SAFETY DATA SHEET

GelRed® Nucleic Acid Gel Stain 10,000X in DMSO

SECTION 1: Identification

1.1. Product identifier

Trade name

GelRed® Nucleic Acid Gel Stain 10,000X in DMSO

Other names / Synonyms

41002: GelRed Nucleic Acid Stain, 10,000X in DMSO, 0.5 mL
41002-1: GelRed Nucleic Acid Stain, 10,000X in DMSO, 10 mL

Product no.

41002

Other means of identification

CAS No.: 67-68-5

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

Relevant identified uses of the substance or mixture

Use as laboratory reagent. For research use only. Not for food, drug, household, or cosmetic use.
Restricted to professional and industrial use.

Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet

Company and address

Biotium, Inc.
46117 Landing Parkway
CA 94538 Fremont
USA
T: +1 510-265-1027
Fax: +1 510-265-1352
http://www.biotium.com

E-mail

techsupport@biotium.com

SDS date

10/15/2026

SDS Version

3.0

Date of previous version

10/15/2026 (3.0)

1.4. Emergency telephone number

Contact the poison control at 1-800-222-1222 (24/7) or use the webPOISONCONTROL® (triage.webpoisoncontrol.org) to get specific guidance for your case
See also section 4 “First aid measures”.

SECTION 2: Hazard(s) identification

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.1. Classification of the substance or mixture

Flam. Liq. 4; H227, Combustible liquid

2.2. Label elements

Hazard pictogram(s)

Not applicable.

Signal word

Warning

Hazard statement(s)

Combustible liquid (H227)

Precautionary statement(s)

General

Not applicable.

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. (P210)

Response

In case of fire: Use water mist/carbon dioxide/alcohol-resistant foam to extinguish. (P370+P378)

Storage

Not applicable.

Disposal

Not applicable.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Product/substance	Identifiers	% w/w	Classification	Note
Dimethyl sulfoxide	CAS No.: 67-68-5	>99%	Flam. Liq. 4, H227	

3.2. Mixtures

Not applicable. This product is a substance.

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

Other information

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SECTION 4: First-aid measures

4.1. Description of first aid measures

General information

If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid).
Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

Skin contact

Remove contaminated clothing and shoes immediately. Ensure to wash exposed skin thoroughly with water and soap. Skin cleanser can be used. DO NOT use solvents or thinners.

Eye contact

If in eyes: Flush eyes with water or saline water (20-30 °C) for at least 5 minutes. Remove contact lenses. Seek medical assistance and continue flushing during transport.

Ingestion

If the person is conscious, rinse the mouth with water and stay with the person.
In case of malaise, seek medical advice immediately and bring the safety data sheet or label from the product. Do not induce vomiting, unless recommended by the doctor. Have the person lean forward with head down to avoid inhalation of or choking on vomited material.

Burns

Not applicable.

4.2. Most important symptoms and effects, both acute and delayed

Neurotoxic effects: This product contains organic solvents, which may cause adverse effects to the nervous system. Symptoms of neurotoxicity include: loss of appetite, headache, dizziness, ringing in ears, tingling sensations of skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer and may result in an increased absorption potential of other hazardous substances at the area of exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.
Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. Special hazards arising from the substance or mixture

Combustible liquid
In use may form flammable/explosive vapour-air mixture.
Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.
If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:
Sulphur oxides
Carbon oxides (CO / CO2)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the Poison Help Line on 1-800-222-1222 (24/7) in order to obtain further advice.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. Methods and material for containment and cleaning up

Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. Reference to other sections

See section 13 “Disposal considerations” on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage material

No specific requirements

Storage conditions

Keep container tightly closed in a dry and well-ventilated place.
Room Temperature. For Biotium products where the label indicates room temperature or RT, this implies storage in ambient conditions between 20°C and 30°C.
Protect from light.

Incompatible materials

No specific requirements

7.3. Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No substances are listed with a permissible exposure limit (ref: 29 CFR 1910.1000 TABLE Z-1)
No substances are listed with a permissible exposure limit CIB 66 [NIOSH 2014-100]

8.2. Exposure controls

Apply general control to prevent unnecessary exposure

General recommendations

Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Occupational exposure limits have not been defined for the substances in this product.

Appropriate technical measures

Apply standard precautions during use of the product. Avoid inhalation of vapours.

