

## 14 November 2017

# **Kit Components**

Product Code	Description
30077-1	LavaLAMP <sup>™</sup> DNA Component Kit and Green Fluorescent Dye

# Components

10X LavaLAMP™ DNA Buffer	F834098-1
100 mM MgSO <sub>4</sub>	F88695-2
LavaLAMP <sup>™</sup> DNA Enzyme	F832817-1
DNA Positive Control LAMP Primer Mix	F813735-1
DNA Positive Control	F823736-1
Green Fluorescent Dye	F883827-2



Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 11/03/2017 Version: A

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

#### 1.1. Product identifier

Product name	:	10X LAMP DNA Buffer minus Magnesium Sulfate
Product form	:	Mixture
Product code	:	F834098-1.

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

Use of the substance/mixture

: Laboratory chemical.

#### 1.3. Details of the supplier of the safety data sheet

Lucigen Corporation 2905 Parmenter Street Middleton, WI 53562 U.S.A. Phone: (608) 831-9011 Fax: (608) 831-9012 E-mail: techserv@lucigen.com

#### 1.4. Emergency telephone number

Emergency number

: 1-888-575-9695 (Lucigen: Monday-Friday, 8:00AM-5:00PM)

## SECTION 2: Hazards identification

## 2.1. Classification of the substance or mixture

GHS-US classification

Not classified.

2.2. Label elements

#### **GHS-US** labelling

No labeling applicable.

2.3. Other hazards

None.

2.4. Unknown acute toxicity (GHS-US)

No data available.

## **SECTION 3: Composition/information on ingredients**

#### 3.2. Mixture

Name	Product identifier	%
TRIS HCI, CAS # 1185-53-1 EC# 214-684-5 Chemical Formula: C4H11NO3*HCI Molecular Weight: 157.60 g/mol Synonyms: TRIS hydrochloride, Tris(hydroxymethyl)aminomethanehydrochloride, 2-Amino-2- (hydroxymethyl)propane-1,3-diol hydrochloride	Ingredient in product.	3.9%
D-Mannitol, CAS # 69-65-8 EC# 200-711-8 Chemical Formula: C <sub>6</sub> H <sub>14</sub> O <sub>6</sub> Molecular Weight: 182.17 g/mol Synonyms: Mannite	Ingredient in product.	5.0%
Trehalose, CAS # 6138-23-4 Chemical Formula: C <sub>12</sub> H <sub>22</sub> O <sub>11</sub> *2H <sub>2</sub> O Molecular Weight: 378.3 g/mol Synonyms: ALPHA-D-GLUCOPYRANOSIDE, ALPHA-D- GLUCOPYRANOSYL	Ingredient in product.	20%
Ammonium sulfate, CAS # 7783-20-2 EC# 231-984-1 Chemical Formula: H <sub>8</sub> N <sub>2</sub> O <sub>4</sub> S Molecular Weight: 132.14 g/mol Synonyms: Ammonium sulphate	Ingredient in product.	1.3%
CHAPS, CAS # 75621-03-3 Chemical Formula: C <sub>4</sub> H <sub>11</sub> NO <sub>3</sub> *HCl Molecular Weight: 614.88 g/mol Synonyms: 3-[(3-Cholamidopropyl)dimethylammonio]-1- propanesulfonate	Ingredient in product. Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H315, H319, H335	3.0%

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## **SECTION 4: First aid measures**

4.1. Description of first aid measures				
First-aid measures general	: If exposed or concerned, consult a physician. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.			
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Consult a physician.			
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin for at least 15 minutes with tepid water. Consult a physician.			
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of tepid water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Consult a physician.			
First-aid measures after ingestion	: IF SWALLOWED: Rinse mouth thoroughly and consult a physician. Do not induce vomiting.			
4.2. Most important symptoms and effect	s, both acute and delayed			
Symptoms/injuries	: Not expected to present a significant acute hazard under anticipated conditions of normal use.			
Symptoms/injuries after inhalation	: May cause irritation to respiratory tract.			
Symptoms/injuries after skin contact	Causes skin irritation.			
Symptoms/injuries after eye contact	Causes eye irritation.			
Symptoms/injuries after ingestion	: May cause gastrointestinal distress, nausea, and diarrhea.			
4.3. Indication of any immediate medical attention and special treatment needed				
No additional information.				
SECTION 5: Firefighting measures				
5.1. Extinguishing media				
Suitable extinguishing media	: Water spray, carbon dioxide, dry chemical powder, alcohol-resistant foam, or appropriate foam.			
5.2. Special hazards arising from the sub	stance or mixture			
Fire hazard	: Emits toxic fumes under fire conditions.			
Explosion hazard	: No data available.			
Reactivity	Can react with oxidizing agents.			

#### 5.3 Advice for firefighters

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Firefighting instructions	: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

# SECTION 6: Accidental release measures

6.1.	Personal precautions, protective equipment and emergency procedures			
General r	neasures	:	Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).	
6.1.1.	For non-emergency personnel			
Protective	e equipment	:	Wear Personal Protective Equipment as described in Section 8.	
6.1.2.	For emergency responders			
Protective	e equipment	:	Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".	
6.2.	Environmental precautions			
Prevent e	entry to sewers and public waters. Notify	aι	thorities if liquid enters sewers or public waters. Avoid release to the environment.	
6.3.	Methods and material for containmer	nt	and cleaning up	
For conta	inment	:	Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.	
Methods for cleaning up		:	Soak up spills with inert absorbants, such as sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a	

safe way, and as per local, state, and federal legislation.

#### 6.4. Reference to other sections

No additional information available

Safety Data Sheet

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# SECTION 7: Handling and storage 7.1. Precautions for safe handling

## Precautions for safe handling

: Do not handle until all safety precautions have been read and understood. Wear recommended personal protective equipment. Wash hands and other exposed areas with mild soap and water after handling material, leaving the laboratory, before eating, drinking or smoking and when leaving work.

: Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust

ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas. Emergency safety

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

Store in a -20°C freezer without a defrost cycle.

#### **SECTION 8: Exposure controls/personal protection**

#### 8.1. Control parameters

Contains no substances with occupational exposure limits.

#### 8.2. Exposure controls

Appropriate engineering controls

Personal protective equipment

shower and eye wash station should be available. Avoid prolonged or repeated exposure.Gloves. Protective goggles. Laboratory Coat.



Hand protection

Eye protection

Skin and body protection

Respiratory protection

:	Use gloves chemically resistant to this material when prolonged or repeated contact could
	occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves
	for this specific application can be recommended by the glove supplier. Suggested glove
	materials are: Neoprene, Nitrile.

- : Safety goggles should be worn when working with mixture. Avoid direct contact with eyes.
- : Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
- : Use NIOSH/MSHA-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. Do not breathe in vapour, mist, or dust.

## **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	:	No data available			
рН	:	No data available			
Melting point	:	No data available			
Freezing point (50% aquesous solution)	:	No data available			
Boiling point	:	No data available			
Flash point	:	No data available			
Relative evaporation rate	:	No data available			
Flammability (solid, gas)	:	No data available			
Vapour pressure	:	No data available			
Relative vapour density at 20 °C	:	No data available			
Relative density	:	No data available			
Solubility in Water	:	No data available			
Log Pow	:	No data available			
Log Kow	:	No data available			
Auto-ignition temperature	:	No data available			
Decomposition temperature	:	No data available			
Viscosity, kinematic	:	No data available			
Viscosity, dynamic	:	No data available			
Explosive properties	:	No data available			
Oxidising properties	:	No data available			

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Explosive limits

: No data available

#### 9.2. Other information

None.

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## **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

#### 10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

#### 10.3. Possibility of hazardous reactions

None known.

#### 10.4. Conditions to avoid

No data available.

#### 10.5. Incompatible materials

Strong oxidizing agents, Strong bases.

#### 10.6. Hazardous decomposition products

Sulphur oxides, Magnesium oxide, Carbon oxides, Nitrogen oxides.

#### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity	:	No data available
Skin corrosion/irritation	:	No data available
Serious eye damage/irritation	:	No data available
Respiratory or skin sensitisation	:	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 dientified as probablye, possible, or confirmed human carcinogen by IARC.
		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.
		NTP – No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticpated carcinogen by NTP.
		OSHA – No component of this product present at levels greater than or equal to 0.1% is identified as a carcinoen or potential carcinogen by OSHA.
Reproductive toxicity	:	No data available
Specific target organ toxicity (single exposure)	:	No data available
Specific target organ toxicity (repeated exposure)	:	No data available
Aspiration hazard	:	No data available
Symptoms/injuries after inhalation	:	May cause irritation to respiratory tract.
Symptoms/injuries after skin contact	: (	Causes skin irritation.
Symptoms/injuries after eye contact	: (	Causes eye irritation.
Symptoms/injuries after ingestion	:	May cause gastrointestinal distress, nausea, and diarrhea.
Additional Information		RTECS : Not available. May cause stomach irregularities (human evidence). To the best of our knowledge, the

chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **SECTION 12: Ecological information**

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

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#### 12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations		
13.1. Waste treatment methods		
Waste treatment methods	: Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Product should not be discharged to surface waters without a NPDES permit.	
Waste disposal recommendations	<ul> <li>Dispose in a safe manner in accordance with local, state, and federal regulations. Avoid release to the environment.</li> </ul>	

#### **SECTION 14: Transport information**

DOT

Not dangerous goods

#### IMDG Not da

Not dangerous goods

# ΙΑΤΑ

Not dangerous goods

#### **SECTION 15: Regulatory information**

#### 15.1. US Federal regulations

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

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

#### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

#### **SARA 302**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313

Ammonium sulphate, CAS 7783-20-2

#### 15.2. International regulations.

None.

#### 15.3. US State regulations

#### **California Proposition 65**

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

#### Massachusetts Right To Know Components

Ammonium sulphate, CAS 7783-20-2.

#### New Jersey Right to Know Hazardous Substance List

2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride, CAS 1185-53-1 D-Mannitol, CAS 69-65-8 Trehalose dehydrate, CAS 6138-23-4 Ammonium sulphate, CAS 7783-20-2 3-[(3-Cholamidopropyl)dimethylammonio]-1-propanesulfonate, CAS 75621-03-3 Water, CAS 7732-18-5

#### Pennsylvania Right to Know List

2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride, CAS 1185-53-1 D-Mannitol, CAS 69-65-8 Trehalose dehydrate, CAS 6138-23-4 Ammonium sulphate, CAS 7783-20-2 3-[(3-Cholamidopropyl)dimethylammonio]-1-propanesulfonate, CAS 75621-03-3 Water, CAS 7732-18-5

## **SECTION 16: Other information**

Indication of changes	: Revision A: Updated format.
Revision date	: 11/03/2017
Other information	: Author: Lucigen Corporation

: 0

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Physical Hazard

**Personal Protection** 

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Full Text of H-Statements referred to under s	
Eye Irrit.	: Eye irritation.
H315	: Causes skin irritation.
H319	: Causes serious eye irritation.
H335	: May cause respiratory irritation.
Skin Irrit.	: Skin irritation.
STOT SE	: Specific target organ toxicity – single exposure
NFPA health hazard NFPA fire hazard NFPA reactivity	<ul> <li>1 - Exposure would cause irritation with only minor residual injury.</li> <li>0 - Material that will not burn under typical fire conditions, including intrinsically noncombustibel materials such as concrete, stone and sand.</li> <li>0 - Normally stable, even under fire exposure conditions, and are not reactive with water.</li> </ul>
HMIS III Rating Health	: 1
Flammability	: 0
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This information is disclosed to the best of Lucigen's knowledge. This document does not constitute a contractual relationship with product end users or handlers with respect to the possible presence of hazards in this item. Disposal should be in accordance with applicable regional, national and local laws and regulations.



Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 11/03/2017 Version: A

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

#### Product identifier 1.1.

Product name	:	100 mM Magnesium Sulfate Solution
Product form	:	Mixture
Product code	:	F88695-2.

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

Use of the substance/mixture

: Laboratory chemical.

#### Details of the supplier of the safety data sheet 1.3.

Lucigen Corporation 2905 Parmenter Street Middleton, WI 53562 U.S.A. Phone: (608) 831-9011 Fax: (608) 831-9012 E-mail: techserv@lucigen.com

#### **Emergency telephone number** 1.4.

Emergency number

: 1-888-575-9695 (Lucigen: Monday-Friday, 8:00AM-5:00PM)

## **SECTION 2: Hazards identification**

#### Classification of the substance or mixture 2.1.

**GHS-US** classification Not classified.

#### 2.2. Label elements

#### **GHS-US** labelling

No labeling applicable.

Other hazards 2.3.

None.

Unknown acute toxicity (GHS-US) 2.4.

No data available.

#### **SECTION 3: Composition/information on ingredients**

#### 3.2. Mixture

Name	Product identifier	%
Magnesium sulfate, CAS # 7487-88-9 EC# 231-298-2 Chemical Formula: MgSO <sub>4</sub> Molecular Weight: 120.37 g/mol Synonyms: None	Ingredient in product.	1.2%

#### **SECTION 4: First aid measures**

4.1. Description of first aid mea	sures
First-aid measures general	<ul> <li>If exposed or concerned, consult a physician. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.</li> </ul>
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin for at least 15 minutes with tepid water. Consult a physician.
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of tepid water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Consult a physician.
First-aid measures after ingestion	: IF SWALLOWED: Rinse mouth thoroughly and consult a physician. Do not induce vomiting.
4.2. Most important symptoms	and effects, both acute and delayed
Symptoms/injuries	: Not expected to present a significant acute hazard under anticipated conditions of normal use.
Symptoms/injuries after inhalation	: May cause irritation to respiratory tract.
Symptoms/injuries after skin contact	: May cause skin irritation.
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Symptoms/injuries after eye contact	: May cause irritation, redness, and pain.
Symptoms/injuries after ingestion	: May cause gastrointestinal distress, nausea, and diarrhea.
4.3. Indication of any immediat	e medical attention and special treatment needed
No additional information.	
SECTION 5: Firefighting mea	sures
5.1. Extinguishing media	
Suitable extinguishing media	: Water spray, carbon dioxide, dry chemical powder, alcohol-resistant foam, or appropriate foam
5.2. Special hazards arising fro	om the substance or mixture
Fire hazard	: Emits toxic fumes under fire conditions.
Explosion hazard	: No data available.
Reactivity	: Can react with oxidizing agents.
5.3. Advice for firefighters	
Firefighting instructions	: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
SECTION 6: Accidental relea	se measures
6.1. Personal precautions, prot	ective equipment and emergency procedures
General measures	: Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)
6.1.1. For non-emergency person	nnel
Protective equipment	: Wear Personal Protective Equipment as described in Section 8.
6.1.2. For emergency responders	3
Deste stiller a surface set	: Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".
Protective equipment	
	5
6.2. Environmental precautions	<b>s</b> ters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.
6.2. Environmental precautions Prevent entry to sewers and public wa	
<ul> <li>6.2. Environmental precautions</li> <li>Prevent entry to sewers and public wa</li> <li>6.3. Methods and material for contract of the second second</li></ul>	ters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.
<ul> <li>6.2. Environmental precautions</li> <li>Prevent entry to sewers and public wa</li> <li>6.3. Methods and material for of</li> <li>For containment</li> </ul>	ters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment. containment and cleaning up : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration
6.2. Environmental precautions Prevent entry to sewers and public wa	<ul> <li>ters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.</li> <li>containment and cleaning up <ol> <li>Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.</li> <li>Soak up spills with inert absorbants, such as sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.</li> </ol> </li> </ul>

Precautions for safe handling
 Do not handle until all safety precautions have been read and understood. Wear recommended personal protective equipment. Wash hands and other exposed areas with mild soap and water after handling material, leaving the laboratory, before eating, drinking or smoking and when leaving work.
 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

Store in a -20°C freezer without a defrost cycle.

#### **SECTION 8: Exposure controls/personal protection**

#### 8.1. Control parameters

Contains no substances with occupational exposure limits.

