

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Green Fluorescent Dye

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Laboratory chemical for research use only.

1.3. Details of the supplier of the safety data sheet

Lucigen Corporation
2905 Parmenter Street
Middleton, WI 53562
U.S.A.
Phone: (608) 831-9011
Fax: (608) 831-9012
E-mail: techserv@lucigen.com

1.4. Emergency telephone number

Emergency number : 1-888-575-9695 (Lucigen: Monday-Friday, 8:00AM-5:00PM)

SECTION 2: Hazards identification

Classification of the substance or mixture:

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 4), H227

Serious eye damage/eye irritation (Category 2B), H320

GHS Label elements, including precautionary statements



Pictogram

Signal word Warning

Hazard statement(s):

H227 Combustible liquid.

H320 Causes eye irritation.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

P403 + P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: Composition/information on ingredients

CAS Number: [67-68-5]

Molecular Formula: C₂H₆OS Molecular Weight: 78.13 g/mol

Synonyms: Methyl sulfoxide

Hazardous components:

Flam. Liq. 4; Eye Irrit. 2B; H227, H320

SECTION 4: First aid measures

Description of first aid measures:

Skin contact: Wash off with soap and plenty of water.

Eye contact: Flush eyes with water as a precaution.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Do not induce vomiting without medical advice.

Inhalation: Move to fresh air. If not breathing, give artificial respiration.

Most important symptoms/effects, acute and delayed: Irritant effects, CNS disorders, nausea, headache, tiredness.

Indication of any immediate medical attention and special treatment needed:

Green Fluorescent Dye

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Note to physicians: Treat symptomatically.

SECTION 5: Firefighting measures

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 hazards arising from the substance or mixture: Carbon oxides, sulfur oxides.

Advice for firefighters: **Wear self-contained breathing apparatus and protective suit.**

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions: Do not let product enter drains.

Methods and materials for containment and cleaning up: 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 container for disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Wear personal protective equipment. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Provide appropriate exhaust ventilation.

Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in a dry and well ventilated place.

Recommended storage temperature: Room temperature, tightly closed.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Dimethyl sulfoxide	67-38-5	TWA	250.000000 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

8.2. Exposure controls

Appropriate engineering controls

: Exercise caution when handling. Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas. Emergency safety shower and eye wash station should be available. Avoid prolonged or repeated exposure.

Personal protective equipment

: Gloves. Protective goggles. Laboratory Coat.



Hand protection

: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves for this specific application can be recommended by the glove supplier. Gloves should be compatible with solvent if dissolved.

Eye protection

: Safety goggles should be worn when working with mixture. Avoid direct contact with eyes.

Skin and body protection

: As needed, wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection

: Use NIOSH/MSHA-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. Do not breathe in vapour, mist, or dust.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance: Colorless liquid.

Odor: Characteristic.

Odor threshold: No data available.

pH: No data available.

Melting point: 18.5oC

Initial boiling point and boiling range: 189oC at 1,013 hPa

Flash point: 87oC

Evaporation rate: . No data available.

Flammability: No data available.

Green Fluorescent Dye

Safety Data Sheet

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Upper/lower flammability or

explosive limits: 63.0 %(V) /1.8 %(V)

Vapor pressure: 0.6 hPa at 20°C

Vapor density: 2.7

Density: 1.10 g/cm³ at 20°C

Solubilities: H₂O

Partition coefficient: No data available.

Auto-ignition temperature: No data available.

Decomposition temperature: > 190 °C

Viscosity: 2.14 mPa.s at 20°C

Explosive properties: Not classified as explosive.

Oxidizing properties: None.

SECTION 10: Stability and reactivity

Reactivity: Forms explosive mixtures with air on intense heating.

Chemical stability: Hygroscopic. Stable under recommended storage conditions.

Possibility of hazardous reactions: Risk of explosion with: acetylidene, organic halides, perchlorates, acid chlorides, nonmetallic halides, iron(III) compounds, nitrates, fluorides, chlorates, hydrides, perchloric acid, Oxides of phosphorus, Nitric acid, silver compounds, silicon compounds, silanes, acid halides

Exothermic reaction with: boron compounds, oxyhalogenic compounds, potassium, sodium, strong oxidizing agents, phosphorus halides, strong reducing agents, acid chlorides, strong acids, silver salt, nitrogen dioxide

Risk of ignition or formation of inflammable gases or vapors with: potassium permanganate

Conditions to avoid: Heat, flames, sparks.

Incompatible materials: Acid chlorides, phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents.

Hazardous Decomposition: No data available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: LD50 Oral - Rat - 14,500 mg/kg

LC50 Inhalation - Rat - 4 h - 40250 ppm

LD50 Dermal - Rabbit - > 5,000 mg/kg

Potential health effects:

Eyes: May cause eye irritation with susceptible persons.

Skin: May cause skin irritation with susceptible persons.

Inhalation: May be harmful by inhalation.

Ingestion: Harmful if swallowed.

Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen.

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. Leukaemia Skin and Appendages: Other: Tumors.

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.

Developmental Toxicity - Mouse - Intraperitoneal Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific

Developmental Abnormalities: Musculoskeletal system

Specific target organ toxicity-single exposure: No data available.

Specific target organ toxicity-repeated exposure: No data available.

Aspiration hazard: No data available.

Additional information: Effects due to ingestion may include: Nausea, Fatigue, Headache

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1. Toxicity

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 magna (Water flea) - 24,600 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 h (OECD Test Guideline 201)

Persistence and degradability: Result: 31 % - According to the results of tests of biodegradability this product is not readily biodegradable. (OECD Test Guideline 301D)

Bioaccumulative potential: No data available.

Mobility in soil: No data available

Green Fluorescent Dye

Safety Data Sheet

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods:

Product: This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT

Not hazardous for transport

Additional information

Other information : No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

SARA 302

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

SARA 311/312

No SARA Hazards

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.

15.2. International regulations

Not a hazard.

15.3. US State regulations

California Proposition 65

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

Massachusetts Right To Know Components

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

New Jersey Right to Know Hazardous Substance List

No components are subject to the New Jersey Right to Know List.

Pennsylvania Right to Know List

No components are subject to the Pennsylvania Right to Know List.

SECTION 16: Other information

HMIS Rating:

Health Hazard: 1

Flammability: 2

Reactivity: 0

Personal Protection: X

NFPA Rating:

Health Hazard: 1

Fire Hazard: 2

Instability: 0

Reasons for revision: New SDS.

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

This information is disclosed to the best of Lucigen's knowledge. This document does not constitute a contractual relationship with product end users or handlers with respect to the possible presence of hazards in this item. Disposal should be in accordance with applicable regional, national and local laws and regulations.