25 July 2017

Kit Components

Product Code	Description
MC85200 and MC89010	MasterPure™ Complete DNA & RNA Purification Kit

Components

Red Cell Lysis Solution
Tissue & Cell Lysis Solution
2X T and C Lysis Solution
MPC Protein Precipitation Reagent
RNase A
RNase-Free DNase I
Proteinase K
RiboGuard™ RNase Inhibitor
1X DNase Buffer
TE Buffer

Red Cell Lysis Solution.

Safety Data Sheet

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

Revision date: 07/07/2017 Version: X.0

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

1.1. Product identifier

Product name : Red Cell Lysis Solution

Product form : Mixture

Product code : This component is part of the MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85102), MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100), MasterPure™ DNA Purification Kit for Blood Version II (MB711740, MB711400, MB711705).

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 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 : Red Cell Lysis Solution

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.

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.

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, carbon dioxide, dry chemical powder, or appropriate foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Emits toxic fumes under fire conditions.

Explosion hazard : Emits toxic fumes under fire conditions.

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 : 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 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 room temperature.

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.

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. 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
pH	:	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.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidizing agents, strong bases.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide.

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

DOT

Not dangerous goods

IMDG

Not dangerous goods

IATA

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

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.

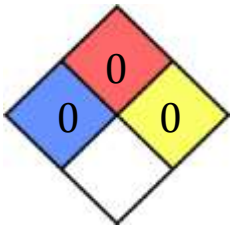
New Jersey Right to Know Hazardous Substance List
No components are subject to the New Jersey Right to Know Act.

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

SECTION 16: Other information

Indication of changes	:	Revision X.0: Updated format.
Revision date	:	07/07/2017
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.

Tissue and Cell Lysis Solution.

Safety Data Sheet

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

Revision date: 07/07/2017 Version: X.0

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

1.1. Product identifier

Product name : Tissue and Cell Lysis Solution

Product form : Mixture

Product code : This component is part of the MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85102), MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100), MasterPure™ DNA Purification Kit for Blood Version II (MB711740, MB711400, MB711705).

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

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

2.2. Label elements

GHS-US labelling

Pictogram :

Signal Word(s) : Danger

Hazard statement(s)

H315 : Causes skin irritation.

H318 : Causes serious eye damage.

H402 : Harmful to aquatic life.

Precautionary statement(s)

P264 : Wash skin thoroughy after handling.

P273 : Avoid release to the environment.

P280 : Wear protective gloves/eye protection/face protection.

P302+P352 : IF ON SKIN: Wash with soap and tepid water.

P305+P351+P338+P310 : IF IN EYES: Rinse with tepid water for 15 minutes. Remove contacts if present and it is easy to do so. Continue rinsing. Immediately call a POISION CONTROL CENTER or physician

P332+P313 : If skin irritation occurs: Wash with soap and tepid water. Contact a physician if irriation occurs.

2.3. Other hazards

Irritant to eyes, lungs, and skin. Target organs are lungs.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixture

Name	Product identifier	%
Sodium Dodecyl Sulfate, CAS # 151-21-3 EC# 205-788-1 Chemical Formula: $C_{12}H_{25}NaO_4S$ Molecular Weight: 288.38 g/mol	Ingredient in product.	0.5-3

Synonyms: Sodium lauryl sulphate solution, Lauryl sulfatesodium salt, SDS

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 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 : Causes irritation to respiratory tract. Symptoms may include coughing and shortness of breath. May cause allergic reaction in sensitive individuals. Upper respiratory irratation.

Symptoms/injuries after skin contact : Can be cause irritation and dryness. A rash may develop with continuous exposure. May cause allergic skin reactions.

Symptoms/injuries after eye contact : Causes irritation, redness, and pain.

Symptoms/injuries after ingestion : Large doses may cause gastrointestinal distress, nausea, and diarrhea.

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

Chronic exposure may cause skin effects. Persons with pre-existing disorders or impaired respiratory function may be more susceptible to the effects of the substance.

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 substance or mixture

Fire hazard : Emits toxic fumes under fire conditions.

