

## SAFETY DATA SHEET (SDS)

SDS DATE : July, 2021

### Section 1. Product And Company Identification

1. **Product identifier**
  - 1.1. Product Name : PicoSens™ Ascorbic Acid Assay Kit
  - 1.2. Product Code : BM-ACC-100
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
Ascorbic Acid Assay Buffer	Proprietary Buffer	25 mL	No hazards
Ascorbic Acid Enzyme mix	Lyophilized	N/A	No hazards
Ascorbic Acid Catalyst	Proprietary Buffer	200 µL	No hazards
Ascorbic Acid Probe	In DMSO	200 µL	See below
Ascorbic Acid Standard (100 mM)	Proprietary Buffer	100 µL	No hazards

#### 1.1 DMSO

##### Emergency Overview

**OSHA Hazards:** Combustible liquid, Target organ effect

**Target Organs:** Eyes, Skin

**GHS Classification:** : Flammable liquids (Category 4)

**GHS Label elements, including precautionary statements**

**Pictogram:**



**Signal word:** Warning

**Hazard statement(s):** H227 Combustible liquid

**Precautionary statement(s):** none

##### HMIS Classification

**Health hazard:** 0

**Chronic Health Hazard:** \*

**Flammability:** \*

**Physical hazards:** 0

##### NFPA Rating

**Health Hazard:** 0

**Fire:** 2

**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.

**Aggravated Medical Condition:** Avoid contact w/DMSO solutions containing toxic materials or materials with unknown toxicological

properties. DMSO is readily absorbed through skin and may carry such materials into the body

### Section 3. Composition/Information on ingredients

Component	CAS Number	EC-No.	Molecular Weight	Formula
DMSO	67-68-5	200-664-3	78.13	C <sub>2</sub> H <sub>6</sub> OS

### Section 4. First Aid Measures

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**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. Consult a physician.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed:** DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### Section 5. Fire-fighting Measures

#### **DMSO:**

**Suitable extinguishing media:** For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**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:** Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation.

**Environmental precautions:** Do not let product enter drains.

**Methods for cleaning up:** 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 vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition (no smoking).

Take measures to prevent the buildup of electrostatic charge.

#### **Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: -20°C.

### Section 8: Exposure Controls/Personal Protection

Components	CAS-No.	Value	Control parameters	Basis
Dimethyl sulfoxide	67-68-5	TWA	250 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

#### **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	DMSO
Appearance:	Clear liquid
pH:	No data available
Water Solubility:	Completely miscible

<b>Other Solubility:</b>	No data available
<b>Boiling Point (°C):</b>	189°C (372°F)
<b>Melting Point (°C):</b>	16-19°C (61-66°F)
<b>Flash Point (°C):</b>	87°C (189°F)
<b>Ignition Temperature (°C):</b>	301°C (574°F)
<b>Density:</b>	1.1 g/ml

#### Section 10: Stability And Reactivity

Property	DMSO
<b>Chemical Stability:</b>	Stable under recommended storage conditions
<b>Conditions to Avoid:</b>	Heat, flames, sparks
<b>Materials to Avoid:</b>	Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents
<b>Hazardous decomposition: products:</b>	Carbon oxides, sulfur oxides

#### Section 11: Toxicological Information

##### DMSO:

**Acute toxicity:** LD50 Oral - rat - 14,500 mg/kg

LC50 Inhalation - rat - 4 h - 40250 ppm

LD50 Dermal - rabbit - > 5,000 mg/kg

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

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

**Germ cell mutagenicity:** Genotoxicity in vitro - mouse – lymphocyte Cytogenetic analysis

Genotoxicity in vitro - mouse – lymphocyte Mutation in mammalian somatic cells.

Genotoxicity in vivo - rat – Intraperitoneal Cytogenetic analysis

Genotoxicity in vivo - mouse – Intraperitoneal DNA damage

##### **Carcinogenicity:**

Carcinogenicity – rat – Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin & Appendages: Other: Tumors.

Carcinogenicity – mouse – Oral Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin & Appendages: Other: Tumors.

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 – rat – Intraperitoneal Effects on Fertility: Abortion.

Reproductive toxicity – rat – Intraperitoneal Effects on Fertility: Post-implantation mortality

(e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity – rat – Subcutaneous Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).

Reproductive toxicity – mouse – Oral Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Specific Developmental Abnormalities: Musculoskeletal system.

**Teratogenicity:** : Developmental Toxicity – mouse – Intraperitoneal Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Specific Developmental Abnormalities: Musculoskeletal system.

**Signs and Symptoms of Exposure:** Exposure via ingestion may cause nausea, fatigue, headache.

**Additional Information:** RTECS: PV6210000

#### Section 12: Ecological Information

##### DMSO:

**Persistence and degradability:** no data available

**Toxicity:** Toxicity to fish: LC50 – Pimephales promelas (fathead minnow) – 34,000 mg/l – 96 h

LC50 – Oncorhynchus mykiss (rainbow trout) – 35,000 mg/l – 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 – Daphnia pulex (Water flea) – 27,500 mg/l

Toxicity to algae: EC50 – Lepomis macrochirus (Bluegill) – >400,000 mg/l – 96 h

**Bioaccumulative potential:** no data available

**Mobility in soil:** no data available

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

**Other adverse effects:** no data available

#### Section 13: Disposal Considerations

**Product:** Observe all federal, state, and local environmental regulations. Contact licensed professional waste disposal service to dispose of this material.

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

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**Section 14: Transport Information**

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**DMSO:**

**DOT (US):** UN-Number: 1993                      Class: CBL                      Packing group: III

Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide)

Marine pollutant: No; Poison Inhalation Hazard: No

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods.

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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.

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