

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules  
And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

### SECTION 1: IDENTIFICATION

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** BloodStor<sup>®</sup> 27 NaCl

**Synonyms:** BS 27 NaCl

#### 1.2. Intended Use of the Product

Ultra-low temperature storage of biological material.

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

##### Company

BioLife Solutions, Inc.  
3303 Monte Villa Parkway  
Suite 310  
Bothell, WA 98021  
425-402-1400  
[www.biolifesolutions.com](http://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-US/CA Classification

Not classified

#### 2.2. Label Elements

No labeling applicable

#### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. DMSO easily penetrates the skin, and may increase the rate of skin absorption of skin-permeable substances.

#### 2.4. Unknown Acute Toxicity (GHS-US/CA)

No data available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substance

Not Applicable

#### 3.2. Mixture\*

| Name               | Product Identifier  | % * | GHS Ingredient Classification |
|--------------------|---------------------|-----|-------------------------------|
| Water              | (CAS-No.) 7732-18-5 | 69  | Not classified                |
| Dimethyl sulfoxide | (CAS-No.) 67-68-5   | 30  | Flam. Liq. 4, H227            |
| Sodium chloride    | (CAS-No.) 7647-14-5 | 1   | Not classified                |

Full text of H-phrases: see section 16

\*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%).

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### 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.

#### 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. DMSO may enhance the rate of skin absorption of skin-permeable substances.

**Inhalation:** Prolonged exposure may cause irritation.

**Skin Contact:** Prolonged exposure may cause skin irritation. DMSO may enhance the rate of skin absorption of skin-permeable substances.

**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:** Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>).

**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, CO<sub>2</sub>). Nitrogen oxides. Methylmercaptan. Dimethyl sulfide. Sulfur oxides. Sodium oxides. Hydrogen chloride. Potassium oxides. Phosphorous oxide. Calcium oxides. Magnesium oxides. Formaldehyde. Formaldehyde is a potential carcinogen and can act as a potential skin and respiratory sensitizer. Formaldehyde can also cause respiratory and eye irritation.

#### Reference to Other Sections

Refer to Section 9 for flammability properties.

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### SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapor, mist, spray).

##### 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:** Handle empty containers with care because residual vapors are flammable. DMSO increases the skin absorption of substances with it, and thereby their toxic effect may be greater than that of the substances alone. Care should be taken if working with DMSO and any other hazardous materials as they may be absorbed more readily by the skin.

**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. Take precautionary measures against static discharge. Use only non-sparking tools. 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. Store contents under inert gas.

**Storage Conditions:** Store in a dry, cool and well-ventilated place. Hygroscopic. Store in glovebox, dry box or desiccator located in exhausted environment. 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. Keep only in original container.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers. Strong reducing agents. Halogenated organic and mineral acids. Methylbromide. Sodium hydride. Halides. Metal salts of oxoacids. Metal salts. Zinc. Steel. Some plastics. Acid chlorides. Boron compounds. Water reactive materials.

**Storage Temperature:** 2 - 25°

#### 7.3. Specific End Use(s)

Ultra-low temperature, storage of biological material.

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### 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), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

| Dimethyl sulfoxide (67-68-5) |                |         |
|------------------------------|----------------|---------|
| USA AIHA                     | WEEL TWA (ppm) | 250 ppm |

#### 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.

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### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on Basic Physical and Chemical Properties

|  |                        |
|--|------------------------|
| Physical State                         | Liquid                 |
| Appearance                             | Clear/colorless liquid |
| Odor                                   | Odorless               |
| Odor Threshold                         | Not available          |
| pH                                     | 4-7                    |
| 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          |
| 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                       | 1.04                   |
| 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. Methylbromide. Sodium hydride. Halides. Metal salts of oxoacids. Metal salts. Zinc. Steel. Some plastics. Acid chlorides. Boron compounds. Water reactive materials.

**10.6. Hazardous Decomposition Products:** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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### 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.

**Eye Damage/Irritation:** Not classified.

**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. DMSO easily penetrates the skin. DMSO may enhance the rate of skin absorption of skin-permeable substances.

