

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

SECTION 1: PRODUCT IDENTIFIER & IDENTIFIER FOR THE CHEMICAL

1.1. Product Identifier

Product Form: Mixture

Product Name: CryoStor® CSB

Synonyms: CSB

1.2. Intended Use of the Product

Low temperature storage of biological material.

1.3. Name, Address, and Telephone of the Responsible Party

Company: BioLife Solutions, Inc.

Local Distributor

PO BOX 648

Tullamarine, Victoria, Australia

3043

1-800-060-350

www.biolifesolutions.com

1.4. Emergency Telephone Number

Emergency Number: 425-402-1400

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-AU Classification

Not classified

2.2. Label Elements

GHS-AU Labeling

No labeling applicable

2.3. Non-GHS Hazards

Not available

2.4. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Mixture

Name	Product Identifier	% *	GHS Ingredient Classification
Sucrose	(CAS-No.) 57-50-1	1	Not classified
Sodium hydroxide**	(CAS-No.) 1310-73-2	0.6	Met. Corr. 1, H290 Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318 Aquatic Acute 3, H402
Potassium hydroxide**	(CAS-No.) 1310-58-3	0.168	Met. Corr. 1, H290 Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 1, H370

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%)

** Components are added to adjust pH, are neutralized, and do not contribute to the overall hazard classification.

Full text of H-statements: see section 16

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

SECTION 4: FIRST AID MEASURES**4.1. Description of First-aid Measures**

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Personal Protection in First Aid and Measures: Use appropriate personal protective equipment (PPE)

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: Prolonged exposure may cause irritation.

Skin Contact: Prolonged exposure may cause skin irritation.

Eye Contact: May cause slight irritation to eyes.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None known.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES**5.1. Extinguishing Media**

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising from the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions. Hazardous reactions may occur on contact with certain chemicals. Refer to incompatible materials.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. Remove containers from fire area if this can be done without risk. Do not breathe fumes from fires or vapors from decomposition.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Irritating or toxic vapors. Carbon oxides (CO, CO₂). Nitrogen oxides. Sodium oxides. Hydrogen chloride. Potassium oxides. Phosphorous oxide. Calcium oxides. Magnesium oxides.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1. Personal Precautions, Protective Equipment and Emergency Procedures**

General Measures: Avoid breathing (vapor, mist, spray). Avoid all contact with skin, eyes, or clothing.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Do not take up in combustible material such as: saw dust or cellulosic material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for Safe Handling**

Additional Hazards When Processed: Contains substances that are combustible dusts. If dried and allowed to accumulate, may form combustible dust concentrations in air that could ignite and cause an explosion. Take appropriate precautions.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapors, mist, and spray. Use appropriate personal protective equipment (PPE).

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container tightly closed. Containers which are opened should be properly resealed and kept upright to prevent leakage. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Strong reducing agents. Halogenated organic and mineral acids. Halides. Metal salts. Zinc. Steel. Some plastics. Acid chlorides. Maleic anhydride. Water reactive materials.

Storage Temperature: 2 - 8 °C

7.3. Specific End Use(s)

Low temperature storage of biological material.

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), Australia OELs.

Sucrose (57-50-1)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
Australia	TWA (mg/m ³)	10 mg/m ³ (containing no asbestos and <1% crystalline silica-inhalable dust)
Sodium hydroxide (1310-73-2)		
USA ACGIH	ACGIH Ceiling (mg/m ³)	2 mg/m ³
Potassium hydroxide (1310-58-3)		
USA ACGIH	ACGIH Ceiling (mg/m ³)	2 mg/m ³

8.2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: In laboratory, medical or industrial settings, impervious disposable gloves and protective clothing are recommended if skin contact with the product is possible.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	Liquid
Appearance	Clear/colorless to slightly yellow
Odor	Odorless
Odor Threshold	Not available
pH	7.5 - 7.7
Evaporation Rate	Not available
Melting Point	Not available
Freezing Point	Not available
Boiling Point	Not available
Flash Point	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

Flammability (solid, gas)	Not applicable
Lower Flammable Limit	Not available
Upper Flammable Limit	Not available
Vapor Pressure	Not available
Relative Vapor Density at 20°C	Not available
Relative Density	Not available
Specific Gravity	1.05
Solubility	Soluble in water
Partition Coefficient: N-Octanol/Water	Not available
Viscosity	Not available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: Hazardous reactions will not occur under normal conditions. Hazardous reactions may occur on contact with certain chemicals. Refer to incompatible materials.

10.2. Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

10.4. Conditions to Avoid: Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5. Incompatible Materials: Strong acids, strong bases, strong oxidizers. Strong reducing agents. Halogenated organic and mineral acids. Halides. Metal salts. Zinc. Steel. Some plastics. Acid chlorides. Maleic anhydride. Water reactive 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 - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified. **pH:** 7.5 - 7.7

Eye Damage/Irritation: Not classified. **pH:** 7.5 - 7.7

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None known.

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Sucrose (57-50-1)	
LD50 Oral Rat	29700 mg/kg
Sodium hydroxide (1310-73-2)	
LD50 Oral Rat	140 - 340 mg/kg
Potassium hydroxide (1310-58-3)	
LD50 Oral Rat	284 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Acute Aquatic Toxicity: Not classified

Chronic Aquatic Toxicity: Not classified

Ecology - General: Not classified.

