

# SAFETY DATA SHEET

SDS DATE: February 2, 2021

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Angiotensin II Converting Enzyme (ACE2) Activity Assay Kit (Fluorometric)  
**PRODUCT CODES:** Cat# K897-100  
**RESTRICTIONS ON USE:** For laboratory research purposes. Not for drug or household use.  
**MANUFACTURER:** BioVision, Inc.  
**ADDRESS:** 155 S. Milpitas Blvd. Milpitas, CA 95035  
**EMERGENCY PHONE:** 858-373-8066  
**OTHER CALLS:** 408-493-1800  
**FAX PHONE:** 408-493-1801  
**EMAIL:** [sds@biovision.com](mailto:sds@biovision.com)

## SECTION 2: HAZARDS IDENTIFICATION

Component	Description	Volume	Safety Information
ACE2 Assay Buffer	Proprietary Buffer	25 ml	No hazards
ACE2 Dilution Buffer	Proprietary Buffer (contains Glycerol & BSA)	1.5 ml	See below
ACE2 Lysis Buffer	Proprietary Buffer (contains Tergitol)	50 ml	See below
ACE2 Positive Control	Liquid	5 µl	No hazards
ACE2 Substrate	Liquid (contains DMSO)	200 µl	See below
ACE2 Inhibitor (22 mM)	Liquid (contains DMSO)	50 µl	See below
MCA-Standard (1 mM)	Liquid (contains DMSO)	15 µl	See below

### Tergitol:

#### Emergency Overview

**GHS Classification:** Skin irritation (Category 2), H315  
Skin sensitization (Sub-category 1A), H317  
Short-term (acute) aquatic hazard (Category 1), H400  
Long-term (chronic) aquatic hazard (Category 1), H410

#### GHS Label elements, including precautionary statements



#### Pictogram:

#### Signal word:

#### Hazard statement(s):

Warning

H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H410 Very toxic to aquatic life with long lasting effects.

#### Precautionary statement(s):

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
P264 Wash skin thoroughly after handling.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.  
P391 Collect spillage.  
P501 Dispose of contents/ container to an approved waste disposal plant

#### HMIS Classification

Health hazard: 0

Chronic health hazard:

Flammability: 0

Physical hazards: 0

#### NFPA Rating

Health hazard: 0

Fire: 0

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Reactivity hazard: 0

## Potential Health Effects

**Inhalation:** May be harmful if inhaled. Material is irritating to the tissue of the mucous membranes and upper respiratory tract. Harmful; if inhaled. May cause allergy or asthma symptoms or breathing difficulties.

**Skin:** May be harmful if absorbed through skin. May cause an allergic skin reaction.

## Bovine Serum Albumin (BSA):

### Emergency Overview:

**GHS Classification:** Acute Toxicity; Oral, Category 4

### GHS Label elements, including precautionary statements



### Pictogram:

**Signal word:** Warning

**Hazard statement(s):** H302: Harmful if swallowed.

**Precautionary statement(s):** P264: Wash {hands} thoroughly after handling.  
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330: Rinse mouth.

**Adverse Human Health:** Harmful if swallowed.

**Effects and Symptoms:** Material may be irritating to the mucous membranes and upper respiratory tract.

May be harmful by inhalation or skin absorption.

May cause eye, skin, or respiratory system irritation.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated

## HMIS Classification

**Health hazard:** 1

**Flammability:** 0

**Physical hazards:** 0

## NFPA Rating

**Health Hazard:** 1

**Fire:** 0

**Reactivity Hazard:** 0

## Potential Health Effects

**Inhalation:** May be harmful by inhalation. Material may be irritating to the mucous membranes and upper respiratory tract.

