

## SAFETY DATA SHEET (SDS)

SDS DATE : Aug, 2021

### Section 1. Product And Company Identification

- 1. Product identifier**
  - 1.1. Product Name : DirectBlue™ Gel Staining Solution
  - 1.2. Product Code : BDS-1000
- 2. Details of the supplier of the safety data sheet**
  - 2.1. Company: BIOMAX, Inc.,
  - 2.2. Address : Keumkang Penterium IX Tower CORE-C 7F, 46, Galmaesunhwan-ro 166beon-gil, Guri-si, Gyeonggi-do, Republic of Korea
  - 2.3. Telephone: +82-2-3296-3158
  - 2.4. Emergency Phone : +82-2-3296-3159
  - 2.5. FAX: +82-2-973-2858
- 3. Product use**
  - 3.1. For research use only.

### Section 2. Hazard identification

Component	Description	Volume	Safety Information
DirectBlue™ Gel Staining Solution	Liquid (in Ethanol)	1000 ml	See below

#### 1.1 Ethanol

##### Emergency Overview

**OSHA Hazards:** : Highly flammable liquid, Target organ effect, Irritant, Carcinogen

**Target Organs:** Nerves, Liver, Heart

**GHS Classification:** : Flammable liquids (Category 2)

Skin irritation (Category 2)

Eye irritation (Category 2B)

Specific target organ toxicity – single exposure (Category 3)

**GHS Label elements, including precautionary statements**

**Pictogram:**



**Signal word:** Danger

**Hazard statement(s):** H225 Highly flammable liquid and vapor  
 H315+H320 Causes skin and eye irritation.  
 H335 May cause respiratory irritation.

**Precautionary statement(s):** P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

**HMIS Classification**

**Health hazard:** 2

**Chronic Health Hazard:** \*

**Flammability:** 3

**Physical hazards:** 0

**NFPA Rating**

**Health Hazard:** 2

**Fire:** 3

**Reactivity Hazard:** 0

**Potential Health Effects**

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes:** Causes eye irritation.

**Ingestion:** May be harmful if swallowed.

### Section 3. Composition/Information on ingredients

Component	CAS Number	EC-No.	Molecular Weight	Formula
Ethanol	64-17-5	200-578-6	46.07	C <sub>2</sub> H <sub>6</sub> O

### Section 4. First Aid Measures

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact:** Wash off with soap and plenty of water.

**In case of eye contact:** Immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation occurs.

**If swallowed:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water

### Section 5. Fire-fighting Measures

#### **Ethanol:**

**Condition of flammability:** Flammable in the presence of a source of ignition when the temperature is above the flash point.

Keep away from heat/sparks/open flame/hot surface. No smoking.

**Special protective equipment for fire-fighters:** Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products:** Hazardous decomposition products formed under fire conditions— carbon oxides, nitrogen oxides.

**Further information:** Use water spray to cool unopened containers.

### Section 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapors can accumulate in low areas

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### Section 7. Handling And Storage

**Precautions for safe handling** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Flash back possible over considerable distance.

Container explosion may occur under fire conditions. Use explosion-proof equipment. Keep away from sources of ignition – no smoking.

Take measures to prevent the build up of electrostatic charge

**Conditions for safe storage** Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: RT

### Section 8: Exposure Controls/Personal Protection

#### **Ethanol:**

Components	CAS-No.	Value	Control parameters	Basis
Ethanol	64-17-5	TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks: Upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans.				
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA): Table Z-1 Limits for Air Contaminants
The value in mg/m <sup>3</sup> is approximate				
		TWA	1,000 ppm 1,900 mg/m <sup>3</sup>	USA. NIOSH recommended exposure limits

#### **Personal protective equipment**

##### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### **Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

##### **Eye protection**

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### **Skin and body protection**

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### **Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Section 9: Physical And Chemical Properties

Property	Ethanol
Appearance:	Clear liquid
pH:	No data available
Water Solubility:	Completely soluble
Other Solubility:	78-80°C (172.4-176°F)
Boiling Point (°C):	-144°C (-227.2°F)
Melting Point (°C):	14°C (57.2°F)
Flash Point (°C):	363°C (685°F)
Ignition Temperature (°C):	0.79 g/cm <sup>3</sup>
Density:	No data available

