

# SAFETY DATA SHEET

## Section 1 – Identification

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|                           |  |
|---------------------------|--|
| Product Name              | Zombie Yellow™ Fixable Viability Kit   |
| Catalog No.               | 423101/423102  |
| Recommended Use           | Research use only  |
| Company                   | BioLegend  |
| Street Address            | 9727 Pacific Heights Blvd  |
| City, State, Zip, Country | San Diego, CA 92121 US   |
| Phone                     | 858-455-9588   |
| Emergency Number          | In case of a chemical emergency, spill, fire, or exposure,<br>+1-858-455-9588 (7:00AM – 5:00PM PDT, M-F) |

## Section 2 – Hazards Identification

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### 2.1 GHS Hazard Classification

Flammable liquids (Category 4)

### OSHA Hazards

Combustible Liquid, Target Organ Effect

### Target Organs

Eyes, Skin

### 2.2 GHS Label elements, including precautionary statements

|                         |                    |
|-------------------------|--------------------|
| <b>Pictogram</b>        | None               |
| <b>Signal Word</b>      | Warning            |
| <b>Hazard Statement</b> |                    |
| H227                    | Combustible liquid |

### Precautionary Statement (Prevention)

|           |  |
|-----------|--|
| P210      | Keep away from flames and hot surfaces. – No smoking.  |
| P280      | Wear protective gloves/eye protection/face protection.   |
| P370+P378 | In case of fire: Use media such as alcohol-resistant foam, dry chemical, water, or carbon dioxide for extinction. 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. |
| P403+P235 | Store in a well-ventilated place. Keep cool.   |

P501 Dispose of contents/container in accordance with local regulations.

### Potential Health Effects

**Inhalation** May be harmful if inhaled.  
**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 with DMSO solutions containing toxic materials with Unknown toxicological properties. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body.

## Section 3 – Composition/Information on Ingredients

### 1. DMSO

| Component:                | CAS     | EINECS    | Concentration |
|---------------------------|---------|-----------|---------------|
| Dimethyl Sulfoxide (DMSO) | 67-68-5 | 200-664-3 | >99% (v/v)    |

### 2. Zombie Yellow™ dye

| Component:         | CAS | EINECS | Concentration |
|--------------------|-----|--------|---------------|
| Zombie Yellow™ dye | n/a | n/a    | >99% (v/v)    |

## Section 4 – First Aid Measures

### 4.1 Description of first aid measures

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

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

**After skin contact:** Wash off with soap and plenty of water. Consult a physician.

**After eye contact:** Flush eyes with water as a precaution.

**After swallowing:** 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

Flammable in presence of a source of ignition when the temperature is above the flash point. Keep away from heat, sparks, open flames and hot surfaces. No smoking.

**5.1 Suitable extinguishing agents:** For small (incipient) fires, use media such as alcohol foam, dry chemical, or carbon dioxide. For fire fighters, 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.

**5.2 Special hazards caused by the material, its products of combustion or resulting gases:** Containers can burst due to heat and pressure. Move container from fire area if it is safe to do so.

**5.3 Special protective equipment and precautions for fire-fighters:** Wear protective clothing and self-contained breathing apparatus. Use water to cool unopened containers.

**Hazardous combustion products:** Carbon oxides, Sulfur oxides.

## Section 6 – Accidental Release Measures

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**6.1 Person-related safety precautions:** Avoid breathing vapours, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**6.2 Environment precautions:** Prevent entry into waterways, drains, soil, and sewers. Prevent further leakage or spillage if safe to do so.

**6.3 Measures for cleaning/collecting:** Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

### 6.4 Additional information:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## Section 7 – Handling and Storage

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**7.1 Information for safe handling:** Avoid inhalation of vapor or mist. Keep away from sources of ignition (heat, sparks, open flames, hot surface). No smoking. Take measures to prevent the buildup of electrostatic charge.

**7.2 Conditions for safe storage:** Keep container tightly closed in a dry and well-ventilated place. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

## Section 8 – Exposure controls/personal protection

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### 8.1 Exposure Limits

#### Dimethyl Sulfoxide

##### Workplace Environmental Exposure Level

|     |         |
|-----|---------|
| TWA | 250 ppm |
|-----|---------|

### 8.2 Exposure Controls

#### Engineering Controls

Use only with adequate (local exhaust) ventilation or inside a fume hood.

#### Personal protective equipment

**Protection of hands:** Chemical resistant gloves.

**Eye protection:** Laboratory safety goggles.

**Body protection:** Protective work clothing.

## Section 9 – Physical and Chemical Properties

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|                              |                   |
|------------------------------|-------------------|
| Appearance                   | Liquid, Colorless |
| Odor                         | Odorless          |
| Odor Threshold               | Not Available     |
| pH                           | No Data Available |
| Melting point/freezing point | 18.45°C           |
| Boiling point                | 189°C             |
| Flash point                  | 87°C              |
| Evaporation rate             | No Data Available |
| Flammability                 | No Data Available |
| Upper explosion limit        | No Data Available |
| Lower explosion limit        | No Data Available |
| Vapor pressure               | 0.42 mmHg at 20°C |
| Vapor density                | 2.7 g/l at 20°C   |
| Relative density             | No Data Available |
| Solubility                   | Difficult to mix  |
| Partition coefficient        | No Data Available |
| Auto-ignition temperature    | 270°C             |
| Decomposition temperature    | No Data Available |
| Viscosity                    | No Data Available |
| Explosive Properties         | No Data Available |
| Oxidizing Properties         | No Data Available |

## Section 10 – Stability and Reactivity

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### 10.1 Reactivity

May be reactive with water.

