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MATERIAL SAFETY DATA SHEET

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REVISION DATE	12/08

**Luciferase
Substrate
#E3308**

SECTION 1 –CHEMICAL INFORMATION

Product Name: LumiFlex™ GLuc Assay Kit

SECTION 2–CHEMICAL INFORMATION

1. ETHANOL	80-100%	Cas.	#64-17-5
2. HYDOCHLORIC ACID	< 1%	Cas.	#7647-01-0

SECTION 3–COMPOSITION/INFORMATION ON INGREDIENT

CHEMICAL NAME: ETHANOL

Information pertaining to particular for man and environment

R 11 Highly flammable.

R 36 Irritating to eyes

Classification system:

The classification is made according OSHA CFR29 1910.1200, European Community Directives (including latest editions of international substance lists) and is expanded upon by technical literature/supplier company information.

National Fire Protection Association (NFPA ratings scale 0-4)

Health = 0

Fire = 3

Reactivity = 0

Hazardous Material Identification System (HMIS Ratings scale 0-4)

Health = 0

Fire = 3

Reactivity = 0

OSHA Hazard Overview (Criteria according to 29CFR1910.1200)

Irritant

Flammable

Primary route(s) of entry:

Dermal

Inhalation

Oral

Target Organ(s):

May cause Liver damage (Hepatotoxin)

May affect Nervous system (Neurotoxin)

Additional information: Keep away from source of ignition.

SECTION 4 –FIRST AID MEASURES

ORAL EXPOSURE: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE: If inhaled, remove to fresh air. If breathing is difficult, call a physician.

DERMAL EXPOSURE: In case of contact, immediately wash skin with soap and copious amounts of water. Remove clothing and call a physician.

EYE EXPOSURE: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

SECTION 5—FIRE FIGHTING MEASURES

Extinguishing Media: Water Spray
Carbon Dioxide, dry Chemical powder or appropriate foam

Special Firefighting Procedures: Wear self contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Use water spray to cool-exposed containers.

Unusual Fire and Explosions Hazard (s):
Flammable Liquid
Vapor may travel considerable distance to source of ignition and flash back.
Container may explode under fire conditions.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

EVACUATE AREA:

PROCEDURE(S) OF PERSONAL PRECAUTION(S):
Wear self-contained breathing apparatus, chemical safety goggles, rubber boots, and heavy rubber gloves.
Wear disposable coveralls and discard them after use.

METHODS FOR CLEANING UP:
Cover with dry-lime, sand or soda ash. Place in covered containers using non-
Ventilate area and wash spill site after material pickup is complete.
Evacuate area. Shut off all sources of ignition.

SECTION 7 – HANDLING AND STORAGE

Handling

Information for safe handling: No special precautions are necessary if used correctly.
Information about protection against explosion and fires:
Keep ignition sources away-Do not smoke.
Protect against electrostatic charges.

Special Requirements

Hygroscopic

Storage

Requirements to be met by storerooms and receptacles: Store in a cool location.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptables.

SECTION 8—EXPOSURE CONTROLS /PPE

Engineering Controls: Safety shower and eye bath. Mechanical exhaust required.

Avoid Breathing Vapor

Personal Protective Equipment:

Eye:

Compatible safety goggles.

Respiratory

NIOSH/MSHA-approved respirator.

Keep away from heat, sparks and open flame

Hand:

Compatible chemical-resistant gloves.

Keep Tightly Closed

Store in a cool dry place.

SECTION 9— PHYSICAL AND CHEMICAL PROPERTIES

Flash Point: 62° C

Boiling Point: 78° C

Specific Gravity: 0.794

Swiss Poison Class: FREI

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable

Incompatibilities:

Strong oxidizing agents, alkali metals
ammonia and peroxides.

Hazardous Decomposition Products:

Carbon Monoxide, Carbon Dioxide, Sulfur Oxides

Hazardous Polymerization:

Will not occur.

Protect from moisture.

