

SAFETY DATA SHEET
Grove Gold-L-Cysteine Fluorescent Red
Version 1.0 | Revision date: 14 August 2026

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

1.1 Product identifier

Product name	Grove Gold-L-Cysteine Fluorescent Red
Description	Aqueous L-cysteine-stabilised gold nanoform dispersion

1.2 Relevant identified uses and uses advised against

Identified use	Laboratory research material
Uses advised against	None identified

1.3 Details of the supplier

Manufacturer and supplier	Grove Nanomaterials Limited
Address	C/O Bevan Buckland LLP, Ground Floor, Cardigan House, Castle Court, Swansea Enterprise Park, Swansea, Wales, SA7 9LA, United Kingdom
Email	caitlin.crombie@grove-nano.com
Telephone	+44 29 2278 0187

1.4 Emergency telephone number

Emergency contact	+44 29 2278 0187
Availability	Available during office hours: Mon–Fri, 9:00 AM – 5:00 PM GMT

SECTION 2: Hazards identification

2.1 Classification of the mixture

Not classified as hazardous under the GHS classification criteria implemented by GB CLP, EU CLP, the US OSHA Hazard Communication Standard or Canadian WHMIS.

2.2 Label elements

No hazard pictogram, signal word, hazard statement or precautionary statement is required.

2.3 Other hazards

Contains gold in nanoform. No component is present at 0.1% w/w or above that is identified as PBT, vPvB or as having endocrine-disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Aqueous L-cysteine-stabilised gold nanoform dispersion. No hazardous ingredients requiring disclosure are present.

Component	Identifier	Concentration or function
Water	CAS 7732-18-5	Balance
Gold, nanoform	CAS 7440-57-5	0.05 mg/mL per unit OD
L-cysteine	CAS 52-90-4	Surface stabiliser; not classified as hazardous

The gold concentration of a supplied batch is 0.05 mg/mL multiplied by its optical density. The batch optical density is stated in the associated product documentation.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

Inhalation	Move to fresh air if mist has been inhaled. Seek medical advice if symptoms persist.
Skin contact	Wash with water.
Eye contact	Rinse cautiously with water for several minutes. Seek medical advice if irritation persists.
Ingestion	Rinse mouth. Seek medical advice if unwell.

4.2 Most important symptoms and effects, both acute and delayed

No specific acute or delayed effects are known.

4.3 Indication of immediate medical attention and special treatment

No specific treatment is required. Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Use extinguishing media appropriate to the surrounding fire.

5.2 Special hazards arising from the mixture

Aqueous, non-flammable dispersion. No specific hazardous combustion products are known.

5.3 Advice for firefighters

Use protective equipment appropriate to the surrounding fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid eye contact and aerosol formation.

6.2 Environmental precautions

Prevent uncontrolled release to drains and surface water.

6.3 Methods and material for containment and cleaning up

Absorb with inert material, transfer to a suitable waste container and rinse the affected area with water.

6.4 Reference to other sections

See Section 8 for exposure controls and Section 13 for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use normal laboratory hygiene. Avoid splashing and aerosol generation.

7.2 Conditions for safe storage, including incompatibilities

Keep in the original closed container. No special safety-related storage conditions or incompatibilities are identified.

7.3 Specific end use

Laboratory research.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

No occupational exposure limit applies to the supplied aqueous dispersion.

8.2 Exposure controls

Engineering controls	General laboratory ventilation.
Eye protection	Safety glasses where splashing is possible.
Hand protection	Protective gloves for repeated or prolonged contact.
Respiratory protection	Not required under normal handling. Avoid aerosol generation.
Environmental controls	Avoid uncontrolled environmental release.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Information
Physical state	Liquid colloidal dispersion
Colour	Milky white in ambient light; red photoluminescence under ultraviolet excitation
Odour	Not determined
Melting point/freezing point	Not determined
Boiling point or initial boiling point and range	Not determined

Property	Information
Flammability	Not classified as flammable
Lower and upper explosion limits	Not applicable to the aqueous dispersion
Flash point	Not applicable to the aqueous dispersion
Auto-ignition temperature	Not applicable
Decomposition temperature	Not determined
pH	Not determined
Kinematic viscosity	Not determined
Solubility	Dispersible in water
Partition coefficient n-octanol/water	Not applicable to the mixture
Vapour pressure	Not determined
Density and/or relative density	Not determined
Relative vapour density	Not applicable
Particle characteristics	Gold nanoparticles, approximately 4 nm

9.2 Other information

No additional safety-relevant physical or chemical information is available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No hazardous reactivity is known.

