

## Section 1 - PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier:

Catalog Number: R0-00008, R0-00009  
Product Description: ViaDye™ Fixable dead cell dyes

### Product Details and Usage:

Use as laboratory reagent. For research use only. Not for food, drug, household, or cosmetic use.

### Supplier:

Cytek Biosciences  
46107 Landing Pkwy  
Fremont, CA 94538 U.S.A.  
Tel: (510) 657-0102

**Emergency Telephone Number:** +1 (510) 657-0102

**Fax:** +1 (510) 657-0151

**Telephone:** +1 (877) 922-9835 (toll-free)

### Preparation Information:

Cytek Biosciences Product Safety  
+1 (877) 922-9835 (toll-free)

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## Section 2 - HAZARDS IDENTIFICATION

### Emergency Overview:

No known OSHA hazards. Not a dangerous substance or mixture according to the Globally Harmonized System (GHS). Not classified as hazardous according to Regulation (EC) 1272/2008 (CLP/GHS) or Directive 67/548/EEC as amended. Caution: This substance has not been fully tested (EC).

### HMIS Classification:

Health Hazard:	0
Chronic Health Hazard:	0
Flammability:	0
Physical Hazards:	0

### NFPA Rating:

Health Hazard:	0
Fire:	0
Reactivity Hazard:	0

**Potential Health Effects:**

Inhalation (power/mists): *May be harmful if inhaled. May cause upper respiratory tract & mucous membrane irritation.*

Skin and Eyes: *May cause skin and eye irritation.*

Ingestion: *May be harmful if swallowed.*

Environmental: *May be harmful to the environment.*

**Label Elements:**

*None required according to regulation (EC) 1272/2008 (CLP/GHS) or Directive 1999/45/EC.*

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**Section 3 - COMPOSITION INFORMATION ON INGREDIENTS**

No ingredients are hazardous, or the concentration of all chemicals are below the regulatory threshold limits according to OSHA criteria.

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**Section 4 - FIRST AID MEASURES**

**Inhalation:**

*If breathed in, move person into fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen and consult a physician.*

**Skin Contact:**

*Wash off immediately with soap and plenty of water, remove any contaminated clothing, and consult a physician.*

**Eye Contact:**

*Flush eyes with water for at least 15 minutes and consult a physician.*

**If Swallowed:**

*Rinse mouth with water and consult a physician immediately.*

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**Section 5 - FIRE FIGHTING MEASURES**

**Main Hazard:**

*Not flammable or combustible.*

**Extinguishing Method:**

*Use water spray, alcohol-resistant foam, dry chemical, or carbon monoxide.*

**Special Fire Fighting Procedure:**

*Wear self-contained breathing apparatus with full face shield operated in positive pressure mode, MSHA/NIOSH (approved or equivalent), and full protective gear.*

**Unusual Fire Hazards & Explosion Hazards:**

*None.*

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## Section 6 - ACCIDENTAL RELEASE MEASURES

### Personal Precautions:

*Avoid breathing vapors, mist, or gas.*

### Environmental Precautions:

*No special environmental precautions required.*

### Spill/Leaks:

*Clean up spills using an absorbent, non-combustible material and gather up placing in a clean closed container for disposal. Do not wash away into sewers.*

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## Section 7 - HANDLING AND STORAGE

### Conditions for Safe Storage:

*Keep container tightly closed in a dry and well-ventilated place. Store at -20°C.*

### Special Requirements:

*Light sensitive.*

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## Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with Workplace Control Parameters:

*No components above the 0.1% threshold have specific workplace control parameters assigned to our knowledge.*

### Local Mechanical Ventilation:

*Not required as supplied.*

### Personal Protective Equipment:

Respiratory Protection:	<i>Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).</i>
Hand Protection:	<i>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.</i>
Eye Protection:	<i>Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).</i>
Hygiene Measures:	<i>Avoid contact of contents with skin, eyes, and clothing. Wash hand before breaks and immediately after handling the product.</i>

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## Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

### Appearance:

Physical State: *Solid*

Color: *No data available*

**Safety Data:**

Order: *No data available*  
Order Threshold: *No data available*  
pH: *No data available*  
Vapor Pressure: *No data available*  
Vapor Density: *No data available*  
Relative Vapor Density: *No data available*  
Viscosity: *No data available*  
Boiling Point: *No data available*  
Melting Point: *No data available*  
Decomposition Temperature °C: *No data available.*  
Flash Point: *No data available*  
Ignition Temperature °C: *No data available*  
Autoignition Temperature °C: *No data available*  
Lower Explosion Limit: *No data available*  
Upper Explosion Limit: *No data available*  
Evaporation Rate: *No data available*  
Specific Gravity: *No data available*  
Water Solubility: *No data available*  
Partition Coefficient n-octanol/water: *No data available*  
Odor: *No data available*  
Odor Threshold: *No data available*  
Log Pow: *No data available*