Explosion hazard : Emits toxic fumes under fire conditions.

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 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 : 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 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 : Do not store with oxidizing materials. Store at room temperature.

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.

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. 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, either white and cloudy or colorless
Color	:	Colorless or white and cloudy
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	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 plymerization does not occur.

10.4. Conditions to avoid

Strong oxidants, heat flames, ignitions sources.

10.5. Incompatible materials

Strong oxidizing agents, acids.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, sulfur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	LD50 Oral – Rat - 1288 mg/kg LC50 Inhalation – Rat - >3900 mg/m3 for 1 hour
Skin corrosion/irritation	:	Human, Standard Draize, 25 mg/24 hour, mild
Serious eye damage/irritation	:	Rabbit, Standard Draize, 250 µg, mild
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, coughing, shortness of breath. May cause an allergic reaction in sensitive individuals..
Symptoms/injuries after skin contact	:	Mildly irritating to skin, causes dryness and rash upon continued expsoure.
Symptoms/injuries after eye contact	:	Causes irritation, redness, and pain.
Symptoms/injuries after ingestion	:	Large does may cause gastrointestinal distress, nausea, and diarrhea.
Additional Information	:	Prolonged or over-exposure may cause nausea, vomitting, chills, cramps, and lethargy. Lungs and headache. Lungs may be affected.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish : LC50 – Fathead minnow (fry) – 10.2 mg/L, 96 hours
: LC50 – Fathead minnow (juvenile) – 17 mg/L, 96 hours
: LC50 – Fathead minnow (adult) – 22.5 mg/L, 96 hours
: Static test LC50 – Rainbow Trout – 4.6 mg/L, 96 hours

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

No additional information available

IATA

No additional information available

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

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
Sodium Dodecyl Sulphate, CAS 151-21-3
Water, CAS 7732-18-5

Pennsylvania Right to Know List
Sodium Dodecyl Sulphate, CAS 151-21-3
Water, CAS 7732-18-5

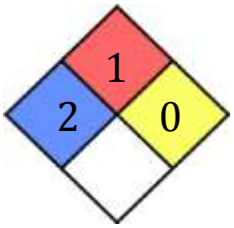
SECTION 16: Other information

Indication of changes	: Revision X.0: Updated format.
Revision date	: 07/07/2017
Other information	: Author:

H-Statements in section 2.

H315	: Causes skin irritation.
H319	: Causes serious eye irritation.

NFPA health hazard	: 2 – Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury.
NFPA fire hazard	: 1 – Material that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Flash point at or above 93.3°C.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	: 2
Flammability	: 1
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.

2X T&C Lysis Solution.

Safety Data Sheet

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

Revision date: 07/08/2017 Version: X.0

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

1.1. Product identifier

Product name : 2X T&C Lysis Solution

Product form : Mixture

Product code : This component is part of the MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85102), and MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100).

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

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

2.2. Label elements

GHS-US labelling

Pictogram :

Signal Word(s) : Danger

Hazard statement(s)

H315 : Causes skin irritation.

H318 : Causes serious eye damage.

H402 : Harmful to aquatic life.

Precautionary statement(s)

P264 : Wash skin thoroughy after handling.

P273 : Avoid release to the environment.

P280 : Wear protective gloves/eye protection/face protection.

P302+P352 : IF ON SKIN: Wash with soap and tepid water.

P305+P351+P338+P310 : IF IN EYES: Rinse with tepid water for 15 minutes. Remove contacts if present and it is easy to do so. Continue rinsing. Immediately call a POISION CONTROL CENTER or physician

P332+P313 : If skin irritation occurs: Wash with soap and tepid water. Contact a physician if irriation occurs.

2.3. Other hazards

Irritant to eyes, lungs, and skin. Target organs are lungs.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixture

Name	Product identifier	%
Sodium Dodecyl Sulfate, CAS # 151-21-3 EC# 205-788-1 Chemical Formula: $C_{12}H_{25}NaO_4S$ Molecular Weight: 288.38 g/mol Synonyms: Sodium lauryl sulphate solution, Lauryl sulfatesodium salt, SDS	Ingredient in product.	0.5-3

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 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 : Causes irritation to respiratory tract. Symptoms may include coughing and shortness of breath. May cause allergic reaction in sensitive individuals. upper respiratory irratation.