#### 8.2. Exposure controls

Appropriate engineering controls

: Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas. Emergency safety shower and eye wash station should be available. Avoid prolonged or repeated exposure.

Safety Data Sheet Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Personal protective equipment	: Gloves. Protective goggles. Laboratory Coat.
Hand protection	: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves for this specific application can be recommended by the glove supplier. Suggested glove materials are: Neoprene, Nitrile.
Eye protection	: Safety goggles should be worn when working with mixture. Avoid direct contact with eyes.
Skin and body protection	: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	: Use NIOSH/MSHA-approved dust/particulate respirator if exposure symptoms develop. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. Do not breathe in vapour, mist, or dust.

## **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	:	No data available		
рН	:	No data available		
Melting point	:	No data available		
Freezing point (50% aquesous solution)	:	No data available		
Boiling point	:	No data available		
Flash point	:	No data available		
Relative evaporation rate	:	No data available		
Flammability (solid, gas)	:	No data available		
Vapour pressure	:	No data available		
Relative vapour density at 20 °C		No data available		
Relative density		No data available		
Solubility in Water		No data available		
Log Pow		No data available		
Log Kow		No data available		
Auto-ignition temperature	:	No data available		
Decomposition temperature	:	No data available		
Viscosity, kinematic	:	No data available		
Viscosity, dynamic		No data available		
Explosive properties	:	No data available		
Oxidising properties	:	No data available		
Explosive limits	:	No data available		
9.2. Other information				

None.

## **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

#### 10.2. **Chemical stability**

Stable under use and storage conditions as recommended in section 7.

#### Possibility of hazardous reactions 10.3.

None known.

#### 10.4. Conditions to avoid

No data available.

#### Incompatible materials 10.5.

Strong oxidizing agents.

#### Hazardous decomposition products 10.6.

Sulphur oxides, Magnesium oxide.

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#### **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity	:	No data available
Skin corrosion/irritation	:	No data available
Serious eye damage/irritation	:	No data available
Respiratory or skin sensitisation	:	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 dientified as probablye, possible, or confirmed human carcinogen by IARC.
		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.
		NTP – No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticpated carcinogen by NTP.
		OSHA – No component of this product present at levels greater than or equal to 0.1% is identified as a carcinoen or potential carcinogen by OSHA.
Reproductive toxicity	:	No data available
Specific target organ toxicity (single exposure)	:	No data available
Specific target organ toxicity (repeated exposure)	:	No data available
Aspiration hazard		No data available
Symptoms/injuries after inhalation	:	May cause irritation to respiratory tract.
Symptoms/injuries after skin contact	:	May cause mild irritation to skin.
Symptoms/injuries after eye contact	:	May cause irritation, redness, and pain.
Symptoms/injuries after ingestion	:	May cause gastrointestinal distress, nausea, and diarrhea.
Additional Information	:	RTECS : Not available. May cause central nervous system depression, liver irregularities (human evidence), and stomach irregularities (human evidence). To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **SECTION 12: Ecological information**

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. **Bioaccumulative potential**

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

SECTION 13: Disposal consider	ations
13.1. Waste treatment methods	
Waste treatment methods	<ul> <li>Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Product should not be discharged to surface waters without a NPDES permit.</li> </ul>
Waste disposal recommendations	: Dispose in a safe manner in accordance with local, state, and federal regulations. Avoid release to the environment.
SECTION 14: Transport informa	tion

DOT

Not dangerous goods

#### IMDG

Not dangerous goods

#### ΙΑΤΑ

Not dangerous goods

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#### **SECTION 15: Regulatory information**

#### 15.1. US Federal regulations

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

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

#### SARA 311/312 Hazards

Chronic Health Hazard

#### **SARA 302**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### **SARA 313**

This materials 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.

#### 15.2. International regulations.

None.

#### 15.3. US State regulations

#### **California Proposition 65**

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

#### Massachusetts Right To Know Components

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

## New Jersey Right to Know Hazardous Substance List

Magnesium sulphate, CAS 7487-88-9 Water, CAS 7732-18-5

#### Pennsylvania Right to Know List

Magnesium sulphate, CAS 7487-88-9 Water, CAS 7732-18-5

SECTION 16: Other information	
Indication of changes	: Revision A: Updated format.
Revision date	: 11/03/2017
Other information	: Author: Lucigen Corporation
NFPA health hazard	: 0 – Poses no health hazard, no precaustions necessary and would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 0 – Material that will not burn under typical fire conditions, including intrinsically noncombustibel materials such as concrete, stone and sand.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
HMIS III Rating	
Health	: 0
Flammability	: 0
Physical Hazard	: 0
Personal Protection	:

This information is disclosed to the best of Lucigen's knowledge. This document does not constitute a contractual relationship with product end users or handlers with respect to the possible presence of hazards in this item. Disposal should be in accordance with applicable regional, national and local laws and regulations.



Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 08/21/2018 Version: B

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

#### Product identifier 1.1.

Product name	:	LavaLAMP <sup>™</sup> DNA Enzyme
Product form	:	Mixture
Product code	:	F832817-1

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

Use of the substance/mixture

: Laboratory chemical.

#### Details of the supplier of the safety data sheet 1.3.

Lucigen Corporation 2905 Parmenter Street Middleton, WI 53562 U.S.A. Phone: (608) 831-9011 Fax: (608) 831-9012 E-mail: techserv@lucigen.com

#### **Emergency telephone number** 1.4.

Emergency number

: 1-888-575-9695 (Lucigen: Monday-Friday, 8:00AM-5:00PM)

## **SECTION 2: Hazards identification**

#### Classification of the substance or mixture 2.1.

**GHS-US** classification

Not classified.

2.2. Label elements

#### **GHS-US** labelling

No labelling applicable.

2.3. Other hazards

Not a hazardous substance or mixture.

Unknown acute toxicity (GHS-US) 2.4.

No data available.

## **SECTION 3: Composition/information on ingredients**

#### 3.2. Mixture

Name	Product identifier	%
Not a hazardous ingredient at levels requiring disclosure by the OSHA Hazard Communication Standard (29 CFR 1910.1200).	Ingredient in product.	10%

#### **SECTION 4: First aid measures**

4.1. Description of first aid measu	res
First-aid measures general	<ul> <li>If exposed or concerned, consult a physician. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.</li> </ul>
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin for at least 15 minutes with tepid water. Consult a physician.
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of tepid water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Consult a physician.
First-aid measures after ingestion	: IF SWALLOWED: Rinse mouth thoroughly and consult a physician. Do not induce vomiting.
4.2. Most important symptoms and	d effects, both acute and delayed
Symptoms/injuries	: Not expected to present a significant acute hazard under anticipated conditions of normal use.
Symptoms/injuries after inhalation	: May cause upper respiratory irratation.
Symptoms/injuries after skin contact	: May cause skin irritation.
Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
08/21/2018	

## Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/injuries after ingestion

: May cause gastrointestinal irritation.

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

No additional information available

SECTION 5: Firefighting measures		
5.1.	Extinguishing media	
Suitable	extinguishing media	Water spray, carbon dioxide, dry chemical powder, or appropriate foam.
5.2.	Special hazards arising from the subs	tance or mixture
Fire haza	rd	No data available.
Explosior	hazard	No data available.
Reactivity	/	Can react with oxidizing agents.
5.3.	Advice for firefighters	
Firefighti	ng instructions	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Protectio	n during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.
SECTION 6: Accidental release measures		
6.1.	Personal precautions, protective equi	pment and emergency procedures
General r	neasures	Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).
6.1.1.	For non-emergency personnel	
Protective	e equipment	Wear Personal Protective Equipment as described in Section 8.
6.1.2.	For emergency responders	
Protective	e equipment	Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".
6.2.	Environmental precautions	
Prevent e	entry to sewers and public waters. Notify a	uthorities if liquid enters sewers or public waters. Avoid release to the environment.
6.3.	Methods and material for containment	t and cleaning up
For conta	inment	Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.
Methods	for cleaning up	Soak up spills with inert absorbants, such as sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.
<b>6.4.</b> No additi	Reference to other sections onal information available	

SECTION 7: Handling and storage		
7.1.	Precautions for safe handlin	g
Precau	utions for safe handling	: Do not handle until all safety precautions have been read and understood. Wear recommended personal protective equipment. Wash hands and other exposed areas with mild soap and water after handling material, leaving the laboratory, before eating, drinking or smoking and when leaving work.
7.2.	7.2. Conditions for safe storage, including any incompatibilities	
Storag	e conditions	: Store at -20°C in a freezer without a defrost cycle.

