SAFETY DATA SHEET

Section 1 – Identification

Product Name	Cell Activation Cocktail (with Brefeldin A)
Catalog No.	423303 & 423304
Recommended Use	Research use only
Company Street Address City, State, Zip, Country	BioLegend 9727 Pacific Heights Blvd San Diego, CA 92121 US
Phone Emergency Number	858-455-9588 In case of a chemical emergency, spill, fire, or exposure, +1-858-455-9588 (7:00AM – 5:00PM PDT, M-F)

Section 2 – Hazards Identification

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

Pictogram	None
Signal Word	Warning
Hazard Statement	
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

Component	CAS	EINECS	Concentration
Dimethyl Sulfoxide (DMSO)	67-68-5	200-664-3	>95% (v/v)
Brefeldin A	20350-15-6	247-104-4	2.5%
Phorbol 12-myristate-13-acetate (PMA)	9003-21-8	N/A	<0.1%
Ionomycin	56092-82-1	N/A	<0.1%

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

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

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

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

Appearance	Liquid, Colorless
Odor	Odorless
Odor Threshold	Not Available
pH	No Data Available
Melting point/freezing point	18.45ºC
Boiling point	189ºC
Flash point	87ºC
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 20ºC
Vapor density	2.7 g/l at 20ºC
Relative density	No Data Available
Solubility	Difficult to mix
Partition coefficient	No Data Available
Auto-ignition temperature	270ºC
Decomposition temperature	No Data Available
Viscosity	No Data Available
Explosive Properties	No Data Available
Oxidizing Properties	No Data Available

Section 10 – Stability and Reactivity

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, powered 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) LC50 (rat) 4 hours 40,250 ppm 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

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Section 12 – Ecological Information

Environmental Toxicity	No data available
Aquatic Toxicity	DMSO LC50 toxicity to fish, (rainbow trout) 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

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

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

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.	Revision Date
	67-68-5	2007-03-01

New Jersey Right To Know Components

Dimethyl sulfoxide	CAS-No.	Revision Date
	67-68-5	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

Revision Date: September 23rd, 2013

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