#### Section 10: Stability And Reactivity

Property	Ethanol
Chemical Stability:	Stable under recommended storage conditions and usage
Conditions to Avoid:	Heat, flames, sparks, direct sunlight
Materials to Avoid:	Alkali metals, ammonia, oxidizing agents, peroxides
Hazardous decomposition: products:	Carbon oxides

#### Section 11: Toxicological Information

##### Ethanol:

**Acute toxicity:** LD50 Oral – rat – 7,060 mg/kg Remarks: Lungs, thorax, or respiration: other changes

LC50 Inhalation – rat – 10 h – 20000 ppm

**Skin corrosion/irritation:** Skin – rabbit – irritating to skin – 24 h

**Serious eye damage/eye irritation:** Eyes – rabbit – mild eye irritation – 24 h (Draize test)

**Respiratory or skin sensitization:** no data available

**Germ cell mutagenicity:** no data available

##### **Carcinogenicity:**

Carcinogenicity – mouse – oral -> Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Liver: tumors. Blood: Lymphomas including Hodgkin's disease.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** Reproductive toxicity – human – female – oral -> Effects on newborn: apgar score (human only), other neonatal measures or effects, and drug dependence.

**Teratogenicity:** no data available

**Specific target organ toxicity – single exposure (GHS):** Inhalation – may cause respiratory irritation.

**Specific target organ toxicity – repeated exposure (GHS):** no data available

**Aspiration hazard:** no data available

##### **Potential Health Effects**

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. Causes skin irritation.

**Eyes:** Causes eye irritation.

**Ingestion:** May be harmful if swallowed.

##### **Signs and Symptoms of Exposure:**

Exposure may cause central nervous system depression, narcosis, and/or damage to the heart. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects:** no data available

**Additional information:** RTECS: KQ6300000

#### Section 12: Ecological Information

##### Ethanol:

**Persistence and degradability:** no data available

**Toxicity:** Toxicity to fish: no data available

**Bioaccumulative potential:** no data available

**Mobility in soil:** no data available

**PBT and vPvB assessment:** no data available

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

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**Section 13: Disposal Considerations**

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**Product:** Observe all federal, state, and local environmental regulations.

**Contaminated packaging:** Dispose of as unused product.

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**Section 14: Transport Information**

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**Ethanol:**

**DOT (US):** UN-number: 1170                      Class: 3                      Packing group: II

Proper shipping name: Ethanol

Marine pollutant: No; Poison inhalation hazard: No

**IMDG:** UN-number: 1170                      Class: 3                      Packing group: II EMS-No: F-E, S-D

Proper shipping name: Ethanol

Marine pollutant: No

**IATA:** UN-number: 1170                      Class: 3                      Packing group: II

Proper shipping name: Ethanol

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**Section 15: Regulatory Information**

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- 1. Regulation under the Occupational Safety and Health Act**
    - 1.1 Harmful Substances Required Permission for Manufacture - Not relevant
    - 1.2 Harmful Substances Prohibited from Manufacturing - Not relevant
    - 1.3 Carcinogenic Substances - Not relevant
    - 1.4 Controlled Substances Subject to Environment Monitoring - Not relevant
    - 1.5 Controlled Substances Subject to Health Examination - Not relevant
    - 1.6 Hazardous substances requiring management - Not relevant
  - 2. Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**
    - 2.1 Toxic Chemicals - Not relevant
    - 2.2 Observational chemicals - Not relevant
    - 2.3 Restricted Chemicals - Not relevant
    - 2.4 Prohibited Chemicals - Not relevant
    - 2.5 Accident Precaution Chemicals - Not relevant
  - 3. Dangerous Substances Safety Management Act**
    - 3.1 Not relevant
  - 4. Wastes Control Act**
    - 4.1 Follow article 13 of the act to dispose the product waste
  - 5. Other regulations**

KECI Number

Not in compliance with the inventory
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**Section 16: Other information**

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**OTHER INFORMATION:****PREPARATION INFORMATION:****DISCLAIMER:**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions.

It does not represent any guarantee of the properties of the product. BIOMAX, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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