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**Section 10 – STABILITY AND REACTIVITY**

**Chemical Stability:**

*Stable under recommended storage conditions.*

**Possibility of Hazardous Reactions:**

*No data available.*

**Conditions to Avoid:**

*Prolonged light exposure may affect product performance or quality. Keep away from heat, flames, and sparks*

**Materials to Avoid:**

*No data available.*

**Hazardous Decomposition:**

*Hazardous decomposition products formed under fire conditions: carbon oxides.*

**Hazardous Polymerization:**

*No data available.*

**Section 11 – TOXICOLOGICAL DATA**

Acute Toxicity: *No data available.*  
Oral LD50: *No data available.*  
Inhalation LC50: *No data available.*  
Dermal LD50: *No data available.*  
Other Information: *No data available.*

**Skin Corrosion/Irritation:**

*No data available.*

**Respiratory or Skin Sensitization:**

*No data available.*

**Germ Cell Mutagenicity:**

*No data available.*

**Carcinogenicity:**

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.*  
NTP: *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 NTP.*  
OSHA: *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 OSHA.*

**Reproductive Toxicity:**

*No data available.*

**Teratogenicity:**

*No data available.*

**Specific Target Organ Toxicity – Single Exposure (Globally Harmonized System):**

*No data available.*

**Specific Target Organ Toxicity – Repeated Exposure (Globally Harmonized System):**

*No data available.*

**Aspiration Hazard:**

*No data available.*

**Potential Health Effects:**

Inhalation: *May be harmful if inhaled.*  
Skin contact: *May cause skin irritation.*  
Skin Absorption: *May be harmful if absorbed through skin.*  
Ingestion: *May be harmful if swallowed.*

**Signs and Symptoms of Exposure:**

*To the best of our knowledge, the toxicological properties of these materials have not been fully investigated.*

**Synergistic Effects:**

*No data available.*

**Additional Information:**

*RTECS: Not available.*

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**Section 12 – ECOLOGICAL INFORMATION**

**Toxicity:**

*No data available.*

**Persistence and Degradability:**

*No data available.*

**Bioaccumulative Potential:**

*No data available.*

**Mobility in Soil:**

*No data available.*

**PBT and vPvB Assessment:**

*No data available.*

**Other Adverse Effects:**

*To the best of our knowledge, the ecotoxicological properties of this mixture have not been fully investigated. However, the liquid may be harmful to the environment depending on the quantity and dilution involved.*

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**Section 13 – DISPOSAL CONSIDERATIONS**

*Methods of disposal must meet all local, federal and state laws.*

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**Section 14 – TRANSPORTATION INFORMATION**

**US-DOT:**

*Not classified as hazardous for any mode of transport.*

**IMO/IMDG:**

*Not classified as hazardous for any mode of transport.*

**IATA, IMO/IMDG, ADR/RID, US-DOT:**

*Not classified as hazardous for any mode of transport.*

**ADR/RID:**

*Not classified as hazardous for any mode of transport.*

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## Section 15 – REGULATORY INFORMATION

### OSHA Hazards:

*No known OSHA hazards.*

### SARA 302 Components:

*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 302.*

### SARA 313 Components:

*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.*

### SARA 311/312 Hazards:

*No SARA hazards.*

### California Prop. 65 Components:

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

### Other Regulatory Information:

*US (TSCA) Manufactured for Research and development only. Note: Chemical substances that are manufactured or imported in small quantities solely for the use in Research and Development are not subject to the notification requirements of the Toxic Substance Control Act (TSCA), 15 USC 2604 (h) et seq. Reference – 40CFR720.36*

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## Section 16 – OTHER INFORMATION

### Further Information:

Copyright 2019 Cytek Biosciences. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product regarding appropriate safety precautions. It does not represent any guarantee of the properties of the product. Cytek Biosciences and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.cytekbio.com](http://www.cytekbio.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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## Section 1 - PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier:

Catalog Number: R0-00007  
Product Description: Anhydrous DMSO (Dimethyl Sulfoxide)

### Product Details and Usage:

Use as laboratory reagent. For research use only. Not for food, drug, household, or cosmetic use.

