. Additional information** -
- Label

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.

Section 15. Regulatory information

A. Regulation according to ISHA

- ISHA Article 37 None of the components are listed.
- ISHA Article 38 None of the components are listed.

B. Regulation according to TCCA

- TCCA Toxic chemicals Not applicable
- TCCA Observational chemicals None of the components are listed.
- TCCA Article 32 (Banned) None of the components are listed.
- TCCA Article 32 (Restricted) None of the components are listed.
- TCCA Article 17 (TRI) None of the components are listed.
- Korea inventory Not determined.

- C. Dangerous Materials Control Act** Not available.

- D. Wastes regulation** Dispose of contents and container in accordance with all local, regional, national and international regulations.



E. Regulation according to other foreign laws

Europe inventory Not determined.

United States inventory (TSCA 8b) Not determined.

Japan inventory Not determined.

Safety, health and environmental regulations specific for the product No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information**A. References** Not available.**B. Date of issue/Date of revision** 26 May 2015**C. Version** 1.02**Date of printing** 26 May 2015

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D. Other Indicates information that has changed from previously issued version.

Key to abbreviations

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.