Symptoms/injuries after skin contact : Can be cause irritation and dryness. A rash may develop with continuous exposure. May cause allergic skin reactions.

Symptoms/injuries after eye contact : Causes irritation, redness, and pain.

Symptoms/injuries after ingestion : Large doses may cause gastrointestinal distress, nausea, and diarrhea.

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

Chronic exposure may cause skin effects. Persons with pre-existing disorders or impaired respiratory function may be more susceptible to the effects of the substance.

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 substance or mixture

Fire hazard : Emits toxic fumes under fire conditions.

Explosion hazard : Emits toxic fumes under fire conditions.

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 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 : 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 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 : Do not store with oxidizing materials. Store at room temperature.

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.

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. 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, either white and cloudy or colorless
Color	: Colorless or white and cloudy
Odor	: No data available
Odor Threshold	: No data available
pH	: 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 plymerization does not occur.

10.4. Conditions to avoid

Strong oxidants, heat flames, ignitions sources.

10.5. Incompatible materials

Strong oxidizing agents, acids.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, sulfur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	LD50 Oral – Rat - 1288 mg/kg LC50 Inhalation – Rat - >3900 mg/m3 for 1 hour
Skin corrosion/irritation	:	Human, Standard Draize, 25 mg/24 hour, mild
Serious eye damage/irritation	:	Rabbit, Standard Draize, 250 µg, mild
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, coughing, shortness of breath. May cause an allergic reaction in sensitive individuals..
Symptoms/injuries after skin contact	:	Mildly irritating to skin, causes dryness and rash upon continued expsoure.
Symptoms/injuries after eye contact	:	Causes irritation, redness, and pain.
Symptoms/injuries after ingestion	:	Large does may cause gastrointestinal distress, nausea, and diarrhea.
Additional Information	:	Prolonged or over-exposure may cause nausea, vomitting, chills, cramps, and lethargy. Lungs and headache. Lungs may be affected.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish : LC50 – Fathead minnow (fry) – 10.2 mg/L, 96 hours
: LC50 – Fathead minnow (juvenile) – 17 mg/L, 96 hours
: LC50 – Fathead minnow (adult) – 22.5 mg/L, 96 hours
: Static test LC50 – Rainbow Trout – 4.6 mg/L, 96 hours

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 dangerous goods

IMDG

Not dangerous goods

IATA

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

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
Sodium Dodecyl Sulphate, CAS 151-21-3
Water, CAS 7732-18-5

Pennsylvania Right to Know List
Sodium Dodecyl Sulphate, CAS 151-21-3
Water, CAS 7732-18-5

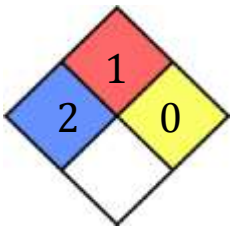
SECTION 16: Other information

Indication of changes	:	Revision X.0: Updated format.
Revision date	:	07/08/2017
Other information	:	Author:

H-Statements in section 2.

H315	:	Causes skin irritation.
H319	:	Causes serious eye irritation.

NFPA health hazard	:	2 – Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury.
NFPA fire hazard	:	1 – Material that require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur. Flash point at or above 93.3°C.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	2
Flammability	:	1
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.

MPC Protein Precipitation Reagent.

Safety Data Sheet

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

Revision date: 06/01/2017 Version: X.0

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

1.1. Product identifier

Product name : MPC Protein Precipitation Reagent

Product form : Mixture

Product code : This component is part of the MasterPure™ Yeast DNA Extraction Kit (MPY80010, MPY80200), MasterPure™ Gram Positive Complete DNA & RNA Purification Kits (MGP04020, MGP04100), MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85102), MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100), and MasterPure™ DNA Purification Kit for Blood Version II (MB711740, MB711400, MB711705).

