

Section 1: Information

1. Product Identification

1.1. Name: Total Cell Nuclear Red

1.2. Catalog Number:

1.2.1. ViaStain™ Total Cell Nuclear Red, Cat. No.: CS1-V0009-1, 100 µL

1.2.2. ViaStain™ Total Cell Nuclear Red, Cat. No.: CS1-V0009-S, 20 µL

1.3. Supplier

Nexcelom Bioscience, LLC.

360 Merrimack St,

Lawrence, MA 01843

Phone Number: 1(978) 327-5340

Hours of Operation: 9am-5pm EST

2. Recommended Use

2.1. Total Cell Nuclear Red should only be used as a dye for labeling nuclear DNA

2.2. Total Cell Nuclear Red is not intended to be used as a human or animal diagnostic or as a therapeutic reagent

2.3. Do not use Total Cell Nuclear Red for any other purposes

Section 2: Hazard Identification

1. Hazard Classification

1.1. H227 Combustible liquid Category: 4

2. Label Elements

2.1. Signal Words: Warning

2.2. Hazard Statements: H227 Combustible liquid

Precautionary Statements: P210 Keep away from heat/sparks/open flames/hot surfaces

P280 Wear protective gloves/eye protection/face protection

P370 + P378 In the event of a fire: Use dry sand, dry chemical, or alcohol resistant foam to extinguish

P403 + P235 Store in a well-ventilated place and keep cool

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

2.3. Supplemental Hazard Statements: None

2.4. Pictograms:

2.4.1. None

2.5. Other Hazards Which Do Not Result in Classification

2.5.1. Dimethyl sulfoxide is readily absorbed through the skin and may carry such materials into the body

2.5.2. Hazardous Materials Identification System Classification

Health Hazard: 1
 Chronic Health Hazard: *
 Flammability: 2
 Physical Hazard: 0

2.5.3. National Fire Protection Association Rating

Health Hazard: 0
 Fire: 2
 Reactivity Hazard: 0
 Instability: 0

Section 3: Composition and Information on Ingredients

1. Substances

Common Name	Molecular Formula and Weight	CAS Number/ IUPAC Name	EC- Number	Impurities and Stabilizers	Percentage
Dimethyl sulfoxide	C ₂ H ₆ OS (78.13 g/mol)	67-68-5	200-664-3	No Information Available	90% - 99.9 %
Total Cell Nuclear Red	No Information Available	No Information Available	No Information Available	No Information Available	0.1 % - 10 %

Section 4: First-aid Measures

1. Always remove contaminated personnel away from the hazardous area and to a safe area
2. Most Important Symptoms and Effects
 - 2.1. See general first aid measures below
 - 2.2. See Section 11
3. Indication of Immediate Medical Attention or Necessary Special Treatment
 - 3.1. No information available
4. Medical Professionals
 - 4.1. If medical advice or attention is required, present them with this safety data sheet first
 - 4.2. Notes to Physician: Treat symptomatically
5. Inhalation
 - 5.1. Place person in fresh air and in a comfortable position for breathing
 - 5.2. Seek medical advice or attention
6. Skin Contact

- 6.1. Remove any contaminated clothing, and wash area with soap and plenty of water for 15 minutes
- 6.2. Wash clothes before re-use
- 6.3. Seek medical advice or attention
7. Eye Contamination
 - 7.1. Flush open eyes for 15 minutes
 - 7.2. If contacts are present, remove contacts after first 15-minute wash and flush for an additional 15 minutes
 - 7.3. Seek medical advice or attention if irritation persists
8. Ingestion
 - 8.1. Do not induce vomiting
 - 8.2. Drink plenty of water
 - 8.3. Never give an unconscious person anything by mouth
 - 8.4. Seek medical advice or attention

Section 5: Fire-fighting Measures

1. Suitable Extinguishing Media
 - 1.1. Carbon dioxide
 - 1.2. Dry chemical extinguishers
 - 1.3. Foam extinguishers
 - 1.4. Water Spray
2. Not Suitable Extinguishing Media
 - 2.1. No information available
3. Specific Hazards Arising from the Chemical
 - 3.1. Carbon oxides, Sulphur oxides, poisonous gas
4. Special Protective Actions for Fire-fighters
 - 4.1. Wear a self-contained breathing apparatus for firefighting if necessary
5. Further Information
 - 5.1. Use water spray to cool unopened containers