## **SECTION 8: Exposure controls/personal protection**

#### 8.2. Exposure controls Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Ensure adequate ventilation, especially in confined areas. Emergency safety shower and eye wash station should be available. Avoid prolonged or repeated exposure.
 Gloves. Protective goggles. Laboratory Coat.

Personal protective equipment

## Safety Data Sheet

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Hand protection	: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves for this specific application can be recommended by the glove supplier. Suggested glove materials are: Neoprene, Nitrile.
Eye protection	: Safety goggles should be worn when working with mixture. Avoid direct contact with eyes.
Skin and body protection	: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	<ul> <li>Use NIOSH/MSHA-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. Do not breathe in vapour, mist, or dust.</li> </ul>

#### **SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties	
Physical state	: Liquid
Color	: Colorless, nearly colorless, whitish
Odor	: No data available
Odor Threshold	: No data available
рН	: No data available
Melting point	: No data available
Freezing point (50% aquesous solution)	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: No data available
Solubility in Water	: No data available
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available
9.2. Other information	

None.

#### **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

## 10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

#### 10.3. Possibility of hazardous reactions

None known. Hazardous polymerization does not occur.

#### 10.4. Conditions to avoid

None known.

#### 10.5. Incompatible materials

Strong oxidizing agents

#### 10.6. Hazardous decomposition products

No information available

#### **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity

: No data available

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Skin corrosion/irritation	: No data available
Serious eye damage/irritation	: No data available
Respiratory or skin sensitisation	: No data available
Germ cell mutagenicity	: No data available
Carcinogenicity	<ul> <li>IARC – No component of this product present at levels greater than or equal to 0.1% is dientified as probablye, possible, or confirmed human carcinogen by IARC.</li> </ul>
	NTP – No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticpated carcinogen by NTP.
	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.
Reproductive toxicity	: No data available
Specific target organ toxicity (single exposure)	: No data available
Specific target organ toxicity (repeated exposure)	: No data available
Aspiration hazard	: No data available
Symptoms/injuries after inhalation	: May cause upper respiratory irratation. May cause headaches.
Symptoms/injuries after skin contact	: May cause skin irritation.
Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion	: May cause gastrointestinal irritation.
Additional Information	: The chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **SECTION 12: Ecological information**

#### 12.1. Toxicity

No additional information available

## 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations	
13.1. Waste treatment methods	
Waste treatment methods	: Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Product should not be discharged to surface waters without a NPDES permit.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local, state, and federal regulations. Avoid release to the environment.

#### **SECTION 14: Transport information**

DOT

Not hazardous for transport

#### IMDG

Not dangerous goods

#### ΙΑΤΑ

Not dangerous goods

#### **SECTION 15: Regulatory information**

#### 15.1. US Federal regulations

## SARA 304 Extremely Hazardous Substances Reportable Quantity

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

#### SARA 311/312 Hazards

No SARA Hazards

## Safety Data Sheet

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#### SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### **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.

#### 15.2. International regulations

None.

#### 15.3. US State regulations

#### **California Proposition 65**

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

#### Massachusetts Right To Know Components

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

#### New Jersey Right to Know Hazardous Substance List

No components are subject to the New Jersey Right to Know Act.

#### Pennsylvania Right to Know List

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

SECTION 16: Other information	
Indication of changes	: Revision B: Updated format.
Revision date	: 08/21/2018
Other information	: Author: Lucigen Corporation
NFPA health hazard	: 1 – Exposure will cause irriation with only minor residual injury.
NFPA fire hazard	: 0 – Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
HMIS III Rating	
Health	: 1
Flammability	: 0
Physical Hazard	: 0
Personal Protection	:

This information is disclosed to the best of Lucigen's knowledge. This document does not constitute a contractual relationship with product end users or handlers with respect to the possible presence of hazards in this item. Disposal should be in accordance with applicable regional, national and local laws and regulations.



Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 10/31/2017 Version: A

Revision date: 10/31/2017 Version: 7

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

#### 1.1. Product identifier

Product name	: DNA Positive Control LAMP Primer Mix
Product form	: Mixture
Product code	: F813735-1

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

Use of the substance/mixture

: Laboratory chemical.

#### 1.3. Details of the supplier of the safety data sheet

Lucigen Corporation 2905 Parmenter Street Middleton, WI 53562 U.S.A. Phone: (608) 831-9011 Fax: (608) 831-9012 E-mail: techserv@lucigen.com

#### 1.4. Emergency telephone number

Emergency number

: 1-888-575-9695 (Lucigen: Monday-Friday, 8:00AM-5:00PM)

## SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

GHS-US classification Not classified.

NUL CIASSINEU.

## 2.2. Label elements

#### GHS-US labelling

No labelling applicable.

2.3. Other hazards

None.

#### 2.4. Unknown acute toxicity (GHS-US)

No data available.

## **SECTION 3: Composition/information on ingredients**

3.2. Mixture Synonyms

: N/A

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	: If exposed or concerned, consult a physician. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin for at least 15 minutes with tepid water. Consult a physician.
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of tepid water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Consult a physician.
First-aid measures after ingestion	: IF SWALLOWED: Rinse mouth thoroughly and consult a physician. Do not induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cups of water. Wash mouth out with water. Consult a physician.
4.2. Most important symptoms and effects, both acute and delayed	
Symptoms/injuries	: Not expected to present a significant acute hazard under anticipated conditions of normal use.
Symptoms/injuries after inhalation	: May cause upper respiratory irratation.
Symptoms/injuries after skin contact	: May cause skin irritation.

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating. Symptoms/injuries after ingestion : May cause gastrointestinal irritation. 4.3. Indication of any immediate medical attention and special treatment needed No additional information available SECTION 5: Firefighting measures 5.1. Extinguishing media Suitable extinguishing media : Water spray, alcohol resistant foam, dry chemical, carbon dioxide, alcohol-resistant foam, or appropriate foam. Special hazards arising from the substance or mixture 5.2.

 Fire hazard
 : No data available.

 Explosion hazard
 : No data available.

 Reactivity
 : No dangerous reactions known under normal conditions of use.

 5.3.
 Advice for firefighters

 Firefighting instructions
 : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

 Protection during firefighting
 : Do not enter fire area without proper protective equipment, including respiratory protection.

# SECTION 6: Accidental release measures 6.1. Personal precautions, protective equipment and emergency procedures General measures : Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8). 6.1.1. For non-emergency personnel Protective equipment Protective equipment : Wear Personal Protective Equipment as described in Section 8. 6.1.2. For emergency responders Protective equipment Protective equipment : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment	: Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.
Methods for cleaning up	: Soak up spills with inert absorbants, such as sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.

#### 6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage			
7.1.	Precautions for safe handling		
Precautions for safe handling		: Do not handle until all safety precautions have been read and understood. Wear recommended personal protective equipment. Wash hands and other exposed areas with mild soap and water after handling material, leaving the laboratory, before eating, drinking or smoking and when leaving work.	
7.2. Conditions for safe storage, including any incompatibilities			
Storage	conditions	: Store at -20 °C. Keep container tightly closed.	

#### **SECTION 8: Exposure controls/personal protection**

#### 8.1. Control parameters

Contains no substances with occupational exposure limit values.

#### 8.2. Exposure controls

Appropriate engineering controls	: Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust
	ventilation, or other engineering controls to control airborne levels below recommended
	exposure limits. Ensure adequate ventilation, especially in confined areas. Emergency safety
	shower and eye wash station should be available. Avoid prolonged or repeated exposure.

