



Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2017-08-28

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Version: 3

SECTION 1. Identification

Product identifier

Product No 49826
Product name Ghost Dye Violet 450 Fixable Viability Dye
UN number NA1993

Recommended use of the chemical and restrictions on use

Identified uses For research use only.

Manufacturer, importer, supplier

Manufacturer address Cell Signaling Technology, Inc.
3 Trask Lane
Danvers, MA 01923
United States
TEL: +1 978 867 2300
FAX: +1 978 867 2400
Website www.cellsignal.com
Email address support@cellsignal.com
Emergency telephone number In case of emergency call CHEMTREC 1-800-424-9300

SECTION 2. Hazard(s) identification

Classification

This substance/mixture is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Flammable liquids	Category 4

GHS Label elements, including precautionary statements



Signal Word
Warning

Hazard statement(s)

Combustible liquid.
Causes skin irritation.
Causes serious eye irritation.

Precautionary Statement(s)

Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Wash face, hands and any exposed skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use dry chemical, CO₂, water spray or alcohol-resistant foam to extinguish
Store in a well-ventilated place.
Dispose of contents/container to an approved waste disposal plant.

Supplementary Hazard Information**Hazards not otherwise classified (HNOC)**

Not applicable.

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown acute toxicity

SECTION 3. Composition/information on ingredients

Formula C₂H₆OS

Chemical name	CAS No	Weight-%
dimethyl sulfoxide	67-68-5	95 - <100

SECTION 4. First-aid measures

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
Skin contact Wash off with warm water and soap. If symptoms persist, call a physician.
Inhalation Move to fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion Rinse mouth. Do not induce vomiting without medical advice. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Irritating to eyes and skin.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Advice for emergency responders

General advice For further assistance, contact your local Poison Control Center.
Protection of first-aiders Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment Water spray Carbon dioxide (CO ₂) Foam Dry chemical
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Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. Vapors may form explosive mixture with air.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Avoid breathing dust/fume/gas/mist/vapors/spray. Ensure adequate ventilation.
Other information	No information available.

Environmental precautions

Should not be released into the environment. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Soak up with inert absorbent material.

SECTION 7. Handling and storage

Precautions for safe handling

Keep away from open flames, hot surfaces and sources of ignition. Do not breathe vapors or spray mist. Wear personal protective equipment. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions	Keep in a dry, cool and well-ventilated place. Protect from light.
Packaging material	No information available
Incompatible products	Strong oxidizing agents

SECTION 8. Exposure controls/personal protection

Control parameters

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

Eye/face protection	Safety glasses with side-shields
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Hygiene measures	Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Color	Colorless
Odor	Sulfur-like odor
Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH	6-8		
Melting point/freezing point	18-19 °C / 64.4-66.2 °F		
Boiling point or initial boiling point and boiling range	188-190 °C / 370-374 °F		
Flash point	87-89 °C / 188.6-192.2 °F		
Evaporation rate	No information available		
Flammability	No information available		
Lower explosion limit	2.4-2.8%		
Upper explosion limit	61-64%		
Vapor pressure	No information available		
Relative vapor density	No information available		
Density and/or relative density	No information available		
Solubility	No information available.		
Solubility in other solvents	No information available.		
Partition coefficient: n-octanol/water	log Kow = -1.35		
Autoignition temperature	214-216 °C / 417.2-420.8 °F		
Decomposition temperature	No information available	No information available.	
Viscosity	No information available		
Viscosity, dynamic	No information available		

Other information

Softening point	No information available
Molecular Weight	No information available
VOC content	No information available
Liquid Density	No information available
Bulk density	No information available

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous reactions	None under normal processing.
Hazardous polymerization	None under normal processing.

Conditions to Avoid

Keep away from open flames, hot surfaces and sources of ignition

Incompatible Materials

Strong oxidizing agents

Hazardous Decomposition Products

Sulfur oxides

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation of respiratory tract.
Eye contact	Irritating to eyes.
Skin contact	May be absorbed through the skin in harmful amounts. May cause irritation.
Ingestion	May be harmful if swallowed.

Information on toxicological effects

This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
dimethyl sulfoxide	= 28300 mg/kg (Rat)	= 40000 mg/kg (Rat)	> 5.33 mg/L (Rat) 4 h

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown acute toxicity.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Symptoms	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Irritating to eyes and skin.
Skin corrosion/irritation	Irritating to skin.
Serious eye damage/eye irritation	Irritating to eyes.
Sensitization	No information available.
Mutagenic effects	No information available.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Neurological effects	No information available.

Aspiration Hazard

No information available.

SECTION 12. Ecological information**Ecotoxicity**

0% of the mixture consists of components of unknown hazards to the aquatic environment.

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
dimethyl sulfoxide	-	LC50 34000 mg/L (Pimephales promelas) 96 h LC50 33 - 37 g/L (Oncorhynchus mykiss) 96 h LC50 40 g/L (Lepomis macrochirus) 96 h LC50 41.7 g/L (Cyprinus carpio) 96 h	-

Persistence and degradability

Readily biodegradable

Mobility

No information available

Bioaccumulation

Does not bioaccumulate

Chemical name	Octanol-Water Partition Coefficient
dimethyl sulfoxide	-1.35

Other adverse effects

No information available.

SECTION 13. Disposal considerations**Waste Disposal Methods**

Dispose of in accordance with all applicable national environmental laws and regulations.

Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way. Dispose of wastes in an approved waste disposal facility.

SECTION 14. Transport information**DOT****UN number**

NA1993

UN proper shipping name

Combustible liquid, n.o.s. (Dimethyl Sulfoxide (DMSO))

Packing group

III

SECTION 15. Regulatory information**North American Inventory Listing**

All components of this product are NOT included on the Toxic Substance Control Act (TSCA) Inventory, DSL, or NDSL All components of this product are NOT included on DSL or NDSL

Chemical name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
dimethyl sulfoxide	Listed	Not Listed	Listed	Not Listed

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification

This product does not meet the criteria for classification under the Hazardous Products Act.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product contains the following U.S. State Right to Know chemicals:

Chemical name	New Jersey	Massachusetts	Pennsylvania
dimethyl sulfoxide	Listed	Not Listed	Not Listed

U.S. FIFRA Label Information

This product does not contain any substances regulated as pesticides.

US Commerce Department - Export Administration Regulations Information

This product does not contain any substances regulated under the Chemical Weapons Convention (CWC).

U.S. Drug Enforcement Administration Information

This product does not contain any substances regulated under the DEA.

SECTION 16. Other information

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet