

Safety Data Sheet

Fluorescein

Section 1: Identification

Product identifier	Fluorescein
Synonyms	Solvent Yellow 94; Yellow fluorescein; Resorcinolphthalein
CAS number	2321-07-5
Chemical formula	C ₂₀ H ₁₂ O ₅
Molecular weight	332.31 g/mol
Physical form	Red-brown powder
Recommended use	Fluorescent dye/colorant for appropriate commercial, industrial, technical, laboratory, tracer, analytical, educational and related non-food, non-drug applications. Product is described by the supplier as an oil-soluble fluorescent dye.
Use restrictions	Not intended or represented for food or drug/pharmaceutical applications.
Supplier / Distributor	Chemical Store Inc.
Address	1059 Main Avenue, Clifton, NJ 07011, United States
Telephone / Website / Email	+1 (973) 405-6248 ChemicalStore.com info@ChemicalStore.com
Emergency telephone	+1 (973) 420-4972 (United States)

Section 2: Hazards Identification

United States (US) - OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification	Serious eye damage / eye irritation - Category 2A.
Signal word	Warning
Pictogram	GHS07 - Exclamation mark
Hazard statement	H319 - Causes serious eye irritation.
Other hazards	Combustible organic solid. Fine powder may form airborne dust. Avoid generating or breathing dust. No other hazards are identified in the principal supplier SDS used for classification.

Precautionary statements

- P264 - Wash hands and exposed skin thoroughly after handling.
- P280 - Wear protective gloves and eye/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.

Section 3: Composition / Information on Ingredients

Chemical Name	CAS Number	% by Weight	Classification / Comments
Fluorescein	2321-07-5	Product-specific assay not provided; verify COA/specification	Eye Irritation Category 2A, H319. This SDS assumes fluorescein is the principal ingredient and no hazardous additives materially change the classification.

Note: The exact assay/purity and any additives should be confirmed from the current supplier specification or Certificate of Analysis before commercial release.

Section 4: First Aid Measures

Inhalation	Move person to fresh air. Keep comfortable for breathing. If coughing, irritation, breathing difficulty, or other symptoms persist, obtain medical attention.
Skin contact	Wash with soap and plenty of water. Remove contaminated clothing. Obtain medical advice if irritation develops or persists.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists, obtain medical advice/attention.
Ingestion	Rinse mouth. Do not induce vomiting unless directed by medical personnel. Obtain medical advice if a significant quantity is swallowed or symptoms occur.
Most important symptoms/effects	Serious eye irritation is the primary classified hazard. Dust may also cause transient mechanical irritation of the nose, throat, skin, or respiratory tract.
Notes to physician	Treat symptomatically and according to the circumstances of exposure.

Section 5: Fire Fighting Measures

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide as appropriate for the surrounding fire and packaging.
Unsuitable extinguishing media	No specific unsuitable extinguishing medium identified for the substance; avoid methods that unnecessarily disperse powder.
Specific hazards	Organic solid may burn under fire conditions. Dust generation should be minimized.
Hazardous combustion products	Carbon oxides and irritating fumes may be generated by thermal decomposition or combustion.
Firefighter protection	Wear appropriate protective equipment and positive-pressure self-contained breathing apparatus when required by fire conditions.

Section 6: Accidental Release Measures

Personal precautions	Avoid breathing dust and avoid contact with eyes. Keep unnecessary personnel away. Provide adequate ventilation and wear appropriate PPE.
Environmental precautions	Prevent large uncontrolled releases to drains, sewers, soil, and waterways.
Containment / cleanup	Avoid raising dust. Carefully sweep, scoop, or vacuum with suitable filtered equipment and place in a closed container for reuse or disposal. Clean residual material using methods that minimize airborne dust.

Section 7: Handling and Storage

Handling	Avoid contact with eyes. Avoid generating and breathing dust. Provide adequate ventilation. Wash thoroughly after handling. Keep away from unnecessary heat and ignition sources.
Storage	Keep container tightly closed in a cool, dry, well-ventilated place. Protect from contamination and prolonged exposure to light. Store away from incompatible materials.
Incompatible materials	Strong oxidizing agents should be avoided as a general precaution for an organic dye unless product-specific data establish compatibility.
Specific end use	Fluorescent dye/colorant and tracer for appropriate non-food, non-drug applications.

