

SAFETY DATA SHEET

China

Safety Data Sheet according to GB/T 16483-2008 and GB/T 17519-2013

Section 1. Identification

GHS product identifier

HBSS, without Sodium Bicarbonate, 1X10L

缓冲溶液粉末

Catalogue Number SH30015.03

Other means of identification Not available.

Product type Solid.

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

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

Supplier's details

Supplier/Manufacturer

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Cytiva Singapore 1 Maritime Square #13-01 Harbourfront Centre Singapore 099253 HyClone Laboratories 925 West 1800 South Logan, Utah 84321 Phone: (435) 792-8000

24 hours response advisory service hotline

0532-83889090

Section 2. Hazards identification

Classification of the substance or mixture according to GB 13690-2009 and GB 30000-2013

Emergency overview

Solid.

May be harmful if swallowed or in contact with skin.

Harmful to aquatic life.

Harmful to aquatic life with long lasting effects.

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell.

See Section 12 for environmental precautions.

Classification of the substance

or mixture

ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (dermal) - Category 5 AQUATIC HAZARD (ACUTE) - Category 3 AQUATIC HAZARD (LONG-TERM) - Category 3

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GHS label elements

Signal word Warning

Hazard statements May be harmful if swallowed or in contact with skin.

Harmful to aquatic life.

Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention Avoid release to the environment.

Response IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN: Call a

POISON CENTER or doctor if you feel unwell.

Storage Not applicable.

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

regulations.

Physical and chemical hazards No known significant effects or critical hazards.

Health hazards May be harmful if swallowed or in contact with skin.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contactNo specific data.InhalationNo specific data.Skin contactNo specific data.IngestionNo 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

Potential immediate effects Not available.

Potential delayed effects Not available.

Environmental hazards Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

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.

 Ingredient name
 %
 Identifiers

 potassium chloride
 <4.55</td>
 7447-40-7

 calcium chloride
 <1.6</td>
 10043-52-4

 magnesium sulphate
 <1.15</td>
 7487-88-9

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

First aid

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.

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Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 adverse health effects persist or are severe. 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.

Skin contact Flush contaminated skin with plenty of 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 if adverse health effects persist or are severe. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly

before reuse.

Wash out mouth with water. Remove dentures if any. If material has been swallowed and the Ingestion

> 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. If necessary, call a poison center or physician. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact No known significant effects or critical hazards. Inhalation No known significant effects or critical hazards.

Skin contact May be harmful in contact with skin. Ingestion May be harmful if swallowed.

Over-exposure signs/symptoms

Eye contact No specific data. Inhalation No specific data. 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. 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

Extinguishing media

Suitable extinguishing media Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media None known.

Specific hazards arising from the

chemical

This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products Decomposition products may include the following materials:

carbon dioxide carbon monoxide sulfur oxides

halogenated compounds metal oxide/oxides

fighters

Special protective actions for fire- 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.

fire-fighters

Special protective equipment for 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. Provide adequate ventilation. Wear appropriate respirator when

ventilation is inadequate. 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".

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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). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill

Move containers from spill area. 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. 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. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Precautionary measures to prevent the occurrence of secondary disasters

Section 7. Handling and storage

Precautions for safe handling

Precautions for operating

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

Store between the following temperatures: 2 to 8°C (35.6 to 46.4°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. 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

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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.

Personal protective equipment

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.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

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Thermal hazards Not available.

Section 9. Physical and chemical properties

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

Appearance and physical state

Physical state Solid.
Color Not available.
Odor Not available.
Odor threshold Not available.
PH Not available.
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 (solid, gas) Not available.

Lower and upper explosive Not applicable.

(flammable) limits

Vapor pressure

Relative vapor density
Relative density
Not applicable.

Not available.

Not available.

Not available.

Not available.

Not available.

Not available.

Not applicable.

water

Auto-ignition temperature
Decomposition temperature
SADT
Viscosity
Not available.
Not available.
Not applicable.
Not available.
Not applicable.
Not available.
Not available.

Particle characteristics

Median particle size Not available.

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 No specific data.

Incompatible materials No specific data.

Hazardous decomposition

products

Under normal conditions of storage and use, hazardous decomposition products should not be

produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Conclusion/Summary

[Product]

Not available.

Skin corrosion/irritation

Not available.

Conclusion/Summary

[Product]

Not available.

Serious eye damage/eye irritation

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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 contactNo known significant effects or critical hazards.InhalationNo known significant effects or critical hazards.

Skin contact May be harmful in contact with skin.

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Ingestion May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contactNo specific data.InhalationNo specific data.Skin contactNo specific data.IngestionNo 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

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

Not available.

GeneralNo known significant effects or critical hazards.CarcinogenicityNo known significant effects or critical hazards.MutagenicityNo known significant effects or critical hazards.Reproductive toxicityNo 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/ I)
HBSS, without Sodium Bicarbonate potassium chloride	3534.2	2360.9	N/A	23.6	N/A
	2600	N/A	N/A	N/A	N/A
calcium chloride	1000	N/A	N/A	N/A	N/A
magnesium sulphate	500	1100	N/A	11	N/A

Section 12. Ecological information

Toxicity

Not available.

Conclusion/Summary

[Product]

Not available.

Persistence/degradability

Not available.

Conclusion/Summary

[Product]

Not available.

Bioaccumulation/Accumulation

Not available.

Mobility in soil

Soil/Water partition coefficient Not available

Other adverse effects No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues.

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Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	GB12268	JT/T617	IMDG	IATA
UN number	Not available.		Not available.	Not available.
UN proper shipping name	Not available.		Not available.	Not available.
Transport hazard class(es)	Not available.		Not available.	Not available.
Packing group	_		_	_
racking group	-		-	-
Environmental hazards	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

Extinguishing media

Suitable extinguishing media Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing

media

None known.

Incompatible materials No specific data. Transport in bulk according to Not available.

IMO instruments

Section 15. Regulatory information

List of Goods banned for Importing

None of the components are listed.

Drug Precursors Requiring an Import/Export License

None of the components are listed.

Inventory of Hazardous Chemicals

None of the components are listed.

List of Explosive Precursors

None of the components are listed.

List of Goods banned for Exporting

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Catalogue and classification of drug precursor chemicals

None of the components are listed.

Inventory of Highly Toxic Articles

None of the components are listed.

Catalogue of Hazardous Chemicals of Priority Management

None of the components are listed.

Catalogue of Occupational Disease Hazard Factors - Dust

None of the components are listed.

Catalogue of Occupational Disease Hazard Factors - Chemical Factors

None of the components are listed.

International regulations

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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

China All components are listed or exempted.

United States All components are active or exempted.

Canada inventory All components are listed or exempted.

Japan inventory (CSCL): Not determined.

Japan inventory (ISHL): Not determined.

Section 16. Other information

History

Date of printing10 September 2025.Date of issue/Date of revision10 September 2025.Date of previous issue25 April 2024.

Version 0.04

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Key to abbreviations ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

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

ACUTE TOXICITY (oral) - Category 5

ACUTE TOXICITY (dermal) - Category 5

AQUATIC HAZARD (ACUTE) - Category 3

AQUATIC HAZARD (LONG-TERM) - Category 3

Calculation method

Calculation method

References Not available.

Indicates information that has changed from previously issued version.

Notice to reader

exist.

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

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