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Personal protective equipment	: Gloves. Protective goggles. Laboratory Coat.
Hand protection	: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves for this specific application can be recommended by the glove supplier. Suggested glove materials are: Neoprene, Nitrile.
Eye protection	: Safety goggles should be worn when working with mixture. Avoid direct contact with eyes.
Skin and body protection	: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	: Use NIOSH/MSHA-approved dust/particulate respirator if irriration or other symptoms occur. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. Do not breathe in vapour, mist, or dust.

## **SECTION 9: Physical and chemical properties**

9.1. Information on basic physical a	and chemical properties	
Physical state	: Liquid	
Color	: Clear	
Odor	: No data available	
Odor Threshold	: No data available	
pH	: No data available	
Melting point	: No data available	
Freezing point	: No data available	
Boiling point	: No data available	
Flash point	: No data available	
Relative evaporation rate	: No data available	
Flammability (solid, gas)	: No data available	
Vapour pressure	: No data available	
Relative vapour density at 20 °C	: No data available	
Relative density	: No data available	
Solubility in Water	: No data available	
Log Pow	: No data available	
Log Kow	: No data available	
Auto-ignition temperature	: No data available	
Decomposition temperature	: No data available	
Viscosity, kinematic	: No data available	
Viscosity, dynamic	: No data available	
Explosive properties	: No data available	
Oxidising properties	: No data available	
Explosive limits : No data avail		
9.2. Other information		

None.

#### **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

#### 10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

#### 10.3. Possibility of hazardous reactions

None known. Hazardous polymerization does not occur.

#### 10.4. Conditions to avoid

None known.

#### 10.5. Incompatible materials

None known.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products may form under fire conditions. The nature of the decomposition products is not known.

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

#### **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity		No data available
Skin corrosion/irritation	:	No data available
Serious eye damage/irritation	:	No data available
Respiratory or skin sensitisation	:	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 dientified as probablye, possible, or confirmed human carcinogen by IARC.
		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.
		NTP – No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticpated carcinogen by NTP.
		OSHA – No component of this product present at levels greater than or equal to 0.1% is identified as a carcinoen or potential carcinogen by OSHA.
Reproductive toxicity	:	No data available
Specific target organ toxicity (single exposure)	:	No data available
Specific target organ toxicity (repeated exposure)	:	No data available
Aspiration hazard	:	No data available
Symptoms/injuries after inhalation	:	May cause upper respiratory irratation.
Symptoms/injuries after skin contact		May cause skin irritation.
Symptoms/injuries after eye contact		Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion		May cause gastrointestinal irritation.
Additional Information		None.

#### **SECTION 12: Ecological information**

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

## No additional information available

## 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations			
13.1. Waste treatment methods			
Waste treatment methods	: Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Product should not be discharged to surface waters without a NPDES permit.		
Waste disposal recommendations	: Dispose in a safe manner in accordance with local, state, and federal regulations. Avoid release to the environment.		
SECTION 14: Transport information			
In accordance with DOT			

: No supplementary information available.

## Not hazardous for transport Additional information Other information

Transport by sea

No additional information available

#### Air transport

No additional information available

Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

#### **SECTION 15: Regulatory information**

15.1. US Federal regulations

#### SARA 302 Components

No chemicals in this solution are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

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

#### SARA 311/312 Hazards

No SARA Hazards

#### **SARA 313**

This materials 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.

#### 15.2. International regulations

None.

#### 15.3. US State regulations

#### **California Proposition 65**

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

#### Massachusetts Right To Know Components

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

# New Jersey Right to Know Hazardous Substance List Water, CAS 7732-18-5

#### Pennsylvania Right to Know List Water, CAS 7732-18-5

SECTION 16: Other inform	ation
Indication of changes	: Revision A: Updated format.
Revision date	: 10/31/2017
Other information	: Author:
NFPA health hazard	: 0 – Poses no health hazard, no precautions necessary and would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 0 – Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
HMIS III Rating	
Health	: 0
Flammability	: 0
Physical Hazard	: 0
Personal Protection	:

This information is disclosed to the best of Lucigen's knowledge. This document does not constitute a contractual relationship with product end users or handlers with respect to the possible presence of hazards in this item. Disposal should be in accordance with applicable regional, national and local laws and regulations.



<sup>®</sup> Safety Data Sheet

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Revision date: 10/31/2017 Version: A

Revision date. 10/31/2017 Version. /

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

#### 1.1. Product identifier

Product name	:	DNA Positive Control
Product form	:	Mixture
Product code	:	F823736-1

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

Use of the substance/mixture

: Laboratory chemical.

#### 1.3. Details of the supplier of the safety data sheet

Lucigen Corporation 2905 Parmenter Street Middleton, WI 53562 U.S.A. Phone: (608) 831-9011 Fax: (608) 831-9012 E-mail: techserv@lucigen.com

#### 1.4. Emergency telephone number

Emergency number

: 1-888-575-9695 (Lucigen: Monday-Friday, 8:00AM-5:00PM)

## SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

GHS-US classification Not classified.

Not classified.

#### 2.2. Label elements

#### GHS-US labelling

No labelling applicable.

2.3. Other hazards

None.

#### 2.4. Unknown acute toxicity (GHS-US)

No data available.

#### **SECTION 3: Composition/information on ingredients**

3.2. Mixture Synonyms

: N/A

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures				
4.1. Description of first aid measures				
First-aid measures general	: If exposed or concerned, consult a physician. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.			
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Consult a physician.			
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin for at least 15 minutes with tepid water. Consult a physician.			
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of tepid water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Consult a physician.			
First-aid measures after ingestion	: IF SWALLOWED: Rinse mouth thoroughly and consult a physician. Do not induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cups of water. Wash mouth out with water. Consult a physician.			
4.2. Most important symptoms and effects, both acute and delayed				
Symptoms/injuries	: Not expected to present a significant acute hazard under anticipated conditions of normal use.			
Symptoms/injuries after inhalation	: May cause upper respiratory irratation.			
Symptoms/injuries after skin contact	: May cause skin irritation.			
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## Safety Data Sheet