Hygiene measures

In between use of the product and at the end of the working day all exposed areas of the body must be washed thoroughly. Pay special attention to hands, forearms and face.

Measures to avoid environmental exposure

No specific requirements.

Individual protection measures, such as personal protective equipment

Generally

Use only protective equipment with a recognized certification mark, e.g. the UL mark.

Respiratory Equipment

Type	Class	Colour	Standards
Not required; except in case of aerosol formation.			N/A



Skin protection

Recommended	Type/Category	Standards
No specific requirements.	-	-

Hand protection

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.				

Eye protection

Type	Standards	
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).	EN166	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Color

No data available

Odor

No data available

Odor threshold (ppm)

No data available

pH

No data available

Density (g/cm^3)

No data available

Relative density

No data available

Kinematic viscosity

No data available

Particle characteristics

No data available

Phase changes

Melting point/freezing point (°F)

No data available

Softening point/range (°F)
Does not apply to liquids.
Boiling point (°F)
No data available
Vapor pressure
No data available
Relative vapor density
No data available
Evaporation rate (n-butylacetate = 100)
No data available
Decomposition temperature (°F)
No data available
Data on fire and explosion hazards
Flash point (°F)
No data available
Flammability (°F)
No data available
Auto-ignition temperature (°F)
No data available
Explosion limits (% v/v)
No data available
Solubility
Solubility in water
Soluble in water
n-octanol/water coefficient (LogKow)
No data available
Solubility in fat (g/L)
No data available
9.2. Other information
Other physical and chemical parameters
No data available.
Oxidizing properties
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
No data available.
10.2. Chemical stability
The product is stable under the conditions, noted in section 7 “Handling and storage”.
10.3. Possibility of hazardous reactions, including those associated with foreseeable emergencies
None known.
10.4. Conditions to avoid
Do not expose to any forms of heat (e.g. solar radiation). May lead to excess pressure.
Heat, flames and sparks.
10.5. Incompatible materials
No specific requirements
10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Product/substance	Dimethyl sulfoxide
Test method:	OECD 401
Species:	Rat, male/female
Route of exposure:	Oral
Test:	LD50
Result:	28,300 mg/kg

Product/substance	Dimethyl sulfoxide
Test method:	OECD 403
Species:	Rat, male/female
Route of exposure:	Inhalation
Test:	LC50
Result:	4h - > 5.33 mg/L

Product/substance	Dimethyl sulfoxide
Species:	Rat, male/female
Route of exposure:	Dermal
Test:	LD50
Result:	40,000 mg/kg

Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product/substance	Dimethyl sulfoxide
Test method:	OECD 404
Species:	Rabbit
Description:	Slight irritation 4 h

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Product/substance	Dimethyl sulfoxide
Test method:	OECD 405
Species:	Rabbit
Description:	Slight irritation - 24 h

Based on available data, the classification criteria are not met.

Respiratory sensitisation

Product/substance	Dimethyl sulfoxide
Test method:	OECD 406
Species:	Guinea pig
Description:	Negative

Product/substance	Dimethyl sulfoxide
Test method:	OECD 429
Species:	Mouse
Description:	Negative

Based on available data, the classification criteria are not met.

Skin sensitisation

Product/substance	Dimethyl sulfoxide
Test method:	OECD 406
Species:	Guinea pig
Description:	Negative

Product/substance	Dimethyl sulfoxide
Test method:	OECD 429
Species:	Mouse
Description:	Negative

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Product/substance	Dimethyl sulfoxide
Test method:	OECD 471
Species:	S. typhimurium
Description:	Negative

Product/substance	Dimethyl sulfoxide
Test method:	OECD Test Guideline 479
Species:	Chinese Hamster Ovary (CHO)
Description:	Negative

Product/substance	Dimethyl sulfoxide
Test method:	OECD 473
Species:	Chinese Hamster Ovary (CHO)
Description:	Negative

Product/substance	Dimethyl sulfoxide
Test method:	OECD 474
Species:	Rat
Description:	Negative

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Long term effects

Neurotoxic effects: This product contains organic solvents, which may cause adverse effects to the nervous system. Symptoms of neurotoxicity include: loss of appetite, headache, dizziness, ringing in ears, tingling sensations of skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer and may result in an increased absorption potential of other hazardous substances at the area of exposure.

Other information

None known.

