

SAFETY DATA SHEET

according to US Regulation 29 CFR 1910.1200 and the Canadian HPA

GelStar® Nucleic Acid Gel Stain

Version 4.0

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SECTION 1. IDENTIFICATION

Product name : GelStar® Nucleic Acid Gel Stain
Material number : 50535

Manufacturer or supplier's details

Company : Lonza Ltd
Muenchensteinerstrasse 38
CH-4002 Basel
Switzerland
Business Telephone +41 61 316 81 11

Lonza Rockland Inc.
191 Thomaston Street
Rockland, ME 04841-2994
USA
Business Telephone: 1-207-594-3400

Lonza Walkersville Inc.
8830 Biggs Ford Road
Walkersville, MD 21793-0127
USA
Business Telephone 1-301-898-7025

E-mail address : prodinfo@lonza.com
Emergency telephone number : +41 61 313 94 94 (24h)

Recommended use of the chemical and restrictions on use

Recommended use : For research use only.
Restrictions on use : NOT FOR USE IN GMP MANUFACTURING, NOR HUMAN OR ANIMAL IN VIVO OR DIAGNOSTIC USE.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4

GHS label elements

Signal word : Warning
Hazard statements : H227 Combustible liquid.
Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:

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

Storage:

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

Disposal:

P501 Dispose of contents/container in accordance with local regulation.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name / Synonyms	CAS-No.	Concentration (% w/w)
Dimethyl sulfoxide ;DMSO	67-68-5	99.9999

SECTION 4. FIRST AID MEASURES

- If inhaled : Remove person to fresh air. If signs/symptoms continue, get medical attention.
- In case of skin contact : After contact with skin, wash immediately with plenty of soap and water.
Get medical attention if irritation develops and persists.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- If swallowed : Do not induce vomiting without medical advice.
Immediately give large quantities of water to drink.
Call a physician immediately.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : No information available.
- Notes to physician : No information available.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Dry powder
Water spray
Foam
- Hazardous combustion products : Carbon oxides (COx)
Sulphur oxides (SOx)
- Further information : Use water spray to cool unopened containers.

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Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use respirator when performing operations involving potential exposure to vapour of the product.

Environmental precautions : Prevent product from entering drains.

Methods and materials for containment and cleaning up : Wipe up with absorbent material (e.g. cloth, fleece).
Do not flush into surface water or sanitary sewer system.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Highly flammable.
Keep away from sources of ignition - No smoking.
Take precautionary measures against static discharges.

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.

Conditions for safe storage : Keep frozen or refrigerated.
Keep container closed when not in use.
Remove all sources of ignition.
To maintain product quality, do not store in heat or direct sunlight.

Further information on storage conditions : Store containers in compliance with the most recent NFPA Code (NFPA 30). Ground all containers prior to pouring.

Technical measures/Precautions : Store containers in compliance with the most recent NFPA Code (NFPA 30). Ground all containers prior to pouring.

Recommended storage temperature : -4 °F / -20 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Dimethyl sulfoxide	67-68-5	TWA	250 ppm	US WEEL

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection

Remarks : Wear suitable gloves. Take note of the information given by

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	the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
Eye protection	: Tightly fitting safety goggles
Skin and body protection	: Choose body protection according to the amount and concentration of the dangerous substance at the work place. No special protective equipment required.
Hygiene measures	: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: colourless
Odour	: No data available
Odour Threshold	: No data available
pH	: No data available
Melting point/freezing point	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: 192 °F / 89 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: 0.56 hPa
Relative vapour density	: No data available
Relative density	: No data available
Density	: 1.101 g/cm ³
Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available

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Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Stable under normal conditions.

Conditions to avoid : No data available

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : No decomposition if stored normally.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation

Remarks : No data available

Serious eye damage/eye irritation

Remarks : No data available

Respiratory or skin sensitisation

Remarks : No data available

Germ cell mutagenicity

Genotoxicity in vitro : Remarks: No data available

Carcinogenicity

Remarks : No data available

IARC

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

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

Effects on fertility : Remarks: No data available

STOT - single exposure

Remarks : No data available

STOT - repeated exposure

Remarks : No data available

Further information

Remarks : No data is available on the product itself.

