

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product name** T4 DNA Ligase  
**Product No** M0202

**Recommended use of the chemical and restrictions on use**

**Recommended use** This product is for research and development only  
**Uses advised against** No information available

**Details of the supplier of the safety data sheet**

**Supplier Address** New England BioLabs  
240 County Road  
Ipswich, MA 01938  
USA

**Company Phone Number** 978-927-5054  
800-632-5227 (toll free)

**Telefax** 978-921-1350

**E-mail address** info@neb.com

**Emergency telephone number**

**Emergency telephone** 978-927-5054  
800-632-5227 (toll free)  
9:00am - 5:00pm Monday-Friday EST

## 2. HAZARDS IDENTIFICATION

### Emergency Overview

May cause adverse kidney effects

**Appearance** Colorless

**Physical state** Liquid

**Odor** Mild

#### Principle Routes of Exposure

##### Acute toxicity

###### Inhalation

May be harmful if inhaled.

###### Eyes

Redness. May cause slight irritation.

###### Skin

Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

###### Ingestion

May cause drowsiness or dizziness. Ingestion causes burns of the upper digestive and respiratory tracts. Symptoms include burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

#### Chronic Effects

##### Chronic toxicity

No information available

##### Symptoms

No information available.

##### Aggravated Medical Conditions

Preexisting eye disorders. Kidney disorders. Skin disorders. Respiratory disorders.

##### Interactions with Other Chemicals

No information available

#### Environmental hazard

See Section 12: ECOLOGICAL INFORMATION

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Glycerol	56-81-5	30-60
Water	7732-18-5	30-60
Potassium Chloride	7447-40-7	0.1-1
Tris-HCl	1185-53-1	0.1-1
Dithiothreitol	3483-12-3	<0.1
Ethylenediamine tetraacetic acid	60-00-4	<0.1

The product contains no substances which at their given concentration, are considered to be hazardous to health

## 4. FIRST AID MEASURES

#### **General advice**

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, lie down. Do not breathe dust/fume/gas/mist/vapors/spray.

#### **Eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

#### **Skin contact**

Wash skin with soap and water.

#### **Inhalation**

Remove to fresh air.

#### **Ingestion**

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Clean mouth with water and drink afterwards plenty of water.

## 5. FIRE-FIGHTING MEASURES

### **Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### **Unsuitable extinguishing media**

CAUTION: Use of water spray when fighting fire may be inefficient.

### **Specific hazards arising from the chemical**

No information available

### **Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

<b>NFPA</b>	<b>Health hazards</b> 0	<b>Flammability</b> 0	<b>Stability</b> 0	<b>Special Hazard</b> -
<b>HMIS</b>	<b>Health hazards</b> 0	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal protection</b> -

## 6. ACCIDENTAL RELEASE MEASURES

### **Personal precautions**

Ensure adequate ventilation, especially in confined areas.

### **Personal protective equipment [PPE]**

Use personal protection recommended in Section 8.

### **Environmental precautions**

See Section 12 for additional Ecological Information.

### **Methods for containment**

Prevent further leakage or spillage if safe to do so.

### **Methods for cleaning up**

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. This material and its container must be disposed of as hazardous waste.

## 7. HANDLING AND STORAGE

### **Advice on safe handling**

Handle in accordance with good industrial hygiene and safety practice.

### **Storage temperature**

Refer to [www.neb.com](http://www.neb.com) for specific information.

### **Storage Conditions**

Keep/store only in original container.

### **Incompatible materials**

None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Glycerol 56-81-5	-	TWA: 15 mg/m <sup>3</sup> mist, total particulate TWA: 5 mg/m <sup>3</sup> mist, respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> mist, total particulate (vacated) TWA: 5 mg/m <sup>3</sup> mist, respirable fraction	-

### Other information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

### Engineering controls

Showers. Eyewash stations.

### Personal protective equipment (PPE)

#### Eye/face protection

Wear safety glasses with side shields (or goggles).

#### Skin and body protection

Wear suitable protective clothing and gloves.

#### Respiratory protection

Use in well ventilated areas.

#### General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Colorless
Odor	Mild

#### Property

pH

Melting point / freezing point

Boiling point / boiling range

Flash point

Evaporation rate

Flammability (solid, gas)

Flammability Limit in Air

Upper flammability limit

Lower flammability limit

Vapor pressure

Vapor density

Relative density

Specific gravity

Water solubility

Solubility in other solvents

Partition coefficient

Autoignition temperature

Decomposition temperature

Kinematic viscosity

Dynamic viscosity

#### Remarks • Method

Refer to [www.neb.com](http://www.neb.com) for specific information

No information available

No information available

No information available

No information available

No information available

No information available

No information available

No information available

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No information available

No information available

No information available

No information available

No information available

No information available

**Explosive properties**

No information available

**Oxidizing properties**

No information available

**Other information****Softening point**

No information available

**Molecular weight**

No information available

**VOC content (%)**

No information available

**Density**

No information available

**Bulk density**

No information available

**10. STABILITY AND REACTIVITY****Reactivity**

No data available.