SECTION 11—TOXICOLOGICAL INFORMATION

Route of Exposure:

Skin Contact

May cause skin irritation

Eye Contact:

May cause eye irritation

Multiple Routes

May be harmful by inhalation, ingestion, or skin absorption

Materials may be irritating to mucous membranes and upper respiratory tract.

Chronic Effects: Target Organs, Kidney

Signs and Symptoms of Exposure: Prolonged exposure can cause: Nausea, headache and vomiting

RTECS #:MA8050000

To the best of our knowledge, the properties have not yet been thoroughly investigated.

IRRITATION DATA:

SKN-RBT 500 MG/24H MLD
 EYE-RBT 126 MG MLD
 EYE-RBT 500 MG/24H MLD

85JCAE -, 207, 1986
 BIOFX* 9-4/970
 85JCAE -, 207, 1986

TOXICITY DATA:

ORL-RAT LD50: 12600 MG/KG
 IHL-RAT LC50: > 570 MG/M3/1H
 IPR-RAT LD50: 4420 MG/KG
 SCU-RAT LD50: 100 MG/KG
 IVN-RAT LD50: 5566 MG/KG
 ORL-MUS LD50: 4090 MG/KG
 IPR-MUS LD50: 8700 MG/KG
 SCU-MUS LD50: 91 MG/KG
 IVN-MUS LD50: 4250 MG/KG
 ORL-RBT LD50: 27 GM/KG
 SKN-RBT LD50: >10 GM/KG
 IVN-RBT LD50: 53 GM/KG
 ORL-GPG LD50: 7750 MG/KG

FEPRA7 4, 142, 1945
 BIOFX* 9-4/970
 RCOCB8 56, 125, 1987
 NIIRDN 6, 215, 1982
 ARZNAD 26,1581,1976
 FRZKAP (6), 56, 1977
 ARZNAD 28,1579,1978
 NIIRDN 6, 215, 1982
 JAPMA8 39, 583, 1950
 DMDJAP 31, 276, 1959
 BIOFX* 9-4/970
 NIIRDN 6, 215, 1982
 JIHTAB 23, 259, 1941

TARGET ORGAN DATA:

Behavioral (headache)
 Gastrointestinal (nausea or vomiting)
 Kidney, ureter, bladder (changes in tubules)
 Kidney, ureter, bladder (changes in urine composition)
 Paternal effects (spermatogenesis)

Paternal effects (testes, epididymis, sperm duct)
 Effects on fertility (male fertility index)
 Effects on fertility (post-implantation mortality)
 Only selected registry of toxic effects of chemical substance (RTECS) data is presented here. See actual entry in RTECS

SECTION 12–ECOLOGICAL INFORMATION

Data not yet available

SECTION 13–DISPOSAL CONSIDERATIONS

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.
 Observe all federal state and local environmental regulations.
 Contact a licensed professional waste disposal service to dispose of this material.

SECTION 14–TRANSPORT INFORMATION**Domestic (LAND, D.O.T.)**

Proper Shipping Name: AEROSOLS, FLAMMABLE N.O.S. (ETHANOL, ISOPROPANOL, METHANOL)

HAZARD CLASS: NONE

UN/NA: UN1170

PACKING GROUP: N/A

INFORMATION REPORTED FOR PRODUCT/SIZE: 11OZ

SECTION 15–REGULATORY INFORMATION**EU Additional Classification**

S: 23 24/25

Safety Statements: Do not breathe vapor.
 Avoid contact with skin and eyes.:

Canada Regulatory Information

WHMIS Classification: This product has been classification in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR

DSL: Yes

NDSL: No

US Classification and Label Text:

US Statements: **Caution:** Avoid contact and inhalation.
 Target Organ(s): Kidneys

United States Regulatory Information:

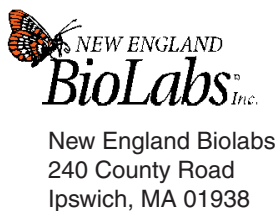
Sara Listed: No
TSCA Inventory Item: Yes Yes

SECTION 16–OTHER INFORMATION**DISCLAIMER**

For R&D use only. Not for drug, household or other uses.