Section 6: Accidental Release Measures

1. Personal Precautions
 - 1.1. Use proper personal protective equipment
 - 1.2. Avoid breathing vapors, mists, or gases
 - 1.3. Remove all sources of ignition
 - 1.4. Vapors can accumulate to explosive concentrations in low areas
 - 1.5. See Section 8
2. Protective Equipment
 - 2.1. See Section 8
3. Emergency Procedures
 - 3.1. See Section 5

4. Accidental Spills or Release of the Product
 - 4.1. Wear proper protective equipment while cleaning up spills
 - 4.2. Remove ignition sources and provide adequate ventilation
 - 4.3. Contact emergency personnel if required
5. Emergency Responders
 - 5.1. Personal Protective Equipment
 - 5.1.1. See Section 5
6. Environmental Precautions
 - 6.1. Prevent further leakage or spillage if safe to do so
 - 6.2. Do not let product enter drains
7. Methods and Materials for Containment and Cleaning
 - 7.1. Drains
 - 7.1.1. Do not let product enter drains
 - 7.2. Capping procedures
 - 7.2.1. No information available
 - 7.3. Neutralization techniques
 - 7.3.1. No information available
 - 7.4. Decontamination techniques
 - 7.4.1. No information available
 - 7.5. Absorbent Materials
 - 7.5.1. Inert absorbent materials
 - 7.6. Cleaning Techniques
 - 7.6.1. Can collect with wet brush and place in a suitable, closed container for disposal according to local regulations (see Section 13)
 - 7.6.2. Contain spillage
 - 7.6.3. Soak up with inert absorbent material
 - 7.6.4. Keep in a suitable closed container
 - 7.6.5. For disposal see Section 13
 - 7.7. Vacuuming Techniques
 - 7.7.1. Can collect using an electrically protected vacuum cleaner into a suitable, closed container for disposal according to local regulations (see Section 13)
 - 7.8. Special Equipment
 - 7.8.1. No information available

Section 7: Handling and Storage

1. Safe Handling
 - 1.1. Avoid inhalation of vapors or mists
 - 1.2. Keep away from sources of ignition – no smoking
 - 1.3. Take measures to prevent the buildup of electrostatic charge
2. Incompatible Substances
 - 2.1. No information available

3. Operations and Conditions to Avoid
 - 3.1. Any heat or fire sources
4. General Good Hygiene Practices
 - 4.1. No eating, drinking or smoking in work areas
 - 4.2. Wash hands after breaks and at the end of the work day
 - 4.3. Remove contaminated clothing and protective equipment before entering eating areas
5. Conditions for Safe Storage
 - 5.1. Keep container tightly closed in a dry and well-ventilated place
 - 5.2. Store under inert gas: hygroscopic
 - 5.3. Store at 4 °C
 - 5.4. Storage class (TRGS 510): Combustible liquids
 - 5.5. Conditions to avoid
 - 5.5.1. Heat and flames
 - 5.6. Environmental Effects to avoid
 - 5.6.1. No information available
6. How to maintain product integrity
 - 6.1. Keep container tightly closed in a dry and well-ventilated place
 - 6.2. Keep in a dry place
7. Engineering Advice
 - 7.1. No information available

Section 8: Exposure Controls and Personal Protection

1. National Exposure Limits
 - 1.1. USA Workplace Environmental Exposure Levels (WEEL) –
 - 1.1.1. Dimethyl sulfoxide (CAS No. 67-68-5): Value TWA
 - 1.1.1.1. Control parameters 250.00 ppm
 - 1.2. American Conference of Government Industrial Hygienists (ACGIH)- No information available
 - 1.3. Threshold Limit Values (TLV)- No information available
 - 1.4. International Agency for Research on Cancer (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
 - 1.5. National Toxicology Program (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
 - 1.6. Occupational Safety and Health Association (OSHA)- No component of this product present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA
2. Biological Limits
 - 2.1. No information available
3. Appropriate Engineering Controls