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 a hazardous substance or mixture.

2.2. Label elements

GHS-US labelling

Not a hazardous substance or mixture.

2.3. Other hazards

None.

2.4. Unknown acute toxicity (GHS-US)

None.

SECTION 3: Composition/information on ingredients

3.1. Mixture

Name	Product identifier	%
Ammonium Acetate, CAS # 631-61-8 EC# 211-162-9 Chemical Formula: $C_2H_7NO_2$ Molecular Weight: 77.08 g/mol	Ingredient in product.	38.6

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: Large amounts of water should be consummed, 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	:	Causes irritation to respiratory tract. Symptoms may include coughing and shortness of breath. May cause allergic reaction in sensitive individuals. Upper respiratory irratation.
Symptoms/injuries after skin contact	:	Can be cause irritation and dryness. A rash may develop with continuous exposure. May cause allergic skin reactions.
Symptoms/injuries after eye contact	:	Causes irritation, redness, and pain.
Symptoms/injuries after ingestion	:	Large doses may cause gastrointestinal distress, nausea, temors, impared motor funtion, and diarrhea.

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

Chronic exposure may cause skin effects. Persons with pre-existing disorders or impaired respiratory function may be more susceptible to the effects of the substance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Water spray, alcohol-resistant foam, carbon dioxide, dry chemical powder, or appropriate foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	May emit 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 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	:	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". Avoid contact with skin and eyes.

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. Soap and water may be sued to clean up any residual material.

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	:	Keep container tightly closed, and in a dry, cool, and well-ventilated place. Do not store with incompatible substances.

SECTION 8: Exposure controls/personal protection

8.1. Control parametersContains 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.

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 as necessary.

Respiratory protection : 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, clear, colorless
Color	: Colorless
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	: 136°C
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

Strong oxidants, heat flames, ignitions sources.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

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 upper respiratory irratation, coughing, shortness of breath. May cause an allergic reaction in sensitive individuals.
Symptoms/injuries after skin contact	:	Mildly irritating to skin, may cause dryness and rash upon continued expsoure.
Symptoms/injuries after eye contact	:	May causes irritation, redness, and pain.
Symptoms/injuries after ingestion	:	Large doses may cause gastrointestinal distress, nausea, and diarrhea.
Additional Information	:	Large doses may cause gastrointestinal distress, nausea, temors, impared motor funtion, and diarrhea.

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish	:	Mosquito fish (fresh water) – TLm = 238 PPM/24 hours

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

No additional information available

IATA

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

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.

No additional information available

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
Ammounium acetate, CAS 631-61-8

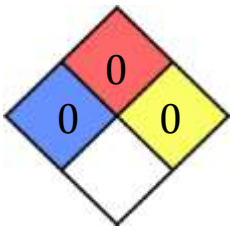
New Jersey Right to Know Hazardous Substance List
Ammounium acetate, CAS 631-61-8
Water, CAS 7732-18-5

Pennsylvania Right to Know List
Ammounium acetate, CAS 631-61-8
Water, CAS 7732-18-5

SECTION 16: Other information

Indication of changes : Revision X.0: Updated format.
Revision date : 06/01/2017
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 – Material 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.

RNase A Solution.

Safety Data Sheet

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

Revision date: 05/31/2017 Version: X.0

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

1.1. Product identifier

Product name : RNase A Solution

Product form : Mixture

Product code : This component is part of the MasterPure™ Yeast DNA Extraction Kits (MPY80010, MPY80200), MasterPure™ DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85102), MasterPure™ DNA Purification Kit for Blood Version II (MB711740, MB711400, MB711705), and MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100).

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 labelling applicable.