### Supplier:

Cytek Biosciences  
46107 Landing Pkwy  
Fremont, CA 94538 U.S.A.  
Tel: (510) 657-0102

**Emergency Telephone Number:** +1 (510) 657-0102

**Fax:** +1 (510) 657-0151

**Telephone:** +1 (877) 922-9835 (toll-free)

### Preparation Information:

Cytek Biosciences Product Safety  
+1 (877) 922-9835 (toll-free)

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## Section 2 - HAZARDS IDENTIFICATION

### Emergency Overview:

No known OSHA hazards. Not a dangerous substance or mixture according to the Globally Harmonized System (GHS). Not classified as hazardous according to Regulation (EC) 1272/2008 (CLP/GHS) or Directive 67/548/EEC as amended. Caution: This substance has not been fully tested (EC).

### HMIS Classification:

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

### NFPA Rating:

Health Hazard:	1
Fire:	2
Reactivity Hazard:	0

### Potential Health Effects:

Inhalation (power/mists): *May be harmful if inhaled. May cause upper respiratory tract & mucous membrane irritation.*

Skin and Eyes: *May cause skin and eye irritation.*

Ingestion: *May be harmful if swallowed.*

Environmental: *May be harmful to the environment.*



**Label Elements:**

None required according to regulation (EC) 1272/2008 (CLP/GHS) or Directive 1999/45/EC.

**Section 3 - COMPOSITION INFORMATION ON INGREDIENTS**

Name	CAS No.	EC No.	Index No.	Weight %	Classification according to 67/548/EEC	Classification according to regulation (EC)No1278/2008
DMSO	67-68-5	200-664-3	-	100%	-	None

**Section 4 - FIRST AID MEASURES**

**Inhalation:**

*If breathed in, move person into fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen and consult a physician.*

**Skin Contact:**

*Wash off immediately with soap and plenty of water, remove any contaminated clothing, and consult a physician.*

**Eye Contact:**

*Flush eyes with water for at least 15 minutes and consult a physician.*

**If Swallowed:**

*Rinse mouth with water and consult a physician immediately.*

**Section 5 - FIRE FIGHTING MEASURES**

**Main Hazard:**

*Flammable*

**Extinguishing Method:**

*Use water spray, alcohol-resistant foam, dry chemical, or carbon monoxide.*

**Special Fire Fighting Procedure:**

*Wear self-contained breathing apparatus with full face shield operated in positive pressure mode, MSHA/NIOSH (approved or equivalent), and full protective gear.*

**Unusual Fire Hazards & Explosion Hazards:**

*None.*

**Section 6 - ACCIDENTAL RELEASE MEASURES**

**Personal Precautions:**

*Avoid breathing vapors, mist, or gas.*

**Environmental Precautions:**

*No special environmental precautions required.*

**Spill/Leaks:**

*Clean up spills using an absorbent, non-combustible material and gather up placing in a clean closed container for disposal. Do not wash away into sewers.*

**Section 7 - HANDLING AND STORAGE**

**Conditions for Safe Storage:**

*Keep container tightly closed in a dry and well-ventilated place. Store at 4°C.*

**Special Requirements:**

*Light sensitive.*

**Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with Workplace Control Parameters:**

Substance: Dimethylsulfoxide

CAS no. 67-68-5

Country	Austria	Belgium	Denmark	European Union	France	Germany
Limit value, 8hours	160mg/m <sup>3</sup>	-	160mg/m <sup>3</sup>	-	-	160mg/m <sup>3</sup>
Limit value, short term	-	-	320mg/m <sup>3</sup>	-	-	320mg/m <sup>3</sup>

Country	Hungary	Italy	Poland	Spain	Sweden	Netherlands	Switzerland
Limit value, 8hours	-	-	-	-	160mg/m <sup>3</sup>	-	160mg/m <sup>3</sup>
Limit value, short term	-	-	-	-	500mg/m <sup>3</sup>	-	320mg/m <sup>3</sup>

Country	United Kingdom	USA-NIOSH	USA-OSHA	Australia	Canada	Japan	South Korea
Limit value, 8hours	-	-	-	-	-	-	-
Limit value, short term	-	-	-	-	-	-	-

**Local Mechanical Ventilation:**

*Not required as supplied.*

**Personal Protective Equipment:**

Respiratory Protection: *Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).*

Hand Protection: *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: *Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).*

Hygiene Measures: *Avoid contact of contents with skin, eyes, and clothing. Wash hand before breaks and immediately after handling the product.*

**Section 9 – PHYSICAL AND CHEMICAL PROPERTIES**

Chemical Name	Dimethylsulfoxide (DMSO)
Appearance	Liquid
Odor	Mild
Odor threshold	No information available
pH	No information available
Melting point/freezing point	16 -19°C
Boiling point	189 °C (372 °F)
Flash point	87 °C (189 °F) - closed cup - ASTM D 93
Evaporate rate	No information available
Flammability	No information available
Explosive limits	No information available
Vapor pressure	0.55 hPa (0.41 mmHg) at 20 °C (68 °F) 4 hPa (3 mmHg) at 50 °C (122 °F)
Vapor density	2.70 - (Air = 1.0)
Relative density	1.1 g/mL
Solubility	No information available
Partition coefficient:n-octanol/water	log Pow: -1.349
Auto-ignition temperature	300 - 302 °C (572 - 576 °F)
Decomposition temperature	> 190 °C (> 374 °F) -
Viscosity	No information available
Explosive properties	Not explosive
Oxidizing properties	No information available

**Section 10 – STABILITY AND REACTIVITY**

**Chemical Stability:**

*Stable under recommended storage conditions.*

**Possibility of Hazardous Reactions:**

*No data available.*

**Conditions to Avoid:**

Heat, flames and sparks.