SECTION 12: Ecological information

12.1. Toxicity

Product/substance	Dimethyl sulfoxide
Test method:	OECD 203
Species:	Fish, Danio rerio
Duration:	96 hours
Test:	LC50
Result:	25,000 mg/L

Product/substance	Dimethyl sulfoxide
Test method:	OECD 202
Species:	Daphnia
Duration:	48 hours
Test:	EC50
Result:	24,600 mg/L

Product/substance	Dimethyl sulfoxide

Test method:	OECD 201
Species:	Algae, Pseudokirchneriella subcapitata
Duration:	72 hours
Test:	ErC50
Result:	17,000 mg/L

Product/substance	Dimethyl sulfoxide
Test method:	ISO 8192
Species:	Bacteria
Compartment:	Activated Sludge Plant
Duration:	30 min.
Test:	EC50
Result:	10 - 100 mg/L

Based on available data, the classification criteria are not met.

12.2. Persistence and degradability

Based on available data, the classification criteria are not met.

12.3. Bioaccumulative potential

Product/substance	Dimethyl sulfoxide
Conclusion:	Potential for bioaccumulation
Test:	OECD Test Guideline 301D

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. Other adverse effects

This product contains substances with the potential of bioaccumulation resulting in the risk of accumulation in the food chain. Bioaccumulative substances are concentrated in adipose tissue and are not easily secreted.

SECTION 13: Disposal considerations

RCRA Hazardous waste ("P" and "U" list) (40 CFR 261)

None of the components are listed

Specific labelling

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

	14.1 UN / ID ***	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
DOT	-	-	-	-	-	-
IMDG	-	-	-	-	-	-
IATA	-	-	-	-	-	-

* Packing group
** Environmental hazards
*** UN number or ID number

Additional information

Not dangerous goods according to DOT, IATA and IMDG.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.2. U.S. Federal regulations

TSCA (the non-confidential portion)

Dimethyl sulfoxide is listed

Clean Air Act

None of the components are listed

EPCRA Section 302

None of the components are listed

EPCRA Section 304

None of the components are listed

EPCRA section 313

None of the components are listed

CERCLA

None of the components are listed

Hazardous chemical inventory reporting

15.3. State regulations

California / Prop. 65

None of the components are listed

Massachusetts / Right To Know Act

None of the components are listed

New Jersey / Right To Know Act

Dimethyl sulfoxide / Substance number: 4145

Dimethyl sulfoxide is on the Special Health Hazard Substance List

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New York / Right To Know Act

None of the components are listed

Pennsylvania / Right To Know Act

None of the components are listed

15.4. Restrictions for application

Restricted to professional users.

15.5. Demands for specific education

No specific requirements.

15.6. Additional information

Not applicable.

15.7. Chemical safety assessment

No

15.8. Sources

OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: Other information

Full text of H-phrases as mentioned in section 3

H227, Combustible liquid

The full text of identified uses as mentioned in section 1

None known.

Abbreviations and acronyms

ACGIH = American Conference of Governmental Industrial Hygienists
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service
CERCLA = Comprehensive Environmental Response Compensation and Liability Act
DOT = Department of Transportation
EINECS = European Inventory of Existing Commercial chemical Substances
EPCRA = Emergency Planning and Community Right-To-Know Act
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HCIS = Hazardous Chemical Information System
HNOC = Hazards Not Otherwise Classified
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
LogKow = logarithm of the n-octanol/water coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NFPA = National Fire Protection Association
NIOSH = National Institute for Occupational Safety and Health
OECD = Organisation for Economic Co-operation and Development
OSHA = Occupational Safety and Health Administration
PBT = Persistent, Bioaccumulative and Toxic
RCRA = Resource Conservation and Recovery Act
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SARA = Superfund Amendments and Reauthorization Act
SCL = A specific concentration limit.
STEL = Short-term exposure limits
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TSCA = The Toxic Substances Control Act
TWA = Time weighted average
UN = United Nations
UVCB = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

Additional information

Not applicable.
The information provided above is believed to be correct to our best knowledge, but does not purport to be all inclusive, and shall be used only as a guide. This material is sold for research purposes only and is not required to appear on the TSCA inventory. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals. Biotium shall not be held liable for any damage resulting from handling or contact with the above product.

The safety data sheet is validated by

Julianne Davis

SDS date

10/15/2026

Date of previous version

10/15/2026 (3.0)

Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.
The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.
It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.
Country-language: US-en