2.3. Other hazards

Irritant to eyes and skin. Target organs are kidneys.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixture

Name	Product identifier	%
Glycerol, CAS # 56-85-1 EC# 200-289-5 Chemical Formula: $C_3H_8O_3$ Molecular Weight: 92.09 g/mol Synonyms: Glycerin, glyceritol, glycyl alcohol, 1,2,3-Propanetril, Trihydroxypropane, 1,2,3-Trihydroxypropane	Ingredient in product.	50
Sodium Acetate, CAS # 127-09-3 EC# 204-823-8 Chemical Formula: $C_2H_3NaO_2$ Molecular Weight: 82.03 g/mol Synonyms: Acetic acidsodium salt	Ingredient in product.	<1%

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 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.

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 substance or mixture

Fire hazard : Emits toxic fumes under fire conditions.

Explosion hazard : Emits toxic fumes under fire conditions.

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 : 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 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 in a well-ventilated place. Keep container tightly closed. Do not store with sodium hydride, phosphorous trioxide, perchloric acid, chlorine, calcium hypochlorite, nitric acid, sulphuric acid, sodium peroxide, hydrogen peroxide, or potassium permanganate, as these substances may cause a violent or explosive reaction if they come in to direct contact. Mixture is hygroscopic.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Glycerol	56-81-5	TWA	10 mg/m3	USA. OSHA – TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	10 mg/3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract Irritation		
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants

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.

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. 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, viscous and colorless

Color : Colorless

Odor : Odorless

Odor Threshold : No data available

pH : No data available

Melting point : 20°C

Freezing point (50% aquesous solution) : -23°C

Boiling point : 182°C at 20 mm

Flash point : 176°C

Relative evaporation rate : No data available

Flammability (solid, gas) : No data available

Vapour pressure : 3 mm at 20°C

Relative vapour density at 20 °C : 3.1

Relative density : No data available

Solubility in Water : Miscible (>10%)

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

Specific gravity is 1.261.

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, strong bases.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: LD50 Oral – Rat - 12,600 mg/kg LC50 Inhalation – Rat - >570 mg/m3 for 1 hour
Skin corrosion/irritation	: Rabbit – 500 mg, mild irritation for 24 hours
Serious eye damage/irritation	: Rabbit – 126 mg, mild irritation Rabbit – 500 mg, mild irritation for 24 hours
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. 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	: RTECS: MA8050000. Prolonged exposure may cause nausea, vomitting, and headache. Kidneys may be affected.

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

Not hazardous for transport

Additional information

Other information : No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

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

European Union Directive 67/548/EEC: Irritant R36/38, irritant to eyes and skin. S26, in the case of eye contact, rinse immediately with plenty of water and consult a physician. S36, wear appropriate personal protective equipment.

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
Glycercol, CAS 56-81-5

New Jersey Right to Know Hazardous Substance List
Glycerol, CAS 56-81-5

Pennsylvania Right to Know List
Glycercol, CAS 56-81-5

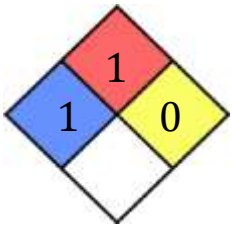
SECTION 16: Other information

Indication of changes : Revision X.0: Updated format.

Revision date : 05/31/2017

Other information : Author:

NFPA health hazard	:	1 – Exposure will cause irriation.
NFPA fire hazard	:	1 – Flash point is at or above 93.3°C.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	1
Flammability	:	1
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.

RNase-Free DNase I.

Safety Data Sheet

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

Revision date: 07/08/2017 Version: X.0

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

1.1. Product identifier

Product name : RNase-Free DNase I

Product form : Mixture

Product code : This component is part of the MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85201), MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100), QuickExtract™ RNA Extraction Kits (QER09015, QER090150).

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 labelling applicable.

2.3. Other hazards

Irritant to eyes and skin. Target organs are kidneys.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixture

Name	Product identifier	%
Glycerol, CAS # 56-85-1 EC# 200-289-5 Chemical Formula: $C_3H_8O_3$ Molecular Weight: 92.09 g/mol Synonyms: Glycerin, 1,2,3-Propanetril	Ingredient in product.	50%

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 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.

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 substance or mixture

Fire hazard : Emits toxic fumes under fire conditions.

Explosion hazard : Emits toxic fumes under fire conditions.