Sodium hydroxide (1310-73-2)	
LC50 Fish 1	45.4 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	40 mg/l

12.2. Persistence and Degradability

CryoStor® CSB	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

CryoStor® CSB	
Bioaccumulative Potential	Not established.
Potassium hydroxide (1310-58-3)	
Log Pow	0.65

12.4. Mobility in Soil Not available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

Ozone: Not classified

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. According to the UNRTDG Conde Not classified for transportation

14.2. HAZCHEM Emergency Action Code (Australia) Not applicable

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

SECTION 15: REGULATORY INFORMATION

15.1. National Regulations

Sucrose (57-50-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on the Canadian DSL (Domestic Substances List)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on the United States TSCA (Toxic Substances Control Act) inventory
 Listed on INSQ (Mexican National Inventory of Chemical Substances)
 Listed on Turkish inventory of chemical
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

Sodium hydroxide (1310-73-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on the Canadian DSL (Domestic Substances List)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on the United States TSCA (Toxic Substances Control Act) inventory
 Japanese Poisonous and Deleterious Substances Control Law
 Listed on the Canadian IDL (Ingredient Disclosure List)
 Listed on INSQ (Mexican National Inventory of Chemical Substances)
 Listed on Turkish inventory of chemical
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

Potassium hydroxide (1310-58-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on the Canadian DSL (Domestic Substances List)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on the United States TSCA (Toxic Substances Control Act) inventory
 Japanese Poisonous and Deleterious Substances Control Law
 Listed on the Canadian IDL (Ingredient Disclosure List)
 Listed on INSQ (Mexican National Inventory of Chemical Substances)
 Listed on Turkish inventory of chemical
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.2. International Agreements

No additional Information available.

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

15.3. Australia National Regulations

Sodium hydroxide (1310-73-2)	
Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)	Appendix E, Appendix F - Safety Statements, Appendix F - Warning Statements, Schedule 5, Schedule 6, Schedule 10
High Volume Industrial Chemicals List	Present
Potassium hydroxide (1310-58-3)	
Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)	Appendix E, Appendix F - Safety Statements, Appendix F - Warning Statements, Schedule 5, Schedule 6, Schedule 10
High Volume Industrial Chemicals List	Present

15.4. Australia Territory Regulations

No additional Information available.

SECTION 16: OTHER INFORMATION

Data Sources	Information and data obtained and used in the authoring of this safety data sheet could come from database subscriptions, official government regulatory body websites, product/ingredient manufacturer or supplier specific information, and/or resources that include substance specific data and classifications according to GHS or their subsequent adoption of GHS.
Other Information	In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition.

GHS Full Text Phrases:

Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Acute Tox. 5 (Dermal)	Acute toxicity (dermal), Category 5
Acute Tox. 5 (Oral)	Acute toxicity (oral), Category 5
Aquatic Acute 3	Hazardous to the aquatic environment — Acute Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Met. Corr. 1	Corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H303	May be harmful if swallowed
H313	May be harmful in contact with skin
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 3rd Revised Edition

Abbreviations and Acronyms

ACGIH – American Conference of Governmental Industrial Hygienists

ADG – Australian Dangerous Goods (Code)

AIHA – American Industrial Hygiene Association

ATE - Acute Toxicity Estimate

AU - Australia

BCF - Bioconcentration Factor

BEI - Biological Exposure Indices (BEI)

BOD – Biochemical Oxygen Demand

CAS No. - Chemical Abstracts Service Number

COD – Chemical Oxygen Demand

EC50 - Median Effective Concentration

ErC50 - EC50 in Terms of Reduction Growth Rate

EU - European Union

GHS – Globally Harmonized System of Classification and Labeling of Chemicals

IARC - International Agency for Research on Cancer

LC50 - Median Lethal Concentration

LD50 - Median Lethal Dose

LOAEL - Lowest Observed Adverse Effect Level

LOEC - Lowest-Observed-Effect Concentration

Log K_{oc} - Soil Organic Carbon-water Partitioning Coefficient

Log K_{ow} - Octanol/water Partition Coefficient

Log P_{ow} - Ratio of the equilibrium concentration (C) of a dissolved substance in a two-phase system consisting of two largely immiscible solvents, in this case octanol and water

NOAEL - No-Observed Adverse Effect Level

NOEC - No-Observed Effect Concentration

NTP – National Toxicology Program

OEL - Occupational Exposure Limits

pH – Potential Hydrogen

SADT - Self Accelerating Decomposition Temperature

SDS - Safety Data Sheet

STEL - Short Term Exposure Limit

ThOD – Theoretical Oxygen Demand

TLM - Median Tolerance Limit

TLV - Threshold Limit Value

TPQ - Threshold Planning Quantity

TWA - Time Weighted Average

UN – United Nations

UN RTDG – United Nations Recommendations on the Transport of Dangerous Goods

VOC – Volatile Organic Compounds

WEEL - Workplace Environmental Exposure Levels

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Australia GHS SDS