10.2 Chemical stability

Stable under recommended handling and storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions are known.

10.4 Conditions to avoid

No specific safety-related conditions are identified.

10.5 Incompatible materials

No specific safety-related incompatibilities are identified.

10.6 Hazardous decomposition products

None expected under normal handling and storage.

SECTION 11: Toxicological information

11.1 Information on hazard classes

Hazard class	Assessment
Acute toxicity	Classification criteria not met
Skin corrosion/irritation	Classification criteria not met
Serious eye damage/irritation	Classification criteria not met
Respiratory or skin sensitisation	Classification criteria not met
Germ-cell mutagenicity	Classification criteria not met
Carcinogenicity	Classification criteria not met
Reproductive toxicity	Classification criteria not met
STOT-single exposure	Classification criteria not met
STOT-repeated exposure	Classification criteria not met
Aspiration hazard	Classification criteria not met

The assessment is based on the known composition. No finished-product toxicological testing has been conducted.

11.2 Information on other hazards

No endocrine-disrupting properties or other toxicological hazards are identified for the supplied mixture.

SECTION 12: Ecological information

- 12.1 Toxicity**
No finished-product data are available. The mixture is not classified as hazardous to the aquatic environment.
- 12.2 Persistence and degradability**
No mixture data are available.
- 12.3 Bioaccumulative potential**
No mixture data are available.
- 12.4 Mobility in soil**
No mixture data are available.
- 12.5 PBT and vPvB assessment**
The mixture does not contain components identified as PBT or vPvB at 0.1% w/w or above.
- 12.6 Endocrine-disrupting properties**
The mixture does not contain components identified as endocrine disruptors at 0.1% w/w or above.
- 12.7 Other adverse effects**
No other adverse effects are identified.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods**
Dispose of unused product, contaminated absorbent and packaging in accordance with local requirements. Do not discharge to drains unless authorised.

SECTION 14: Transport information

Requirement	Transport status
14.1 UN number or ID number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	Not classified for transport
ADR/RID	Not regulated as dangerous goods
IMDG	Not regulated as dangerous goods
IATA/ICAO	Not regulated as dangerous goods
US DOT	Not regulated as hazardous material
Canadian TDG	Not regulated as dangerous goods
14.6 Special precautions	No precautions required by dangerous-goods transport regulations
14.7 Maritime transport in bulk	Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations

Jurisdiction	Regulatory position
Great Britain	Not classified as hazardous under GB CLP. The 16-section format follows UK REACH Annex II.
European Union/EEA	Not classified as hazardous under EU CLP. A locally issued SDS must carry the applicable supplier details and required language.
United States	Not classified as hazardous under OSHA Hazard Communication criteria. A locally issued SDS must carry US responsible-party details.
Canada	Not classified as a hazardous product under WHMIS criteria. A locally issued SDS must meet applicable Canadian supplier and language requirements.

- 15.2 Chemical safety assessment**
A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information

Classification method: ingredient-based assessment of the complete known formulation against the applicable GHS mixture-classification criteria.

Data sources: Grove Product Specification and Images, 28 July 2026; gold concentration supplied by Grove/Marixia as 0.05 mg/mL per OD; UK REACH Annex II; EU REACH Annex II as amended by Regulation (EU) 2020/878; US OSHA Hazard Communication Standard; Canadian WHMIS.

Regional issue copies must retain the technical content of this master and add the locally responsible supplier or importer details and required language where applicable.

ADR	Agreement concerning the International Carriage of Dangerous Goods by Road
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
PBT	Persistent, bioaccumulative and toxic
RID	Regulations concerning international carriage of dangerous goods by rail
STOT	Specific target organ toxicity
TDG	Transportation of Dangerous Goods
vPvB	Very persistent and very bioaccumulative
WHMIS	Workplace Hazardous Materials Information System

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