6.1.1. For non-emergency personnel         Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       : Wear suitable protective Equipment as described in Section 8.         6.1.2. For emergency responders       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions       : Wear suitable protective sewers or public waters. Avoid release to the environment.         6.3. Methods and material for containment and cleaning up       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.         Methods for cleaning up       : Soak up spills with inert absorbants, such as sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       No additional information available         SECTION 7: Handling and storage       : Do not handle until all safety precautions have been read and understood. Wear recommended	Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
No additional information available         SECTION 5: Firefighting media         Suitable extinguishing media         Suitable extinguishing media         Statubel extinguishing media         Section bazards arising from the substance or mixture         Fire hazard       No data available.         Explosion hazarda       No data available.         Reactivity       No data available.         Section function for firefighters       No data available.         Firefighting instructions       Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       Contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         6.1.       For energency personnel       Protective equipment         Protective equipment       Wear Self-contained prevention, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal precautions.         6.1.1.       For energency responders         Protective equipment       Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information available         6.2.       Environmental precautions       Contain any spills with dikes or intert absorb	Symptoms/injuries after ingestion	: May cause gastrointestinal irritation.
SECTION 5: Firefighting measures         5.1. Extinguishing media         Suitable extinguishing media         Explosion hazard         Suitable extinguishing media         Suitable ex	4.3. Indication of any immediate me	edical attention and special treatment needed
5.1. Extinguishing media       : Water spray, alcohol resistant foam, dry chemical, carbon dioxide, alcohol-resistant foam, or appropriate foam.         5.2. Special hazards arising from the substance or mixture       : No data available.         Explosion hazard       : No data available.         Reactivity       : No data available.         Scaposion for firefighters       : No data available.         Firefighting instructions       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       : Venitate area. Exacute area. Keep upwind. Spill should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1.1. For non-emergency personnel       : Wear Personal Protective Equipment and full chemical protective gear (see Section 8)         6.1.2. For emergency responders       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.3. Methods and material for containment and cleaning up       : Contain any spills with inter absorbants, such as sand or vermiculite) to prevent migration and entry infols were container for disposal. This manuful and its container must be disposed of in a safe way, and as per local, state, and federal legislation.         6.4. Reference t	No additional information available	
Suitable extinguishing media       : Water spray, alcohol resistant foam, dry chemical, carbon dioxide, alcohol-resistant foam, or appropriate foam.         5.2.       Special hazards arising from the substance or mixture         Fire hazard       : No data available.         Explosion hazard       : No data available.         Reactivity       : No data available.         5.3.       Advice for firefighters         Firefighting instructions       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighterg       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       : Venitate area. Keep upwind. Spiil should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1.       For enon-emergency personnel         Protective equipment       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.1.2.       For emergency responders         Protective equipment       : Contain on ysills with likes or inert absorbents (e.g., sand or vermiculite) to prevent migratior and entry into severs or streams.         6.3.       Methods and material for containment and cleaning up         For containment       : Contain any spills wi	SECTION 5: Firefighting measure	es
appropriate foam.         5.2. Special hazards arising from the substance or mixture         Fre hazard       No data available.         Explosion hazard       No data available.         Reactivity       No data available.         Statistic of firefighters       Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       Ventilate area. Exacute area. Keep upwind. Spiil should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1.1. For non-emergency personnel       Protective equipment         Protective equipment       : Wear Personal Protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.1. For onn-emergency responders       Protective equipment       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migrator and entry in Soewers or streams.         6.1. Environmental precautions       : Contain any spills with dikes or inert	5.1. Extinguishing media	
Fire hazard       : No data available.         Explosion hazard       : No data available.         Reactivity       : No data available.         Reactivity       : No data available.         Reactivity       : No data available.         Stard Advice for firefighters       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       : Venilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipment and full chemical protective gear (see Section 8)         6.1.1 For non-emergency personnel       : Wear Personal Protective clupiment and secribed in Section 8.         6.1.2 For emergency responders       : Wear suitable protective clupiment as described in Section 8.         6.1.4 For one-reagency responders       : Wear suitable protective clubing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2 Environmental precautions       : Contain any spills with dikes or inet absorbents (s.g., sand or vermiculite) to prevent migration and entry into severs or streams.         6.3 Methods and material for containment and cleaning up       : Contain any spills with dikes or inet absorbents (s.g., sand or vermiculite) to prevent migratior and entry into severs or streams.	Suitable extinguishing media	
Explosion hazard       : No data available.         Reactivity       : No dangerous reactions known under normal conditions of use.         5.3.       Advice for firefighters         Firefighting instructions       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures	5.2. Special hazards arising from the	e substance or mixture
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5.3. Advice for firefighters       :       Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       :       Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       :       On tenter fire area without proper protective equipment, including respiratory protection.         Section 4: Accidental release measures       :       Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1.1. For non-emergency personnel       Protective equipment       :       Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       Protective equipment       :       Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions       :       Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migratior and entry into Severes or streams.         6.3. Methods and material for containment and cleaning up       :       Socak up spills with inert absorbents (e.g., sand or vermiculite) to prevent migratior and safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       No dotitional information available       Socak up spills with inert abso	Explosion hazard	: No data available.
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SECTION 8: Exposure controls/personal protection	No additional information available <b>SECTION 7: Handling and storag</b> 7.1. <b>Precautions for safe handling</b> Precautions for safe handling	<ul> <li>Do not handle until all safety precautions have been read and understood. Wear recommender personal protective equipment. Wash hands and other exposed areas with mild soap and water after handling material, leaving the laboratory, before eating, drinking or smoking and when leaving work.</li> </ul>
	No additional information available <b>SECTION 7: Handling and storag</b> <b>7.1. Precautions for safe handling</b> Precautions for safe handling <b>7.2. Conditions for safe storage, inc</b>	<ul> <li>Do not handle until all safety precautions have been read and understood. Wear recommended personal protective equipment. Wash hands and other exposed areas with mild soap and water after handling material, leaving the laboratory, before eating, drinking or smoking and when leaving work.</li> <li>Cluding any incompatibilities</li> </ul>

Contains no substances with occupational exposure limit values.

#### 8.2. Exposure controls

Appropriate engineering controls	:	Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended
		exposure limits. Ensure adequate ventilation, especially in confined areas. Emergency safety shower and eye wash station should be available. Avoid prolonged or repeated exposure.

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Personal protective equipment	: Gloves. Protective goggles. Laboratory Coat.
Hand protection	: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves for this specific application can be recommended by the glove supplier. Suggested glove materials are: Neoprene, Nitrile.
Eye protection	: Safety goggles should be worn when working with mixture. Avoid direct contact with eyes.
Skin and body protection	: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	: Use NIOSH/MSHA-approved dust/particulate respirator if irriration or other symptoms occur. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. Do not breathe in vapour, mist, or dust.

## **SECTION 9: Physical and chemical properties**

9.1. Information on basic physical ar	nd chemical properties		
Physical state	: Liquid		
Color	: Clear		
Odor	: No data available		
Odor Threshold	: No data available		
pH	: No data available		
Melting point	: No data available		
Freezing point	: No data available		
Boiling point	: No data available		
Flash point	: No data available		
Relative evaporation rate	: No data available		
Flammability (solid, gas)	: No data available		
Vapour pressure	: No data available		
Relative vapour density at 20 °C	: No data available		
Relative density	: No data available		
Solubility in Water	: No data available		
Log Pow	: No data available		
Log Kow	: No data available		
Auto-ignition temperature	: No data available		
Decomposition temperature	: No data available		
Viscosity, kinematic	: No data available		
Viscosity, dynamic : No data av			
Explosive properties : No data availa			
Oxidising properties : No data availab			
Explosive limits	: No data available		
9.2. Other information			

None.

#### **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

#### 10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

#### 10.3. Possibility of hazardous reactions

None known. Hazardous polymerization does not occur.

#### 10.4. Conditions to avoid

None known.

#### 10.5. Incompatible materials

None known.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products may form under fire conditions. The nature of the decomposition products is not known.

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#### **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity		No data available
Skin corrosion/irritation	:	No data available
Serious eye damage/irritation	:	No data available
Respiratory or skin sensitisation	:	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 dientified as probablye, possible, or confirmed human carcinogen by IARC.
		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.
		NTP – No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticpated carcinogen by NTP.
		OSHA – No component of this product present at levels greater than or equal to 0.1% is identified as a carcinoen or potential carcinogen by OSHA.
Reproductive toxicity	:	No data available
Specific target organ toxicity (single exposure)	:	No data available
Specific target organ toxicity (repeated exposure)	:	No data available
Aspiration hazard	:	No data available
Symptoms/injuries after inhalation	:	May cause upper respiratory irratation.
Symptoms/injuries after skin contact	:	May cause skin irritation.
Symptoms/injuries after eye contact	:	Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion	:	May cause gastrointestinal irritation.
Additional Information	:	None.

#### **SECTION 12: Ecological information**

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

## No additional information available

## 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

SECTION 13: Disposal conside	rations
13.1. Waste treatment methods	
Waste treatment methods	: Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Product should not be discharged to surface waters without a NPDES permit.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local, state, and federal regulations. Avoid release to the environment.
SECTION 14: Transport information	ation
In accordance with DOT	

: No supplementary information available.

## Not hazardous for transport Additional information Other information

Transport by sea

No additional information available

#### Air transport

No additional information available

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#### **SECTION 15: Regulatory information**

#### 15.1. US Federal regulations

#### SARA 302 Components

No chemicals in this solution are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

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

#### SARA 311/312 Hazards

No SARA Hazards

#### **SARA 313**

This materials 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.

#### 15.2. International regulations

None.

#### 15.3. US State regulations

#### **California Proposition 65**

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

#### Massachusetts Right To Know Components

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

# New Jersey Right to Know Hazardous Substance List Water, CAS 7732-18-5

#### Pennsylvania Right to Know List Water, CAS 7732-18-5

SECTION 16: Other inform	nation
Indication of changes	: Revision A: Updated format.
Revision date	: 10/31/2017
Other information	: Author:
NFPA health hazard	: 0 – Poses no health hazard, no precautions necessary and would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 0 – Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
HMIS III Rating	
Health	: 0
Flammability	: 0
Physical Hazard	: 0
Personal Protection	:

This information is disclosed to the best of Lucigen's knowledge. This document does not constitute a contractual relationship with product end users or handlers with respect to the possible presence of hazards in this item. Disposal should be in accordance with applicable regional, national and local laws and regulations.