**Skin:** Harmful if absorbed through skin. May cause skin irritation.

**Eyes:** Cause eye irritation.

**Ingestion:** Harmful if swallowed

## 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:** 2

**Physical hazards:** 0

## NFPA Rating

**Health hazard:** 0

**Fire:** 2

**Reactivity Hazard:** 0

## Potential Health Effects

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

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

**Eyes:** May cause 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.

## Glycerol:

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## Emergency Overview

OSHA Hazards: Not available

Target Organs: Eyes, Skin

GHS Classification: Not available

GHS Label elements, including precautionary statements



Pictogram:

Signal word:

Warning

Hazard statement(s):

Not available

Precautionary statement(s): none

## HMIS Classification

Health hazard: 1

Chronic Health Hazard: 0

Flammability: 1

Physical hazards: 0

## NFPA Rating

Health hazard: 1

Fire: 0

Reactivity Hazard: 0

## Potential Health Effects

**Inhalation:** Low hazard for usual industrial handling. Inhalation of a mist of this material may cause respiratory tract irritation.

**Skin:** May cause skin irritation. Low hazard for usual industrial handling

**Eyes:** May cause eye irritation.

**Ingestion:** Ingestion of large amounts may cause gastrointestinal irritation. Low hazard for usual industrial handling. May cause headache.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
Tergitol	84133-50-6	617-534-0	--	--	<0.6%
DMSO	67-68-5	200-664-3	78.13	C <sub>2</sub> H <sub>6</sub> OS	<100%
BSA	9048-46-8	232-936-2	--	--	≤1%
Glycerol	56-81-5	200-289-5	92.09	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>	<15%

## SECTION 4: FIRST AID MEASURES

### Tergitol:

**General advice:** : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**If inhaled:** Move person to fresh air; if effects occur, consult a physician.

**In case of skin contact:** Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly. Safety shower should be located in immediate work area.

**In case of eye contact:** : Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Eye wash fountain should be located in immediate work area.

**If swallowed:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient

### Bovine Serum Albumin (BSA):

**If inhaled:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

**In case of skin contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

**In case of eye contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

**If swallowed:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.

### DMSO:

**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.

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**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

**If swallowed:** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## **Glycerol:**

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

**If inhaled:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

**In case of skin contact:** Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

**In case of eye contact:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.

**If swallowed:** Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cup full of milk or water. Get medical aid if irritation or symptoms occur.

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## **SECTION 5: FIRE-FIGHTING MEASURES**

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### **Tergitol:**

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable Extinguishing Media:** Do not use direct water stream. May spread fire.

**Special hazards arising from the substance or mixture:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

**Advice for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

**Further information:** Keep people away. Isolate fire and deny unnecessary entry. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage

### **Bovine Serum Albumin (BSA):**

**Suitable extinguishing media:** Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

**Unsuitable extinguishing media:** A solid water stream may be inefficient.

**Special protective equipment for fire fighters:** As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

**Further information:** No data available

### **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 firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

**Hazardous combustion products:** Hazardous combustion products formed under fire conditions – no data available.

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

### **Glycerol:**

**Suitable extinguishing media:** Use water spray to cool fire-exposed containers. Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Special hazards arising from the substance or mixture:** Thermal decomposition can lead to release of irritating gases and vapors.

**Advice for firefighters:** Wear protective eyewear, gloves, and clothing.

**Further information:** Avoid inhaling gases, fumes, dust, mist, vapor, and aerosols. Avoid contact with skin, eyes, and clothing

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## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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### **Tergitol:**

**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Spilled material may cause a slipping hazard. Refer to section 7, Handling, for additional precautionary measures.

**Environmental precautions:** : Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Absorb with materials such as: Sand. Dirt. Collect in suitable and properly labeled containers. Do not use water for cleanup. See Section 13, Disposal Considerations, for additional information.

### **Bovine Serum Albumin (BSA):**

**Personal precautions, Protective equipment and emergency procedures:** Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

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**Environmental precautions:** Take steps to avoid release into the environment, if safe to do so.

**Methods for cleaning up:** Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations

## **DMSO:**

**Personal precautions:** Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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

## **Glycerol:**

**Personal precautions, protective equipment and emergency procedures:** Ensure adequate ventilation. Ensure that air-handling systems are operational. Should not be released into environment. Prevent from reaching drains, sewer, or waterway.

**Methods and materials for containment and cleaning up:** Wear protective eyewear, gloves, and clothing. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Keep in suitable closed containers for disposal

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## SECTION 7: HANDLING AND STORAGE

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### **Tergitol:**

**Handling:** Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Spills of these organic materials on hot fibrous insulations may lead to lowering of the Autoignition temperatures possibly resulting in spontaneous combustion.