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 : 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 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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Glycerol	56-81-5	TWA	10 mg/m3	USA. OSHA – TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	10 mg/3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract Irritation		
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants

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.

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. 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, viscous and colorless

Color : Colorless

Odor : No data available

Odor Threshold : No data available

pH : 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, strong bases.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide.

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. 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	:	RTECS: MA8050000. Prolonged exposure may cause nausea, vomitting, and headache. Kidneys may be affected.

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

No additional information available

IATA

No additional information available

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

European Union Directive 67/548/EEC: Irritant R36/38, irritant to eyes and skin. S26, in the case of eye contact, rinse immediately with plenty of water and consult a physician. S36, wear appropriate personal protective equipment.

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
Glycercol, CAS 56-81-5

New Jersey Right to Know Hazardous Substance List
Glycerol, CAS 56-81-5

Pennsylvania Right to Know List
Glycercol, CAS 56-81-5

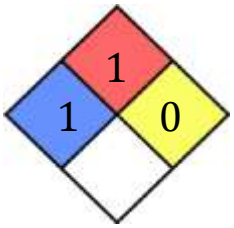
SECTION 16: Other information

Indication of changes : Revision X.0: Updated format.

Revision date : 07/08/2017

Other information : Author:

NFPA health hazard	:	1 – Exposure will cause irriation.
NFPA fire hazard	:	1 – Flash point is at or above 93.3°C.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	1
Flammability	:	1
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.

Proteinase K.

Safety Data Sheet

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

Revision date: 07/08/2017 Version: X.0

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

1.1. Product identifier

Product name : Proteinase K

Product form : Mixture

Product code : This component is part of the MasterPure™ Gram Positive DNA Purification Kits (MGP04020, MGP04100), MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85201), and MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100).

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 labelling applicable.

2.3. Other hazards

Irritant to eyes and skin. Target organs are kidneys.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixture

Name	Product identifier	%
Glycerol, CAS # 56-85-1 EC# 200-289-5 Chemical Formula: $C_3H_8O_3$ Molecular Weight: 92.09 g/mol Synonyms: Glycerin, 1,2,3-Propanetril	Ingredient in product.	50%
Proteinase K Not a hazardous ingredient at levels requiring disclosure by the OSHA Hazard Communication Standard (29 CFR 1910.1200).	Ingredient in product.	5%

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 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.

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 substance or mixture

Fire hazard : Emits toxic fumes under fire conditions.

Explosion hazard : Emits toxic fumes under fire conditions.

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 : 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 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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Glycerol	56-81-5	TWA	10 mg/m3	USA. OSHA – TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	10 mg/3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract Irritation		
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants

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.

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. 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, viscous and colorless

Color : Colorless

Odor : No data available

Odor Threshold : No data available

pH : 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, strong bases.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide.

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. 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	:	RTECS: MA8050000. Prolonged exposure may cause nausea, vomitting, and headache. Kidneys may be affected.

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

No additional information available

IATA

No additional information available

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

European Union Directive 67/548/EEC: Irritant R36/38, irritant to eyes and skin. S26, in the case of eye contact, rinse immediately with plenty of water and consult a physician. S36, wear appropriate personal protective equipment.

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
Glycercol, CAS 56-81-5

New Jersey Right to Know Hazardous Substance List
Glycerol, CAS 56-81-5

Pennsylvania Right to Know List
Glycercol, CAS 56-81-5

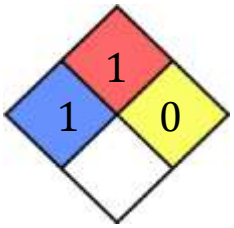
SECTION 16: Other information

Indication of changes : Revision X.0: Updated format.

Revision date : 07/08/2017

Other information : Author:

NFPA health hazard	:	1 – Exposure will cause irriation.
NFPA fire hazard	:	1 – Flash point is at or above 93.3°C.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	1
Flammability	:	1
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.

RiboGuard™ RNase Inhibitor.