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Revision date: 10/31/2017 Version: 7

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

#### 1.1. Product identifier

Product name	:	Green Fluorescent Dye
Product form	:	Mixture
Product code	:	F883827-1, F883827-2

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

Use of the substance/mixture

: Laboratory chemical.

#### 1.3. Details of the supplier of the safety data sheet

Lucigen Corporation 2905 Parmenter Street Middleton, WI 53562 U.S.A. Phone: (608) 831-9011 Fax: (608) 831-9012 E-mail: techserv@lucigen.com

#### 1.4. Emergency telephone number

Emergency number

: 1-888-575-9695 (Lucigen: Monday-Friday, 8:00AM-5:00PM)

## SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

GHS-US classification Not classified.

Not classified.

#### 2.2. Label elements

#### GHS-US labelling

No labelling applicable.

2.3. Other hazards

None.

#### 2.4. Unknown acute toxicity (GHS-US)

No data available.

#### **SECTION 3: Composition/information on ingredients**

3.2. Mixture Synonyms

: N/A

No components need to be disclosed according to the applicable regulations.

SECTION 4: First aid measures		
4.1. Description of first aid measures		
First-aid measures general	<ul> <li>If exposed or concerned, consult a physician. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.</li> </ul>	
First-aid measures after inhalation	: IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing. If not breathing, give artificial respiration. Consult a physician.	
First-aid measures after skin contact	: IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin for at least 15 minutes with tepid water. Consult a physician.	
First-aid measures after eye contact	: IF IN EYES: Immediately flush with plenty of tepid water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing. Consult a physician.	
First-aid measures after ingestion	: IF SWALLOWED: Rinse mouth thoroughly and consult a physician. Do not induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cups of water. Wash mouth out with water. Consult a physician.	
4.2. Most important symptoms and eff	ects, both acute and delayed	
Symptoms/injuries	: Not expected to present a significant acute hazard under anticipated conditions of normal use.	
Symptoms/injuries after inhalation	: May cause upper respiratory irratation.	
Symptoms/injuries after skin contact	: May cause skin irritation.	
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# **Green Fluorescent Dye.** Safety Data Sheet

6.1.1. For non-emergency personnel         Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       : Wear suitable protective Equipment as described in Section 8.         6.1.2. For emergency responders       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8. "Exposure controls/personal protection".         6.2. Environmental precautions       : Wear suitable protective sewers or public waters. Avoid release to the environment.         6.3. Methods and material for containment and cleaning up       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.         Methods for cleaning up       : Soak up spills with inert absorbants, such as sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       No additional information available         SECTION 7: Handling and storage       : Do not handle until all safety precautions have been read and understood. Wear recommended	Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
No additional information available SECTION 5: Firefighting meals Suitable extinguishing media Suitable extinguishing media Suitable extinguishing media Site Water spray, alcohol resistant foam, dry chemical, carbon dioxide, alcohol-resistant foam, or appropriate foam. 5. Special hazards arising from the substance or mixture Fire hazard Sto data available. Explosion hazard Sto data available. Sectivity Sto data available. Sectivity Sto data available. Sectivity Sto data available. Store at Sto	Symptoms/injuries after ingestion	: May cause gastrointestinal irritation.
SECTION 5: Firefighting measures         5.1. Extinguishing media         Suitable extinguishing media         Explosion hazard         Suitable extinguishing media         Suitable ex	4.3. Indication of any immediate m	nedical attention and special treatment needed
5.1. Extinguishing media       : Water spray, alcohol resistant foam, dry chemical, carbon dioxide, alcohol-resistant foam, or appropriate foam.         5.2. Special hazards arising from the substance or mixture       : No data available.         Explosion hazard       : No data available.         Reactivity       : No data available.         Status       : Nortisa         Status       : Status	No additional information available	
Suitable extinguishing media       : Water spray, alcohol resistant foam, dy chemical, carbon dioxide, alcohol-resistant foam, or appropriate foam.         5.2.       Special hazards arising from the substance or mixture         Fire hazard       : No data available.         Reactivity       : No data available.         Reactivity       : No data available.         State available       : No data available.         Reactivity       : No data available.         State available       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       : Venifieta area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1.1. For non-emergency personnel       Protective equipment         Protective equipment       : Wear suitable protective clubing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions       : Contain on ysills with likes or inert absorbents (e.g., sand or verniculite) to prevent migratior and entry into severs or streams.         6.3. Methods and material for containment and cleaning up       : Contain any spills with likes or inert absorbent	SECTION 5: Firefighting measu	res
appropriate foam.         5.2.       Special hazards arising from the substance or mixture         Frie hazard       No data available.         Explosion hazard       No data available.         Reactivity       No data available.         Reactivity       No data available.         Statistic of firefighters       Statistic of firefighters         Firefighting instructions       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       : Ventilate area. Evacuate area. Keep upwind. Spiil should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1.1. For non-emergency personnel       Protective equipment         Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       Prevent entry to severs and public waters. Notify authorities if liquid enters severs or public waters. Avoid release to the environment.         6.3. Methods and material for containment and cleaning up       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migratior and entry in severs or streams.         Methods for cleaning up       : Soak up spillis with dikes or inert absorbents (e.g., sand	5.1. Extinguishing media	
Fire hazard       : No data available.         Explosion hazard       : No data available.         Reactivity       : No data available.         Reactivity       : No data available.         Reactivity       : No data available.         Standard       : No data available.         Firefighting instructions       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       : Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipment and full chemical protective gear (see Section 8)         6.1. For non-emergency personnel       Protective equipment         Protective equipment       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions       : Contain any spills with dikes or inert absorbents (s.g., sand or vermiculite) to prevent migration and entry into severs or streams.         6.3. Methods and material for containment and cleaning up       : Soak up spills with ind shoorbants, such as sand or vermiculite) to prevent migration and entry into severs or streams.         No dattional information available       : Soak up spills with indit stoortain, such as and and enstood. Wear recommende	Suitable extinguishing media	
Explosion hazard       : No data available.         Reactivity       : No dangerous reactions known under normal conditions of use.         5.3.       Advice for firefighters         Firefighting instructions       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       .         6.1.       Personal precautions, protective equipment and emergency procedures         General measures       : Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew protective equipment         For non-emergency personnel       Protective equipment       : Wear Personal Proceutive equipment and full chemical protective (see Section 8)         6.1.2.       For emergency responders       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2.       Environmental precautions       : Contain any spills with ind taborbants, such as sand or vermiculite) to prevent migrator and entry into sewers or streams.         6.3.       Methods and material for containment and cleaning up         For containment       : Contain any spills with ind suborbants, such as sand or vermiculite) to prevent migrator and entry into sewers or streams. <td< td=""><td>5.2. Special hazards arising from t</td><td>the substance or mixture</td></td<>	5.2. Special hazards arising from t	the substance or mixture
Reactivity       : No dangerous reactions known under normal conditions of use.         5.3. Advice for firefighters       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       .         6.1. Personal precautions, protective equipment and emergency procedures         General measures       : Verified area. Executiate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1.1. For non-emergency personnel       Protective equipment         Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       Protective equipment         Protective equipment       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.3. Methods and material for containment and cleaning up       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into severs on streams.         Methods for cleaning up       : Soak up spills with dikes or inert absorbents (e.g., sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as p	Fire hazard	: No data available.
5.3. Advice for firefighters       Event self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       : Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1. For non-emergency personnel       Protective equipment         Protective equipment       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions       Prevent entry to severs and public waters. Notify authorities if liquid enters severs or public waters. Avoid release to the environment.         6.3. Methods and material for containment and cleaning up       For containment         For containment       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migratior and entry into severes or streams.         Methods for cleaning up       : Soak up spills with inert absorbents (e.g., sand or vermiculite) to prevent migratior and safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       No additional information available         Precautions for safe handling       : Do not handle until all safety precautions have been read and understood. Wear recommende personal prote	Explosion hazard	: No data available.
Firefighting instructions       : Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.         Protection during firefighting       : Do not enter fire area without proper protective equipment, including respiratory protection.         SECTION 6: Accidental release measures       :         General measures       : Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipment and full chemical protective gear (see Section 8)         6.1. For non-emergency personnel       Protective equipment         Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       Protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8. "Exposure controls/personal protection".         6.2. Environmental precautions       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8. "Exposure controls/personal protection".         6.3. Methods and material for containment and cleaning up       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migratior and end with iner absorbants, such as as and or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       : Do not handle until all safety precautions have been read and understood. Wear recommende personal protective equip	Reactivity	: No dangerous reactions known under normal conditions of use.
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SECTION 6: Accidental release measures         6.1. Personal precautions, protective equipment and emergency procedures         General measures       : Ventilate area. Evacuate area. Keep upwind. Spill should be handled by trained clean-up crew properly equipped with respiratory equipment and full chemical protective gear (see Section 8)         6.1. For non-emergency personnel       Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       Protective equipment       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions       Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.         6.3. Methods and material for containment and cleaning up       For containment       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.         Methods for cleaning up       : Soak up spills with inert absorbants, such as sand or vermiculite as soon as possible. Place in close waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       No additional information available         SECTION 7: Handling and storage       : Do not handle until all safety precautions have been read and understood. Wear recommende personal protective equipment. Wash ha	Firefighting instructions	
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6.1.1. For non-emergency personnel         Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders         Protective equipment       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions         Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.         6.3. Methods and material for containment and cleaning up         For containment       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migratior and entry into sewers or streams.         Methods for cleaning up       : Soak up spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.         Nethods for cleaning up       : Soak up spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration and entry into sewers or streams.         No additional information available       : Soak up spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migration a safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       No additional information available         SECTION 7: Handling and storage       : Do not handle until all safety precautions have been read and understood. Wear recommende personal protective equipment. Wash hands and other exposed areas wi	6.1. Personal precautions, protect	ive equipment and emergency procedures
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Protective equipment       : Wear Personal Protective Equipment as described in Section 8.         6.1.2. For emergency responders       Protective equipment         Protective equipment       : Wear suitable protective clothing, gloves, respirator, and eye or face protection. For further information refer to section 8: "Exposure controls/personal protection".         6.2. Environmental precautions       Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.         6.3. Methods and material for containment and cleaning up       : Contain any spills with dikes or inert absorbents (e.g., sand or vermiculite) to prevent migratior and entry into sewers or streams.         Methods for cleaning up       : Soak up spills with nert absorbants, such as sand or vermiculite as soon as possible. Place in closed waste container for disposal. This material and its container must be disposed of in a safe way, and as per local, state, and federal legislation.         6.4. Reference to other sections       No additional information available         SECTION 7: Handling and storage       : Do not handle until all safety precautions have been read and understood. Wear recommende personal protective equipment. Wash hands and other exposed areas with mild soap and wate after handling material, leaving the laboratory, before eating, drinking or smoking and when leaving work.         7.1. Conditions for safe storage, including any incompatibilities       : Do not handle until all safety precautions have been read and understood. Wear recommende personal protective equipment. Wash hands and other exposed areas with mild soap and wate afte	6.1.1. For non-emergency personne	1
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Contains no substances with occupational exposure limit values.