The following toxicological data refer to:

Dimethyl sulfoxide(CAS-No.: 67-68-5)

Acute toxicity

Acute oral toxicity : LD50 (Rat): 14,500 mg/kg

Acute inhalation toxicity : LC50 (Rat): 40250 ppm
Exposure time: 4 h
Test atmosphere: dust/mist

LC50 (Rat): 5,330 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, male and female): 40,000 mg/kg

Skin corrosion/irritation

Species : Rabbit
Exposure time : 4 h
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : Mild skin irritation
GLP : yes

Serious eye damage/eye irritation

Species : Rabbit
Result : Mild eye irritation
Exposure time : 24 h
Assessment : No eye irritation
Method : OECD Test Guideline 405

Respiratory or skin sensitisation

Test Type : Maximisation Test

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Species : Guinea pig
 Assessment : Did not cause sensitisation on laboratory animals.
 Method : OECD Test Guideline 406
 Result : not sensitizing

Germ cell mutagenicity

Genotoxicity in vitro : Test Type: Ames test
 Species: Salmonella
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative

: Test Type: Chromosome aberration test in vitro
 Species: Chinese hamster ovary cells
 Metabolic activation: yes
 Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
 Species: Rat
 Application Route: ip
 Dose: 200, 1000 and 5000 mg/kg/d
 Method: OECD Test Guideline 474
 Result: negative
 GLP: yes

Carcinogenicity

Remarks : No data available

Reproductive toxicity

Effects on fertility : Species: Rat
 Application Route: Oral
 General Toxicity - Parent: NOAEL: 1,000 mg/kg body weight
 General Toxicity F1: NOAEL: 1,000 mg/kg body weight
 Early Embryonic Development: NOAEL: 1,000 mg/kg body weight

Effects on foetal development : Species: Rat
 Application Route: Oral
 Method: OECD Test Guideline 414
 Result: No adverse effects

STOT - single exposure

Remarks : No data available

Exposure routes : inhalation (vapour)
 Target Organs : Respiratory system

STOT - repeated exposure

Remarks : No data available

Repeated dose toxicity

Species : Rat
 NOAEC : 47.5 mg/m³
 Application Route : Inhalation
 Target Organs : Liver, Lungs

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Further information

Remarks : Can be absorbed through skin.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxicity to fish : Remarks: No data available

Persistence and degradability

Biodegradability : Result: no data available

Bioaccumulative potential

Bioaccumulation : Remarks: No data available

Components:**Dimethyl sulfoxide:**

Partition coefficient: n-octanol/water : log Pow: -1.35 (20 °C)

Mobility in soil

Distribution among environmental compartments : Remarks: No data available

Other adverse effects

Ozone-Depletion Potential : Regulation: US. EPA Clean Air Act (CAA) Section 602 Ozone-Depleting Substances (40 CFR 82, Subpt. A, App A & B)
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Contact waste disposal services.
Dispose of in accordance with local regulations.

Contaminated packaging : Dispose of as unused product.
Do not burn, or use a cutting torch on, the empty drum.

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SECTION 14. TRANSPORT INFORMATION**DOT**

UN number : NA 1993
Proper shipping name : Combustible liquid, n.o.s.
(Dimethyl sulfoxide)
Transport hazard class(es) : CBL
Packing group : III
Labels : NONE
**Emergency Response Guidebook
Number** : 128
Environmental hazards : no

TDG

: Not dangerous goods

UN number : Not applicable
Proper shipping name : Not applicable
Transport hazard class : Not applicable
Packing group : Not applicable

IATA

Not dangerous goods

UN number : Not applicable
Proper shipping name : Not applicable
Transport hazard class : Not applicable
Packing group : Not applicable

IMDG

Not dangerous goods

UN number : Not applicable
Proper shipping name : Not applicable
Transport hazard class(es) : Not applicable
Packing group : Not applicable

ADR

: Not dangerous goods

UN number : Not applicable
Proper shipping name : Not applicable
Transport hazard class : Not applicable
Packing group : Not applicable

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RID	:	Not dangerous goods
UN number	:	Not applicable
Proper shipping name	:	Not applicable
Transport hazard class	:	Not applicable
Packing group	:	Not applicable
Special precautions for user	:	none
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	:	Not applicable

SECTION 15. REGULATORY INFORMATION

TSCA SNUR/Export notifications

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

See above: SECTION 2. Hazard Identification-GHS Classification

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.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

Components	CAS-No.	Concentration
Dimethyl sulfoxide	67-68-5	>= 90 - <= 100 %

This product does not contain any VOC exemptions listed under the U.S. Clean Air Act Section 450.

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Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

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

Pennsylvania Right To Know

Components	CAS-No.
Dimethyl sulfoxide	67-68-5

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Canadian lists

No substances are subject to a Significant New Activity Notification.

NPRI

Canadian National Pollutant Release Inventory (NPRI): No component is listed on NPRI.

The product components have the following inventory status:

TSCA : This product is solely for research and development purposes only and may not be used, processed or distributed for a commercial purpose. This material may only be handled by technically qualified individuals.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)

AiIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dan-

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gerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

GelStar is a registered trademark of DuPont Nutrition USA, Inc.
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Date format : yyyy/mm/dd

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