

# SAFETY DATA SHEET

SDS DATE: December 08, 2021



## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Pyruvate Colorimetric/Fluorometric Assay Kit

**PRODUCT CODES:** Cat. # K609-100

**RESTRICTIONS ON USE:** For laboratory research purposes. Not for drug or household use.

**MANUFACTURER:** BioVision, Inc.

**ADDRESS:** 155 S. Milpitas Boulevard, 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: COMPOSITION/INFORMATION ON INGREDIENTS

Components	Description	Volume	Safety Information
Pyruvate Assay Buffer	Proprietary buffer (contains Tergitol)	25 ml	See below
Pyruvate Probe (in DMSO)	Liquid (contains DMSO)	200 µl	See below
Pyruvate Enzyme Mix	Lyophilized	Lyophilized	No hazards
Pyruvate Standard (100 nmol/µl)	Liquid	100 µl	No hazards

### 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

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.

**Eyes:** Causes eye irritation.

**Ingestion:** Harmful if swallowed.

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

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## 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.

## SECTION 3: HAZARDS IDENTIFICATION

Component	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
Tergitol	84133-50-6	617-534-0	--	--	≤ 1%
DMSO	67-68-5	200-664-3	78.13	C <sub>2</sub> H <sub>6</sub> OS	<100%

## SECTION 4: FIRST AID MEASURES

**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

## SECTION 5: FIRE-FIGHTING MEASURES

### 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 firefighting clothing (includes firefighting 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

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**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable extinguishing media:** Do NOT use water jet.

**Special hazards arising from the substance or mixture:** Carbon oxides, Sulphur oxides

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

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

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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.

### DMSO:

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

**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 and materials for containment and cleaning up:** Soak up with inert absorbent material and dispose of as hazardous waste. 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

### DMSO:

**Precautions for safe handling:** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.2.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place. Store in a cool, dry, well-ventilated area away from incompatible substances. Recommended storage temperature: 4°C

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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/m3

**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

### DMSO:

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

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	DMSO	Tergitol
Appearance:	Clear liquid	Liquid
pH:	No data available	7.2
Water Solubility:	No data available	<0.5%
Other Solubility:	DMSO	No data available
Boiling Point (°C):	189 °C 372 °F - lit.	> 200 °C (> 392 °F)
Melting Point (°C):	16 - 19 °C (61 - 66 °F) - lit.	No data available
Flash Point (°C):	87 °C (189 °F) - closed cup	218 °C (424 °F) ASTM D 93, closed cup
Ignition Temperature (°C):	No data available	No data available
Relative density:	1.1 g/cm3	1.027 at 20 °C (68 °F) / 20 °C

## SECTION 10: STABILITY AND REACTIVITY

Property	DMSO	Tergitol
Chemical stability:	Stable under recommended storage conditions.	
Conditions to avoid:	flash point. Contact with incompatible materials.	Strong heating
Materials to avoid:	Strong oxidizing agents. Alkaline metals. Isocyanates	Strong acids, Strong bases, Strong oxidizing agents
Hazardous decomposition products:	None	Carbon oxides (fire condition)

## 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

### 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/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.

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**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

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## SECTION 12: ECOLOGICAL INFORMATION

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**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

**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

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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.

**DMSO:**

**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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**Tergitol:**

**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.

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## SECTION 15: REGULATORY INFORMATION

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

**SARA 313 Components:** SARA 313: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 313.

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

**Massachusetts Right To Know Components:** None

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

**New Jersey Right To Know Components:** Dimethyl sulfoxide CAS-No. 67-68-5; 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 defects, or any other reproductive harm.

**EU regulations**

Component	Risk Phrases	Safety Phrases
DMSO	--	--
Tergitol	--	--

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## SECTION 16: OTHER INFORMATION

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### 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.