### 10.2 Chemical stability

Stable when stored under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

No data available.

### 10.4 Conditions to avoid

Avoid exposure to high temperatures (heat, flames, sparks) or direct sunlight.

### 10.5 Incompatible materials

Store separately from alkalis, reducing agents, flammable, metals, powdered metals, chlorates, cyanides, nitrates, halides, carbides, fulminates, hydrogen peroxide, combustible organic materials, acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents, any strong oxidizing or reducing reagent.

### 10.6 Hazardous decomposition products

Sulphur oxides, carbon oxides.

## Section 11 – Toxicological Information

### 11.1 Information on toxicological effects

|                                   |  |
|-----------------------------------|--|
| Routes of Entry                   | Ingestion, inhalation, skin and eye contact.   |
| Acute Toxicity                    | Oral LD50 14,500 mg/kg (rat)<br>LC50 (rat) 4 hours 40,250 ppm<br>LD50 dermal (rabbit) >5,000 mg/kg |
| Skin Corrosion/Irritation         | May cause skin irritation. No rabbit skin irritation with 4 hours.                                 |
| Serious eye damage/irritation     | May cause irritation   |
| Respiratory or skin sensitization | Harmful to mucous membranes and upper respiratory tract  |
| Germ cell mutagenicity            | No data available  |
| Carcinogenicity                   | No data available  |
| Reproductive toxicity             | No data available  |
| STOT-single exposure              | No data available  |
| STOT-repeated exposure            | No data available  |
| Aspiration hazard                 | No data available  |

#### Potential health effects:

|                                     |   |
|-------------------------------------|---|
| <b>Inhalation</b>                   | May be harmful if inhaled.  |
| <b>Skin</b>                         | May be harmful if absorbed through skin. May cause skin irritation.   |
| <b>Eyes</b>                         | May cause eye irritation.   |
| <b>Ingestion</b>                    | May be harmful if swallowed.  |
| <b>Aggravated Medical Condition</b> | Avoid contact with DMSO solutions containing toxic materials with unknown toxicological properties. Dimethyl sulfoxide is readily absorbed through skin and may carry such materials into the body. |

## Section 12 – Ecological Information

|                                    |  |
|------------------------------------|--|
| Environmental Toxicity             | No data available  |
| Aquatic Toxicity                   | DMSO LC50 toxicity to fish, (rainbow trout)<br>Oncorhynchus mykiss: 35,000 mg/l – 96.0 h |
| Persistence and degradability      | No data available  |
| Bioaccumulative potential          | No data available  |
| Mobility in soil                   | No data available  |
| Results of PBT and vPvT assessment | No data available  |

### Section 13 – Disposal Considerations

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Minimize waste as much as possible.

Provide any solution that cannot be recycled or used to a licensed disposal company. Alternatively, dissolve in or mix with a combustible solvent, and burn in a chemical incinerator equipped with an after burner and scrubber.

Disposal must be made according to state and federal regulations.

### Section 14 – Transport Information

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#### **DOT (Domestic)**

NA1993, Combustible liquid, n.o.s. Packing Group: III  
Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide)  
Marine pollutant: No  
Poison Inhalation Hazard: No

#### **IMDG**

Not regulated

#### **IATA**

Not regulated

#### **ADR**

Not regulated

#### **ADN**

Not regulated

#### **RID**

Not regulated

### Section 15 – Regulatory Information

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#### **OSHA Hazards**

Combustible Liquid, Target Organ Effect

#### **SARA 302 Components**

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

#### **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**

Fire Hazard, Chronic Health Hazard



### **Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

### **Pennsylvania Right To Know Components**

|                    |                    |                             |
|--------------------|--------------------|-----------------------------|
| Dimethyl sulfoxide | CAS-No.<br>67-68-5 | Revision Date<br>2007-03-01 |
|--------------------|--------------------|-----------------------------|

### **New Jersey Right To Know Components**

|                    |                    |                             |
|--------------------|--------------------|-----------------------------|
| Dimethyl sulfoxide | CAS-No.<br>67-68-5 | Revision Date<br>2007-03-01 |
|--------------------|--------------------|-----------------------------|

### **California Prop. 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

### **Section 16 – Other information**

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Revision Date: August 5<sup>th</sup>, 2014

Only trained personnel should use this material.

To the best of our knowledge, the information contained herein is accurate. However, neither BioLegend, nor any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Department issuing SDS: Safety & Environment Department  
Contact: Technical Service Representative