#### 8.2. **Exposure controls**

Appropriate engineering controls	:	Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended
		exposure limits. Ensure adequate ventilation, especially in confined areas. Emergency safety shower and eye wash station should be available. Avoid prolonged or repeated exposure.

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Personal protective equipment	: Gloves. Protective goggles. Laboratory Coat.
Hand protection	: Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suitable gloves for this specific application can be recommended by the glove supplier. Suggested glove materials are: Neoprene, Nitrile.
Eye protection	: Safety goggles should be worn when working with mixture. Avoid direct contact with eyes.
Skin and body protection	: Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.
Respiratory protection	: Use NIOSH/MSHA-approved dust/particulate respirator if irriration or other symptoms occur. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. Do not breathe in vapour, mist, or dust.

## **SECTION 9: Physical and chemical properties**

9.1. Information on basic physical ar	nd chemical properties		
Physical state	: Liquid		
Color	: Clear		
Odor	: No data available		
Odor Threshold	: No data available		
pH	: No data available		
Melting point	: No data available		
Freezing point	: No data available		
Boiling point	: No data available		
Flash point	: No data available		
Relative evaporation rate	: No data available		
Flammability (solid, gas)	: No data available		
Vapour pressure	: No data available		
Relative vapour density at 20 °C	: No data available		
Relative density	: No data available		
Solubility in Water	: No data available		
Log Pow	: No data available		
Log Kow	: No data available		
Auto-ignition temperature	: No data available		
Decomposition temperature	: No data available		
Viscosity, kinematic	: No data available		
Viscosity, dynamic : No data ava			
Explosive properties : No data availa			
Oxidising properties : No data availab			
Explosive limits	: No data available		
9.2. Other information			

None.

#### **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

#### 10.2. **Chemical stability**

Stable under use and storage conditions as recommended in section 7.

#### Possibility of hazardous reactions 10.3.

None known. Hazardous polymerization does not occur.

#### 10.4. Conditions to avoid

None known.

#### 10.5. Incompatible materials

None known.

#### 10.6. Hazardous decomposition products

Hazardous decomposition products may form under fire conditions. The nature of the decomposition products is not known.

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#### **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity	:	No data available
Skin corrosion/irritation	:	No data available
Serious eye damage/irritation	:	No data available
Respiratory or skin sensitisation	:	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 dientified as probablye, possible, or confirmed human carcinogen by IARC.
		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.
		NTP – No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticpated carcinogen by NTP.
		OSHA – No component of this product present at levels greater than or equal to 0.1% is identified as a carcinoen or potential carcinogen by OSHA.
Reproductive toxicity	:	No data available
Specific target organ toxicity (single exposure)	:	No data available
Specific target organ toxicity (repeated exposure)	:	No data available
Aspiration hazard	:	No data available
Symptoms/injuries after inhalation	:	May cause upper respiratory irratation.
Symptoms/injuries after skin contact	:	May cause skin irritation.
Symptoms/injuries after eye contact	:	Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion	:	May cause gastrointestinal irritation.
Additional Information	:	None.

## **SECTION 12: Ecological information**

12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

## No additional information available

#### 12.3. **Bioaccumulative potential**

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

SECTION 13: Disposal conside	rations
13.1. Waste treatment methods	
Waste treatment methods	<ul> <li>Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Product should not be discharged to surface waters without a NPDES permit.</li> </ul>
Waste disposal recommendations	: Dispose in a safe manner in accordance with local, state, and federal regulations. Avoid release to the environment.
SECTION 14: Transport information	ation
In accordance with DOT	

: No supplementary information available.

## Not hazardous for transport Additional information Other information

Transport by sea

No additional information available

#### Air transport

No additional information available

#### Safety Data Sheet

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#### **SECTION 15: Regulatory information**

#### 15.1. US Federal regulations

#### SARA 302 Components

No chemicals in this solution are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

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

#### SARA 311/312 Hazards

No SARA Hazards

#### **SARA 313**

This materials 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.

#### 15.2. International regulations

None.

#### 15.3. US State regulations

#### **California Proposition 65**

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

#### Massachusetts Right To Know Components

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

# New Jersey Right to Know Hazardous Substance List Water, CAS 7732-18-5

#### Pennsylvania Right to Know List Water, CAS 7732-18-5

SECTION 16: Other information	
Indication of changes	: Revision A: Updated format.
Revision date	: 10/31/2017
Other information	: Author:
NFPA health hazard	: 0 – Poses no health hazard, no precautions necessary and would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 0 – Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
HMIS III Rating	
Health	: 0
Flammability	: 0
Physical Hazard	: 0
Personal Protection	:

This information is disclosed to the best of Lucigen's knowledge. This document does not constitute a contractual relationship with product end users or handlers with respect to the possible presence of hazards in this item. Disposal should be in accordance with applicable regional, national and local laws and regulations.