Section 8: Exposure Controls / Personal Protection

No substance-specific OSHA PEL or NIOSH REL was identified in the sources reviewed for fluorescein. Control airborne dust using good industrial hygiene practice and any applicable workplace particulate limits.

Engineering controls	Use adequate general ventilation and local exhaust where dust may be generated. Maintain airborne concentrations as low as reasonably practicable.
Eye / face protection	Safety glasses with side shields; use chemical splash/dust goggles where significant powder exposure is possible.
Skin protection	Protective gloves and work clothing suitable for the task. Fluorescein can strongly stain surfaces and clothing.
Respiratory protection	Where ventilation is inadequate or significant dust is generated, use an appropriate NIOSH-approved particulate respirator under a respiratory protection program meeting 29 CFR 1910.134.
Hygiene measures	Wash hands and exposed skin after handling and before eating, drinking, or smoking. Remove contaminated clothing before leaving the work area.

Section 9: Physical and Chemical Properties

Property	Value	Property	Value
Physical state	Solid powder	Appearance / color	Red-brown powder (product description); literature also describes yellowish-red, orange-red, or red forms
Odor	No characteristic odor identified	Molecular formula	C20H12O5
Molecular weight	332.31 g/mol	Melting / decomposition	About 315 °C with decomposition (literature value)
Water solubility	Insoluble / very low solubility in neutral water	Alcohol solubility	Alcohol-soluble under appropriate conditions; literature reports slight solubility in ethanol, solubility in methanol and hot alcohol
Other solubility	Very soluble in acetone; soluble in pyridine and dilute aqueous bases (literature)	Fluorescence	Very dilute alkaline solutions exhibit intense greenish-yellow fluorescence
Flash point	Not applicable / no established value for solid product	Flammability	Combustible organic solid; not classified as a flammable solid in the principal OSHA supplier SDS reviewed
Vapor pressure	Not applicable / negligible for solid	Vapor density	Not applicable
pH	Not applicable to dry powder	Relative density	Product-specific data not available
Odor threshold	Not determined	Partition coefficient	Not determined
Autoignition temperature	Not determined	Explosive properties	Not classified as explosive; avoid dispersing fine dust

Section 10: Stability and Reactivity

Reactivity	No dangerous reaction is expected under normal conditions of use.
Chemical stability	Stable under recommended storage conditions. Literature notes sensitivity to prolonged light exposure; protect from light where practical.
Possibility of hazardous reactions	Hazardous polymerization is not expected.
Conditions to avoid	Excessive heat, ignition sources, prolonged light exposure, and unnecessary dust generation.
Incompatible materials	Strong oxidizing agents; verify compatibility for process-specific chemicals.
Hazardous decomposition products	Carbon oxides and irritating organic fumes may form during combustion or severe thermal decomposition.

Section 11: Toxicological Information

Likely routes of exposure	Eye contact, inhalation of dust, skin contact, and incidental ingestion.
Eye damage / irritation	Classified as Eye Irritation Category 2A; causes serious eye irritation.

Acute toxicity	Available summaries generally describe fluorescein as having low acute toxicity. Some database notifications differ in classification; this SDS follows the current U.S. supplier SDS classification for CAS 2321-07-5 and does not assign acute toxicity without product-specific evidence.
Skin corrosion / irritation	Not classified based on the principal supplier information reviewed. Powder may cause mechanical irritation or staining.
Respiratory / skin sensitization	Not classified based on the principal supplier information reviewed.
Germ cell mutagenicity	Not classified based on available supplier information reviewed.
Carcinogenicity	No carcinogenic classification was identified in the principal U.S. supplier SDS reviewed for this product.
Reproductive toxicity	Not classified based on available supplier information reviewed.
STOT - single / repeated exposure	Not classified based on available supplier information reviewed.
Aspiration hazard	Not applicable to a solid powder.