The above information is believed to be correct but does not purport to be allinclusive and shall be used only as a guide.

New England Biolabs shall not be held liable for any damage resulting from handling or from contact with the above product.



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**Luciferase
Stabilizer
#E3308**

Msds Revision Date: 12/08

SECTION 1—PRODUCT

Product Name: LumiFlex™ GLuc Assay Kit

SECTION 2—COMPOSITION/INFORMATION ON INGREDIENT

Stabilizer

SECTION 3—HAZARDOUS IDENTIFICATION

Emergency Overview	HMIS Classification	NFPA Rating	
OSHA Hazards	Health: 1	Health: 1	Health: 1
Harmful by ingestion	Flammability: 1	Flammability: 1	Flammability: 1
Irritant	Physical Hazards: 0	Reactivity Hazard: 0	Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.

Skin: May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Ingestion: Harmful if swallowed.

SECTION 4—FIRST AID MEASURES

Oral Exposure: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure: If inhaled, remove to fresh air. If not breathing give artificial respiration.

If breathing is difficult, give oxygen. Call a physician.

Dermal Exposure: In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Assure adequate flushing by separating the eyelids with fingers. Call a physician.

SECTION 5—FIRE FIGHTING MEASURES

Extinguishing Media: Suitable: Water spray. Carbon Dioxide, dry chemical powder or appropriate foam.

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

Flash point: N/A

Ignition temperature: N/A

SECTION 6–ACCIDENTAL RELEASE MEASURES

Personal Precaution(s): Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Methods For Cleaning Up: Soak up with absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 7–HANDLING AND STORAGE

Handling: Avoid inhalation of vapour or mist. Normal measure measures of preventive fire protection

Storage: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8–EXPOSURE CONTROLS/PPE

Personal Protective Equipment: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

General Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9–PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form: liquid, clear

Color: light yellow

Safety data

pH	8.0
Melting point	
Boiling point	> 100 °C (> 212 °F)
Flash point	N/A
Ignition temperature	N/A
Lower explosion limit	N/A
Upper explosion limit	N/A
Water solubility	soluble

N/A = not available

SECTION 10–STABILITY AND REACTIVITY

Storage Stability: Stable under recommended storage conditions

Materials To Avoid: Strong acids, Strong bases, Strong oxidizing agents

Hazardous Decomposition Products: Hazardous decompositions under fire conditions. - Carbon oxides.

SECTION 11–TOXICOLOGICAL INFORMATION

Potential Health Effects

Skin Absorption: May be harmful if absorbed through the skin.

Skin Contact: May cause skin irritation.

Eye Contact: May cause eye irritation.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

Sign and Symptoms of Exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Irritation and corrosion

Skin-rabbit-Mild skin irritation-24 h

Eyes-rabbit-Severe eye irritation

SECTION 12–ECOLOGICAL INFORMATION

Elimination information (persistence and degradability) Biodegradability Result: 90% - Readily biodegradable.

Further information on ecology: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environ

SECTION 13–DISPOSAL CONSIDERATIONS

Appropriate Method of Disposal of Substance or Preparation

Product: Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging: Dispose of as unused product.

SECTION 14–TRANSPORT INFORMATION

DOT (US) Class: 9 Packing group: III

Proper shipping name: Environmentally hazardous substances, liquid, n.o.s.

IMDG Class: 9 Packing group: III EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Marine pollutant: Marine pollutant

IATA Class: 9 Packing group: III

Proper shipping name: Environmentally hazardous substance, liquid n.o.s.

SECTION 15–REGULATORY INFORMATION

OSHA Hazards

Harmful by ingestion., Irritant

TSCA Status On TSCA Inventory

DSL Status All components of this product are on the Canadian DSL list.

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. SARA 313

Components 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.

SARA 311/312 Hazards Acute Health Hazard

Massachusetts Right To Know Components No Components List

California Prop. 65 Components This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

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