- 3.1. Handle with good industrial hygiene and safety practices
- 3.2. Wash hands before breaks and at the end of the workday
- 3.3. Have appropriate showers, eye wash stations, and ventilation systems installed and up to code
- 4. Proper Personal Protective Equipment
 - 4.1. Always use good occupational hygiene practices
 - 4.1.1. Do not eat, drink, or smoke while using this product
 - 4.1.2. Wash hands before breaks and at the end of the work day
 - 4.1.3. Regularly clean equipment, work area, and clothing
 - 4.2. Eye and face protection
 - 4.2.1. Use safety glasses with side-shields conforming to EN166 or equipment for eye protection tested and approved under appropriate government standards such as NIOSH (U.S.A.) or EN 166 (E.U.)
 - 4.3. Skin protection
 - 4.3.1. Gloves must be inspected prior to use
 - 4.3.2. Nitrile gloves are not recommended due to some having a 5 minutes breakthrough time
 - 4.3.3. Use proper removal technique (without touching glove's outer surface) to avoid skin contact with this product
 - 4.3.4. Dispose of contaminated gloves after use in accordance with applicable laws (outlined in Section 13) and good laboratory practices
 - 4.4. Respiratory Protection
 - 4.4.1. No information available
 - 4.5. Thermal Hazards
 - 4.5.1. Avoid heat
- 5. Special Equipment
 - 5.1. No information available

Section 9: Physical and Chemical Properties

Property	Data
Physical State	Liquid
Color	Dark Red
Odor	Sulphurous
Odor Threshold	No information available
Freezing Point	No information available
Melting Point	Melting point range: 16-19 °C (61-66 °F)
Boiling point or Initial Boiling Point/Range	189 °C (372 °F)
Flammability	No information available
Lower and Upper Explosion Limit/Flammability Limit	Upper Explosion Limit: 42 % Lower Explosion Limit: 3.5 %
Flash Point	87 °C (189 °F) – Closed cup- ASTM D 93

Auto-Ignition Temperature	300-302 °C (572-576 °F)
Explosive Properties	No information available
Decomposition Temperature	> 190 °C (> 374 °F)
Oxidizing Properties	No information available
pH	Not applicable
Viscosity	No information available
Solubility	Water Solubility – Completely miscible (- 0.12 – 1.2 h at 30 °C (86 °F) Alcohol – Soluble Diethyl ether - Soluble
Partition Coefficient n-octanol/water (Log value)	log Pow: -1.35
Vapor Pressure	0.55 h Pa (0.41 mmHg) at 20 °C (68 °F) 4 h Pa (3 mmHg) at 50 °C (122 °F)
Density and/or Relative Density	1.1 g/mL
Relative Vapor Density	2.70 - (Air = 1.0)
Particle Characteristics	Not applicable
Evaporation Rate	No information available
Surface Tension	43.5 mN/m at 20 °C (68 °F)

Section 10: Stability and Reactivity

1. Reactivity
 - 1.1. No information available
2. Chemical Stability
 - 2.1. Stable under recommended storage conditions
3. Possibility of Hazardous Reactions
 - 3.1. No information available
4. Conditions to avoid
 - 4.1. Heat, flames, and sparks
5. Incompatible Materials
 - 5.1. Acid chlorides, Phosphorus halides, strong acids, strong oxidizing agents, strong reducing agents
6. Hazardous Decomposition Products
 - 6.1. Formed under fire: See Section 5
 - 6.2. Other decomposition products: No information available

Section 11: Toxicological Information

1. Acute Toxicity: Dimethyl sulfoxide
 - 1.1. Oral LD50 - Rat – 14,500 mg/kg
 - 1.2. Inhalation LC50 - Rat – 4h – 40250 ppm
 - 1.3. Dermal LD50 - Rabbit - >5,000 mg/kg
2. Skin Corrosion/Irritation

- 2.1. Mild skin irritation
3. Serious Eye Damage/Irritation
 - 3.1. No information available
4. Respiratory or Skin Sensitization
 - 4.1. No information available
5. Germ Cell Mutagenicity
 - 5.1. Mouse
 - 5.1.1. Lymphocyte - Cytogenic analysis
 - 5.1.2. Lymphocyte - Mutation in mammalian somatic cells
 - 5.1.3. DNA damage
 - 5.2. Rat
 - 5.2.1. Lymphocyte - Cytogenic analysis
6. Carcinogenicity
 - 6.1. Rat
 - 6.1.1. Oral – Tumorigenic: Equivocal tumorigenic agent by RTECS criteria
 - 6.1.2. Skin, and Appendages:
 - 6.1.3. Other: Tumors
 - 6.2. Mouse
 - 6.2.1. Oral – Tumorigenic: Equivocal tumorigenic agent by RTECS criteria
 - 6.2.2. Leukemia, Skin, and Appendages:
 - 6.2.3. Other: Tumors
 - 6.3. IARC
 - 6.3.1. 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
7. Reproductive Toxicity
 - 7.1. Rat – Effects on Fertility
 - 7.1.1. Intraperitoneal
 - 7.1.1.1. Abortion
 - 7.1.1.2. Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants)
 - 7.1.2. Subcutaneous
 - 7.1.2.1. Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants)
 - 7.1.2.2. Litter size (e.g., number of fetuses per litter; measured before birth)
 - 7.2. Mouse – Effects on Fertility
 - 7.2.1. Oral
 - 7.2.1.1. Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea)
 - 7.3. Mouse – Effects on Embryo or Fetus
 - 7.3.1. Oral
 - 7.3.1.1. Fetotoxicity (except death, e.g., stunted fetus)
 - 7.3.2. Intraperitoneal