Safety Data Sheet

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

Revision date: 07/08/2017 Version: X.0

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

1.1. Product identifier

Product name : RiboGuard™ RNase Inhibitor

Product form : Mixture

Product code : This component may be purchased using catalog numbers RG90925 and RG90910K, and is part of MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85201), MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100), QuickExtract™ RNA Extraction Kits (QER09015, QER090150).

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 labelling applicable.

2.3. Other hazards

Irritant to eyes and skin. Target organs are kidneys.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixture

Name	Product identifier	%
Glycerol, CAS # 56-85-1 EC# 200-289-5 Chemical Formula: $C_3H_8O_3$ Molecular Weight: 92.09 g/mol Synonyms: Glycerin, 1,2,3-Propanetril	Ingredient in product.	50%

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 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.

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 substance or mixture

Fire hazard : Emits toxic fumes under fire conditions.

Explosion hazard : Emits toxic fumes under fire conditions.

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 : 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 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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Glycerol	56-81-5	TWA	10 mg/m3	USA. OSHA – TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	10 mg/3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract Irritation		
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants
		TWA	15 mg/m3	USA. Occupational Exposure Limits (OSHA) – Table Z-1 Limits for Air Contaminants

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.

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. 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, viscous and colorless

Color : Colorless

Odor : No data available

Odor Threshold : No data available

pH : 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, strong bases.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide.

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. 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	:	RTECS: MA8050000. Prolonged exposure may cause nausea, vomitting, and headache. Kidneys may be affected.

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

No additional information available

IATA

No additional information available

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

European Union Directive 67/548/EEC: Irritant R36/38, irritant to eyes and skin. S26, in the case of eye contact, rinse immediately with plenty of water and consult a physician. S36, wear appropriate personal protective equipment.

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

Glycercol, CAS 56-81-5

New Jersey Right to Know Hazardous Substance List

Glycerol, CAS 56-81-5

Pennsylvania Right to Know List

Glycercol, CAS 56-81-5

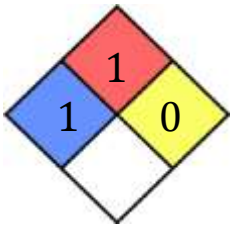
SECTION 16: Other information

Indication of changes : Revision X.0: Updated format.

Revision date : 07/08/2017

Other information : Author:

NFPA health hazard	:	1 – Exposure will cause irriation.
NFPA fire hazard	:	1 – Flash point is at or above 93.3°C.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	1
Flammability	:	1
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.

1X DNase Buffer

Safety Data Sheet

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

Revision date: 07/08/2017 Version: X.0

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

1.1. Product identifier

Product name : 1X DNase Buffer

Product form : Mixture

Product code : This component is part of the MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85201), and MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100).

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 a hazardous substance or mixture.

2.2. Label elements

Not a hazardous substance or mixture.

2.3. Other hazards

Irritant to eyes and skin.

2.4. Unknown acute toxicity (GHS-US)

No data available.

SECTION 3: Composition/information on ingredients

3.2. Mixture

Synonyms : Tris Acetate Solution

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.

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.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating, can cause eye irritation, redness, and pain.

Symptoms/injuries after ingestion : May cause gastrointestinal irritation.

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

Exposure may cause nausea, headache, vomiting, and central nervous system depression. Consult a physician if experiencing symptoms after exposure. Chronic or prolonged exposure may cause skin sensitivity, skin damage, eye irritation, eye damage, or allergic reaction.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray, carbon dioxide, dry chemical powder, alcohol-resistance foam, or other appropriate foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Emits irritating or toxic fumes under fire conditions (carbon oxides, magnesium oxides, nitrogen oxides, potassium oxides).

Explosion hazard : Emits irritating or toxic fumes under fire conditions (carbon oxides, magnesium oxides, nitrogen oxides, potassium oxides).

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). If liquid evaporates, avoid dusty conditions.

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 migration and entry into sewers or streams.