**Materials to Avoid:**

*No data available.*

**Hazardous Decomposition:**

*Hazardous decomposition products formed under fire conditions: carbon oxides.*

**Hazardous Polymerization:**

*No data available.*

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**Section 11 – TOXICOLOGICAL DATA**

**Acute toxicity DMSO**

<b>Oral LD50</b>	Rat - 14,500 mg/kg
<b>Inhalation LC50</b>	Inhalation - rat - 4 h - 40250 ppm
<b>Dermal LD50</b>	Rabbit - > 5,000 mg/kg
<b>Other information on acute toxicity</b>	No data available

**Skin Corrosion/Irritation:**

*No data available.*

**Respiratory or Skin Sensitization:**

*No data available.*

**Germ Cell Mutagenicity:**

Salmonella typhimurium assay (Ames test): negative (+/- activation),  
used as a neutral solvent in the Ames mutagen test

DMSO is

**Carcinogenicity:**

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.*

NTP: *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 NTP.*

OSHA: *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 OSHA.*

**Reproductive Toxicity:**

Not considered to be directly embryotoxic and has been shown to be a successful cryoprotectant for mammalian semen and embryos

**Teratogenicity:**

*No data available.*

**Specific Target Organ Toxicity – Single Exposure (Globally Harmonized System):**

*No data available.*

**Specific Target Organ Toxicity – Repeated Exposure (Globally Harmonized System):**

*No data available.*



**Aspiration Hazard:**

*No data available.*

**Potential Health Effects:**

Inhalation: *May be harmful if inhaled.*  
Skin contact: *May cause skin irritation.*  
Skin Absorption: *May be harmful if absorbed through skin.*  
Ingestion: *May be harmful if swallowed.*

**Signs and Symptoms of Exposure:**

*To the best of our knowledge, the toxicological properties of these materials have not been fully investigated.*

**Synergistic Effects:**

*No data available.*

**Additional Information:**

*RTECS: Not available.*

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**Section 12 – ECOLOGICAL INFORMATION**

**Toxicity:**

The LC50(96hrs) for ten species of fish range from 32500 to 43000ppm

**Persistence and Degradability:**

*No data available.*

**Bioaccumulative Potential:**

*No data available.*

**Mobility in Soil:**

*No data available.*

**PBT and vPvB Assessment:**

*No data available.*

**Other Adverse Effects:**

*To the best of our knowledge, the ecotoxicological properties of this mixture have not been fully investigated. However, the liquid may be harmful to the environment depending on the quantity and dilution involved.*

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**Section 13 – DISPOSAL CONSIDERATIONS**

*Methods of disposal must meet all local, federal and state laws.*

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**Section 14 – TRANSPORTATION INFORMATION**

**US-DOT:**

*Not classified as hazardous for any mode of transport.*



**IMO/IMDG:**

*Not classified as hazardous for any mode of transport.*

**IATA, IMO/IMDG, ADR/RID, US-DOT:**

*Not classified as hazardous for any mode of transport.*

**ADR/RID:**

*Not classified as hazardous for any mode of transport.*

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**Section 15 – REGULATORY INFORMATION**

**OSHA Hazards:**

*No known OSHA hazards.*

**SARA 302 Components:**

*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 302.*

**SARA 313 Components:**

*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.*

**SARA 311/312 Hazards:**

DMSO : fire hazard, chronic health hazard  
Acute Health Hazard: Yes  
Chronic Health Hazard: No  
Fire Hazard: Yes  
Sudden Release of Pressure Hazard: No  
Reactive Hazard: No

**WHMIS Hazard Class:**

Flammable liquids, category 4

**California Prop. 65 Components:**

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

**Other Regulatory Information:**

*US (TSCA) Manufactured for Research and development only. Note: Chemical substances that are manufactured or imported in small quantities solely for the use in Research and Development are not subject to the notification requirements of the Toxic Substance Control Act (TSCA), 15 USC 2604 (h) et seq. Reference – 40CFR720.36*



## Section 16 – OTHER INFORMATION

### Further Information:

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