**Storage:** No specific requirements. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact. The shelf life given is for unopened containers stored under moderate temperature conditions

### **Bovine Serum Albumin (BSA):**

**Precautions for safe handling:** Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid prolonged or repeated exposure.

**Conditions for safe storage:** Keep container tightly closed. Store in accordance with information listed on the product insert.

### **DMSO:**

**Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Conditions for safe storage:** Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: -20 °C.

### **Glycerol:**

**Precautions for safe handling:** Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Wash clothing before reuse.

**Conditions for safe storage, including any incompatibilities:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. No special precautions indicated

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## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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### **Tergitol:**

#### **Control parameters**

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Poly(ethylene oxide)	US WEEL	TWA aerosol	10 mg/m <sup>3</sup>

**Engineering Controls:** Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

#### **Personal protective equipment:**

##### **Respiratory Protection**

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

##### **Hand protection**

Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber, Chlorinated polyethylene, Polyethylene.

##### **Eye protection**

Use chemical goggles.

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

Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task

### **Bovine Serum Albumin (BSA):**

#### **Exposure Controls:**

CAS#	Partial Chemical Name	Britain EH40	France VL	Europe
9048-46-8	Bovine Serum Albumin (BSA)	No data	No data	No data

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CAS#	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other limits
9048-46-8	Bovine Serum Albumin (BSA)	No data	No data	No data

## DMSO:

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

## Glycerol:

### Personal protective equipment:

#### Eye protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

#### Skin and body protection

Wear appropriate protective gloves to prevent skin exposure. Wear appropriate protective clothing to minimize contact with skin.

#### Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Tergitol	BSA	DMSO	Glycerol
<b>Appearance:</b>	Liquid	A dry powder	Clear liquid	Clear viscous liquid
<b>pH:</b>	7.2	No data available	No data available	5.5 -8
<b>Water Solubility:</b>	< 0.5 %	No data available	Completely miscible	Miscible
<b>Other Solubility:</b>	No data available	No data available	No data available	No data available
<b>Boiling Point (°C)</b>	> 200 °C (> 392 °F)	No data available	189 °C (372 °F)	290 °C ( 554.00°F)
<b>Melting Point (°C)</b>	No data available	No data available	16-19 °C (61-66 °F)	17.8 °C ( 19.94°F)
<b>Flash Point (°C)</b>	218 °C ( 424 °F)	No data available	87 °C (189 °F)	160 °C
<b>Ignition Temp. (°C)</b>	No data available	No data available	301 °C (574 °F)	No data available
<b>Density:</b>	No data available	No data available	1.1 g/ml	No data available

## SECTION 10: STABILITY AND REACTIVITY

Property	Tergitol	BSA	DMSO	Glycerol
<b>Chemical Stability:</b>	Stable under recommended storage conditions			
<b>Conditions to Avoid:</b>	Strong heating	No data available	Heat, flames, sparks	Incompatible materials, ignition sources, excess heat
<b>Materials to Avoid:</b>	Strong acids, Strong bases, Strong oxidizing agents	No data available	Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents	Not available
<b>Hazardous decomposition products:</b>	Carbon oxides (fire condition)	No data available	Carbon oxides, sulfur oxides	Carbon monoxide, carbon dioxide.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Tergitol:

**Acute toxicity:** No data available

**Skin corrosion/irritation:** Mixture causes skin irritation.

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

**Respiratory or skin sensitization:** Mixture may cause an allergic skin reaction.

**Germ cell mutagenicity:** No data available

### Carcinogenicity:

- 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:** No data available

**Specific target organ toxicity – single exposure (GHS):** No data available

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

**Aspiration hazard:** No data available

**Synergistic effects:** No data available

**Additional information:** RTECS: No data available



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## Bovine Serum Albumin (BSA):

The toxicological effects of this product have not been thoroughly studied



### 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:** Skin – rabbit – no skin irritation – 4h

**Serious eye damage/eye irritation:** Eyes – rabbit – mild eye irritation

**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 and appendages: other: tumors.

Carcinogenicity – mouse – Oral → Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Leukemia skin and 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: post-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea). Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: musculoskeletal system.