Methods for cleaning up : Soak up spills immediately 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 in a well-ventilated place. Keep container tightly closed. Do not store with strong oxidizing agents, strong acids, aluminium, copper, or brass.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace 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.
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 as needed to minimize bodily exposure.
Respiratory protection	:	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 containing dissolved material, powders, viscous
Color	:	Colorless
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	7.5
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 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 plymerization does not occur.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidiants, strong acids, aluminum, copper, and brass.

10.6. Hazardous decomposition products

Carbon monoxide, carbon dioxide, and 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 upper respiratory irratation, shortness of breath, and cough. May cause headaches.
Symptoms/injuries after skin contact	:	May cause skin irritation, redness, swelling, and pain, especially in the mucous membranes.
Symptoms/injuries after eye contact	:	May cause eye irritation, redness, blurred vision, and tearing.
Symptoms/injuries after ingestion	:	May cause irritation to the mouth, throat, and gastrointestinal tract.
Additional Information	:	Chronic ingestion or excessive amounts may cause nausea, vomitting, and diarrhea. Large quantities may cause weakness, collapse and coma. May be harmful by inhalation, ingestion, or skin absorption. May cause stomach.

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 releasing in to drains, sewers, and the environment.

SECTION 14: Transport information

DOT

Not hazardous for transport

IMDG

No additional information available

IATA

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations.

SARA 302

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

SARA 311/312 Hazards

No SARA Hazards

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.

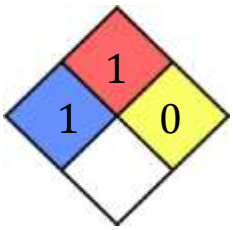
New Jersey Right to Know Hazardous Substance List
Water, 7732-18-5
2-Hydroxy-1,1-bis(hydroxymethyl)ethyl]ammonium acetate (Tris Acetate), CAS 6850-28-8

Pennsylvania Right to Know List
Water, 7732-18-5
2-Hydroxy-1,1-bis(hydroxymethyl)ethyl]ammonium acetate (Tris Acetate), CAS 6850-28-8

SECTION 16: Other information

Indication of changes	:	Revision X.0: Updated format.
Revision date	:	07/08/2017
Other information	:	Author:

NFPA health hazard	:	1 – Exposure would cause irritation with only minor residual injury.
NFPA fire hazard	:	1 – Materials that require considerable preheating, underal all ambient temperature conditions, before ignition and combustion can occur. Includes some finely divided suspended solids that do not require heating before ignition can occur. Flash point at or above 93.3°C.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	:	1
Flammability	:	1
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.

TE Buffer.

Safety Data Sheet

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

Revision date: 05/31/2017 Version: X.0

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

1.1. Product identifier

Product name : TE Buffer

Product form : Mixture

Product code : This component is part of the MasterPure™ Yeast DNA Extraction Kits (MPY80010, MPY80200), MasterPure™ Gram Positive Complete DNA & RNA Purification Kits (MGP04020, MGP04100), MasterPure™ Complete DNA and RNA Purification Kits (MC85200, MC89010), MasterPure™ DNA Purification Kit (MCD85201), MasterPure™ RNA Purification Kit (MCR85102), MasterPure™ Plant RNA Purification Kits (MPR09010, MPR09100), MasterPure™ DNA Purification Kit for Blood Version II (MB711740, MB711400, MB711705), and FosmidMAX™ DNA Purification Kit (FMAX046).

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 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 : TE Buffer Solution

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.

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.

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, 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 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 : 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 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 in a well-ventilated place. 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.

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. 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
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 available

9.2. Other information

Specific gravity is 1.261.

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

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

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. 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	:	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

Not hazardous for transport

Additional information

Other information	:	No supplementary information available.

Transport by sea

No additional information available

Air transport

No additional information available

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

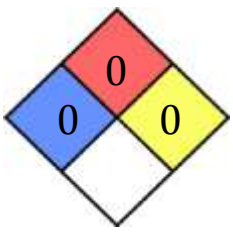
Pennsylvania Right to Know List

Water, CAS 7732-18-5

SECTION 16: Other information

Indication of changes	:	Revision X.0: Updated format.
Revision date	:	05/31/2017
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.