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

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

**Chronic Symptoms:** None known.

#### 11.2. Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

| Sodium chloride (7647-14-5)  |  |
|------------------------------|--|
| LD50 Oral Rat                | 3 g/kg                                     |
| LD50 Dermal Rabbit           | > 10000 mg/kg (Species: New Zealand White) |
| LC50 Inhalation Rat          | > 42 g/m <sup>3</sup> (Exposure time: 1 h) |
| Dimethyl sulfoxide (67-68-5) |  |
| LD50 Oral Rat                | > 20000 mg/kg                              |
| LD50 Dermal Rat              | ≈ 40000 mg/kg                              |
| LC50 Inhalation Rat          | > 5.33 mg/l/4h                             |

### SECTION 12: ECOLOGICAL INFORMATION

#### 12.1. Toxicity

**Ecology - General:** Not classified.

| Sodium chloride (7647-14-5)  |   |
|------------------------------|---|
| LC50 Fish 1                  | 5560 (5560 - 6080) mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through]) |
| EC50 Daphnia 1               | 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)                                    |
| LC50 Fish 2                  | 12946 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])                    |
| EC50 Daphnia 2               | 340.7 (340.7 - 469.2) mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])          |
| NOEC Chronic Fish            | 252 mg/l (Species: Pimephales promelas)   |
| Dimethyl sulfoxide (67-68-5) |   |
| LC50 Fish 1                  | 34 g/l (Exposure time: 96 h - Species: Pimephales promelas)                                 |
| LC50 Fish 2                  | 33 - 37 g/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])                   |

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### 12.2. Persistence and Degradability

|                               |                  |
|-------------------------------|------------------|
| <b>BS 27 NaCl</b>             |                  |
| Persistence and Degradability | Not established. |

### 12.3. Bioaccumulative Potential

|                                     |                     |
|-------------------------------------|---------------------|
| <b>BS 27 NaCl</b>                   |                     |
| Bioaccumulative Potential           | Not established.    |
| <b>Sodium chloride (7647-14-5)</b>  |                     |
| BCF Fish 1                          | no bioaccumulation) |
| <b>Dimethyl sulfoxide (67-68-5)</b> |                     |
| Log Pow                             | -2.03               |

**12.4. Mobility in Soil** Not available

### 12.5. Other Adverse Effects

**Other Information:** Avoid release to the environment.

## 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.

**Additional Information:** Handle empty containers with care because residual vapors are flammable.

**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. In Accordance with DOT** Not regulated for transport

**14.2. In Accordance with IMDG** Not regulated for transport

**14.3. In Accordance with IATA** Not regulated for transport

**14.4. In Accordance with TDG** Not regulated for transport

## SECTION 15: REGULATORY INFORMATION

### 15.1. US Federal Regulations

|   |
|---|
| <b>Water (7732-18-5)</b>  |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |
| <b>Sodium chloride (7647-14-5)</b>  |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |
| <b>Dimethyl sulfoxide (67-68-5)</b>                                       |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |

### 15.2. US State Regulations

|  |
|--|
| <b>Dimethyl sulfoxide (67-68-5)</b>                        |
| U.S. - New Jersey - Right to Know Hazardous Substance List |

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### 15.3. Canadian Regulations

|   |
|---|
| <b>Water (7732-18-5)</b>                              |
| Listed on the Canadian DSL (Domestic Substances List) |
| <b>Sodium chloride (7647-14-5)</b>                    |
| Listed on the Canadian DSL (Domestic Substances List) |
| <b>Dimethyl sulfoxide (67-68-5)</b>                   |
| Listed on the Canadian DSL (Domestic Substances List) |

## SECTION 16: OTHER INFORMATION

### Other Information

: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

### GHS Full Text Phrases:

|                     |                              |
|---------------------|------------------------------|
| <b>Flam. Liq. 4</b> | Flammable liquids Category 4 |
| <b>H227</b>         | Combustible liquid           |

*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.*  
NA GHS SDS 2015 (Can, US, Mex)