Section 12: Ecological Information

Ecotoxicity	Product-specific aquatic toxicity data are insufficient in the sources used here to assign an environmental hazard classification.
Persistence / degradability	No adequate product-specific data identified for this SDS.
Bioaccumulative potential	No adequate product-specific data identified for this SDS.
Mobility in soil	No adequate product-specific data identified for this SDS.
Other adverse effects	Avoid uncontrolled release to the environment. Strong coloration/fluorescence may be visible at low concentrations even where toxicological significance is low.

Section 13: Disposal Considerations

Product waste	Dispose of unused product and contaminated cleanup material in accordance with applicable federal, state, and local regulations. Do not discharge concentrated dye to drains or waterways.
Packaging waste	Empty containers may retain powder and staining residue. Clean appropriately before recycling or disposal. Do not reuse contaminated packaging for food or pharmaceutical purposes.

Section 14: Transport Information

Mode	UN Number	Proper Shipping Name	Hazard Class	Packing Group
U.S. DOT	Not regulated as dangerous goods based on principal supplier SDS reviewed	Not applicable	Not applicable	Not applicable
TDG	Not regulated based on principal supplier information reviewed	Not applicable	Not applicable	Not applicable

IMDG	Not regulated based on principal supplier information reviewed	Not applicable	Not applicable	Not applicable
IATA/CAO	Not regulated based on principal supplier information reviewed	Not applicable	Not applicable	Not applicable

Protect packages from damage, moisture, contamination, and unnecessary heat during transport.

Section 15: Regulatory Information

OSHA Hazard Communication	Classified as serious eye irritation Category 2A under the OSHA Hazard Communication Standard based on current U.S. supplier SDS information.
TSCA	PubChem/EPA records identify CAS 2321-07-5 as ACTIVE under the U.S. TSCA Chemical Substance Inventory. Commercial-use status and any applicable restrictions should be verified for the specific supply chain and intended use.
SARA 313	A current Fisher/Acros U.S. SDS reports no SARA 313 reportable component for this product.
Clean Water Act / Clean Air Act	A current Fisher/Acros U.S. SDS reports these as not applicable for the substance as supplied.
State / local requirements	Users must determine the applicability of state and local requirements for the specific product grade, quantity, workplace, and use.

Section 16: Other Information

Revision date	2026-10-02
Initial preparation date	2026-10-02
SDS version	1.0
Supersedes	No previous version

Version	Date	Description
1.0	2026-10-02	Initial SDS creation for Fluorescein, CAS 2321-07-5, for non-food and non-drug applications.

Full text of hazard and precautionary statements

- H319 - Causes serious eye irritation.
- P264 - Wash thoroughly after handling.
- P280 - Wear protective gloves/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.

Key literature and data sources

- MilliporeSigma/Sigma-Aldrich Safety Data Sheet, Fluorescein, CAS 2321-07-5, Version 6.9, revision 2025-09-13.

- Fisher Scientific / Acros Organics Safety Data Sheet, Fluorescein, CAS 2321-07-5, revision 2025-12-19.
- PubChem, Fluorescein, CID 16850, National Library of Medicine, including physical-property and EPA TSCA records.
- Chemical Store product information supplied for this SDS: powder; red-brown appearance; dissolves in alcohol; fluorescent dye (oil soluble); all applications except foods and drugs.

Hazard classification method

Literature review and supplier-classification review. OSHA classification follows the current U.S. supplier SDS information for fluorescein, CAS 2321-07-5. Product-specific assay, additives, and impurities should be confirmed from the supplier specification/COA before commercial release.

Training advice

- Chemical hazard communication and SDS use.
- Eye protection and safe powder handling.
- Dust-control and housekeeping practices.
- Use of personal protective equipment.
- Spill response and waste handling.

Disclaimer

The information provided in this Safety Data Sheet is believed to be accurate and represents the best information currently available from the sources identified above and the product information supplied by Chemical Store. However, no warranty, express or implied, is made regarding its accuracy, completeness, or suitability for any particular purpose. The user is responsible for confirming the actual commercial grade, purity, additives, impurities, workplace conditions, and intended use, and for compliance with all applicable laws and regulations.

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