- 7.3.2.1. Fetotoxicity (except death, e.g., stunted fetus)
- 7.3.3. Specific Developmental Abnormalities
 - 7.3.3.1. Musculoskeletal system
- 8. Specific Target Organ Toxicity- Single Exposure
 - 8.1. No information available
- 9. Specific Target Organ Toxicity – Repeated Exposure
 - 9.1. No information available
- 10. Aspiration Hazard
 - 10.1. No information available
- 11. Other Information
 - 11.1. Registry of Toxic Effects of Chemical Substances
 - 11.1.1. PV6210000 – Dimethyl sulfoxide
 - 11.2. Exposure to large amounts can cause: redness of skin, itching, burning, sedation, headache, nausea, and dizziness
 - 11.3. Eye disease – Based on human evidence
 - 11.4. Likely Routes of Exposure
 - 11.4.1. Skin
 - 11.4.2. Eyes
 - 11.4.3. Inhalation

Section 12: Ecological Information

- 1. Ecotoxicity: May cause long-lasting, harmful effects to aquatic life
 - 1.1. Fish
 - 1.1.1. No information available
 - 1.2. Crustaceans
 - 1.2.1. No information available
 - 1.3. Algae
 - 1.3.1. No information available
 - 1.4. Other Aquatic Plants
 - 1.4.1. No information available
 - 1.5. Soil Micro- and Macro-Organisms
 - 1.5.1. No information available
 - 1.6. Birds
 - 1.6.1. No information available
 - 1.7. Bees
 - 1.7.1. No information available
 - 1.8. Plants
 - 1.8.1. No information available
 - 1.9. Inhibition of Micro-Organisms
 - 1.9.1. No information available
- 2. Persistence and Degradability

- 2.1. No information available
- 3. Bioaccumulative Potential
 - 3.1. No information available
- 4. Mobility in Soil
 - 4.1. No information available
- 5. Other Adverse Effects
 - 5.1. Environmental Fate
 - 5.1.1. No information available
 - 5.2. Ozone Depletion Potential
 - 5.2.1. No information available
 - 5.3. Photochemical Ozone Creation Potential
 - 5.3.1. No information available
 - 5.4. Endocrine Disrupting Potential and/or Global Warming Potential
 - 5.4.1. No information available

Section 13: Disposal Considerations

- 1. Disposal Methods
 - 1.1. Please take precautions to generate as little waste as possible while handling and using this product
 - 1.2. Do not dispose of contaminated materials in the sewage
 - 1.3. Packaging, containers, solutions and any material that may have come in contact with this product should be considered as hazardous as the product itself
 - 1.4. Disposal of this product and any of its by-products should be in compliance with all applicable local, regional and national/federal biological hazardous waste disposal regulations
- 2. Disposal Containers and methods
 - 2.1. See Section 6

Section 14: Transport Information

- 1. DOT (US)
 - 1.1. NA-Number: 1993
 - 1.2. Class: None
 - 1.3. Packing Group: III
 - 1.4. Proper Shipping Name: Combustible liquid, n.o.s (Dimethyl sulfoxide)
 - 1.5. Reportable Quantity: No information to report
 - 1.6. Poison Inhalation Hazard: No information available

Section 15: Regulatory Information

- 1. States with Right to Know Components
 - 1.1. Massachusetts Right to Know Components
 - 1.1.1. No components subject to reporting

- 1.2. Pennsylvania Right to Know Components
 - 1.2.1. Dimethyl sulfoxide CAS-No. 67-68-5 Revision Date: 2007/03/01
- 1.3. New Jersey Right to Know Components
 - 1.3.1. Dimethyl sulfoxide CAS-No. 67-68-5 Revision Date: 2007/03/01
- 1.4. California Prop. 65 Components
 - 1.4.1. This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm
2. No regulatory information to report (29 CFR 1910.1200(g)(2))

Section 16: Other Information

1. Literary references
 - 1.1. No information available

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Date Revised: 29, January 2019

Revision Number: C

1. Removed respirator mention

END OF SDS