**Teratogenicity:** Developmental toxicity – mouse – Intraperitoneal: Effects on embryo/fetus: Fetotoxicity (except death, e.g. stunted fetus).

Specific developmental abnormalities: musculoskeletal system

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

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

**Aspiration hazard:** no data available

### **Potential Health Effects**

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

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

**Eyes:** May cause 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.

**Signs and Symptoms of Exposure:** Effects due to ingestion may include: nausea, fatigue, and/or headache.

**Additional information:** RTECS: PV6210000

### Glycerol:

**Acute toxicity:** LD50 Oral - rat – 12,600 mg/kg

LC50 Inhalation - rat - 570 mg/m<sup>3</sup>/1hr

Dermal – rabbit: Mild eye irritation-24 hr

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

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

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

**Germ cell mutagenicity:** no data available

**Carcinogenicity:** Not listed as a carcinogen( ACGIH, IARC, NTP)

**Reproductive toxicity:** No data available

**Mutagenicity:** No data available

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## **SECTION 12: ECOLOGICAL INFORMATION**

### Tergitol:

**Toxicity:** No data available

**Persistence and degradability:** Readily biodegradable

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

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

**Other adverse effects:** No data available

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## Bovine Serum Albumin (BSA):

**Toxicity:** Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

**Persistence and degradability:** No data available

**Toxicity:** No data available

**Bio accumulative potential:** No data available

**Mobility in soil:** No data available

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

## DMSO:

**Elimination information (persistence and degradability):** no data available

**Ecotoxicity effects:** 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

**Further information on ecology:** no data available

## Glycerol:

**Persistence and degradability:** Easily biodegradable

**Toxicity:** No data available

**Bioaccumulative potential:** Not bioaccumulative

**Mobility in soil:** Aqueous solution has high mobility in soil.

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

**Other adverse effects:** no data available

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## **SECTION 13: DISPOSAL CONSIDERATIONS**

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### Tergitol:

**Product:** Waste material must be disposed of in accordance with the national and local No mixing with other waste.

### Bovine Serum Albumin (BSA):

**Waste Disposal Method:** Dispose in accordance with local, state, and federal regulations

### DMSO:

**Product:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

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

### Glycerol:

**Product:** Dispose of in a manner consistent with federal, state, and local regulations.

**Storage:** No data available

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## **SECTION 14: TRANSPORT INFORMATION**

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### Tergitol:

**DOT (US):** Not dangerous goods

**IMDG:** UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F  
Proper shipping name: Environmentally hazardous substance, liquid.  
Marine pollutant : yes

**IATA:** UN number: 3082 Class: 9 Packing group: III  
Proper shipping name: Environmentally hazardous substance, liquid.

### Bovine Serum Albumin (BSA):

**DOT (US):** Not dangerous goods

**IMDG:** Not dangerous goods

**IATA:** Not dangerous goods

### 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.

### Glycerol:

**DOT (US):** Not dangerous goods

**IMDG:** Not dangerous goods.

**IATA:** Not dangerous goods

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## **SECTION 15: REGULATORY INFORMATION**

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**SARA 302 Components:** SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.



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**SARA 313 Components:** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:** Glycerol: Acute Health Hazard, Chronic Health Hazard DMSO: Fire Hazard, Chronic Health Hazard;

**Massachusetts Right To Know Components:** Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01

**Pennsylvania Right To Know Components:** Dimethyl sulfoxide CAS-No. 67-68-5; Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01

**New Jersey Right To Know Components:** Dimethyl sulfoxide CAS-No. 67-68-5; Glycerol, CAS-No. 56-81-5; Revision Date: 2007-03-01

**California Prop. 65 Components:** This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

## EU regulations

Component	Risk Phrases	Safety Phrases
Tergitol	--	--
BSA	--	--
DMSO	R10, R36/37/38	S24/25, S36/37/39, S45
Glycerol	--	--

## SECTION 16: OTHER INFORMATION:

### 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. BioVision, 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.