**Stability**

Stable under normal conditions.

**Possibility of hazardous reactions**

Can react briskly with oxidizers - danger of explosion.

**Conditions to avoid**

Incompatible materials, Ignition sources, Heat.

**Incompatible materials**

Strong oxidizing agents.

**Hazardous decomposition products**Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Product information**

Product does not present an acute toxicity hazard based on known or supplied information.

**Inhalation**

Avoid breathing vapors or mists. May cause irritation of respiratory tract.

**Eye contact**

Redness. May cause slight irritation.

**Skin contact**

Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

**Ingestion**

May cause drowsiness or dizziness. Ingestion causes burns of the upper digestive and respiratory tracts. Symptoms include burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Glycerol	= 12600 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 570 mg/m <sup>3</sup> ( Rat ) 1 h
Water	> 90 mL/kg ( Rat )	-	-
Potassium Chloride	= 2600 mg/kg ( Rat )	-	-
Ethylenediamine tetraacetic acid	= 1700 mg/kg ( Rat )	-	-

**Chronic toxicity****Skin corrosion/irritation**

Mild

**Serious eye damage/eye irritation** Mild  
**Irritation** Mild  
**Corrosivity** Mild  
**Sensitization**  
    **Skin** No information available  
    **Respiratory** No information available  
**Germ cell mutagenicity** No information available  
**Carcinogenicity** No information available

**Reproductive toxicity** No information available  
**Developmental toxicity** No information available  
**Teratogenicity** No information available  
**STOT - single exposure** No information available  
**STOT - repeated exposure** No information available  
**Chronic toxicity** No information available  
**Subchronic toxicity** No information available  
**Target organ effects** Eyes, Kidneys, Respiratory system, Skin.  
**Neurological effects** No information available  
**Other adverse effects** No information available  
**Aspiration hazard** No information available

## 12. ECOLOGICAL INFORMATION

**Marine pollutant**  
 No information available

**Ecotoxicity**  
 No information available

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Glycerol		51 - 57: 96 h Oncorhynchus mykiss mL/L LC50 static	500: 24 h Daphnia magna mg/L EC50
Potassium Chloride	2500: 72 h Desmodesmus subspicatus mg/L EC50	1060: 96 h Lepomis macrochirus mg/L LC50 static 750 - 1020: 96 h Pimephales promelas mg/L LC50 static	825: 48 h Daphnia magna mg/L EC50 83: 48 h Daphnia magna mg/L EC50 Static
Ethylenediamine tetraacetic acid	1.01: 72 h Desmodesmus subspicatus mg/L EC50	44.2 - 76.5: 96 h Pimephales promelas mg/L LC50 static 34 - 62: 96 h Lepomis macrochirus mg/L LC50 static	113: 48 h Daphnia magna mg/L EC50 Static

**Persistence and degradability**  
 No information available

**Bioaccumulation**  
 No information available

**Mobility**  
 No information available

Chemical Name	Partition coefficient
Glycerol	-1.76

**Other adverse effects** No information available  
**Ozone depletion potential (ODP)** No information available

## 13. DISPOSAL CONSIDERATIONS

**Relevant Information**

Keep out of drains, sewers, ditches and waterways.

**Disposal considerations**

Use a licensed professional waste disposal service to dispose of this product. Product may be dissolved in a combustible solvent or absorbed onto a combustible material and burned by a chemical incinerator.

**Contaminated packaging**

Empty containers must be triple rinsed prior to disposal.

**14. TRANSPORT INFORMATION**

<b>DOT</b>	Not regulated
<b>TDG</b>	Not regulated
<b>MEX</b>	Not regulated
<b>ICAO (air)</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG</b>	Not regulated
<b>RID</b>	Not regulated
<b>ADR</b>	Not regulated
<b>ADN</b>	Not regulated

**15. REGULATORY INFORMATION**

**International Inventories**

<b>TSCA</b>	Complies
<b>DSL</b>	Complies
<b>NDSL</b>	Complies

Chemical Name	TSCA	DSL	NDSL
Glycerol	Present	X	Not Listed
Water	Present	X	Not Listed
Potassium Chloride	Present	X	Not Listed
Tris-HCl	Present	X	Not Listed
Dithiothreitol	Present	X	Not Listed
Ethylenediamine tetraacetic acid	Present	X	Not Listed

**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	No

Sudden release of pressure hazard No  
Reactive hazard No

#### CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ethylenediamine tetraacetic acid	5000 lb	-	-	X

#### CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ethylenediamine tetraacetic acid	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

#### International Regulations

Chemical Name	Carcinogenicity	Exposure Limits
Glycerol	-	Mexico: TWA 10 mg/m <sup>3</sup>

#### Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

## 16. OTHER INFORMATION

Prepared by EH&S Manager  
978-927-5054  
Prepared by New England BioLabs  
Issue date No data available  
Revision note SDS is valid 3 years from revision date. Contact info@neb.com for latest revision

#### Disclaimer

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**End of Safety Data Sheet**