



MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE PRODUCT AND COMPANY

- ◆ **Product name:** Luciferase Assay Kit
- ◆ **Catalog number:** LUC0100, LUC1000
- ◆ **Kit content :** Luciferase Cell Culture Lysis Buffer
Luciferase Assay Buffer
Luciferase Substrate
- ◆ **Contact:**

OZ Biosciences
 Parc Scientifique de Luminy – Zone Luminy Entreprises
 163 Avenue de Luminy – Case 922
 13288 Marseille cedex 9, France
 Phone: +33 (0)4.86.94.85.16 / Fax: +33 (0)4.86.94.85.15
www.ozbiosciences.com / contact@ozbiosciences.com

SECTION 2 – HAZARDS IDENTIFICATION

OSHA/HCS status :

Luciferase Assay Substrate	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Luciferase Assay Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Luciferase Cell Culture Lysis Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview

Luciferase Assay Substrate Luciferase Assay Buffer	
Luciferase Cell Culture Lysis Buffer	



WARNING!

Hazards Statements

Luciferase Assay Substrate	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
Luciferase Assay Buffer	NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
Luciferase Cell Culture Lysis Buffer	CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Precautions

Luciferase Assay Substrate	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
Luciferase Assay Buffer	No known significant effects or critical hazards. Avoid prolonged contact with eyes, skin and clothing.
Luciferase Cell Culture Lysis Buffer	Do not ingest. Do not get in eyes. Avoid breathing vapor or mist. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation

Luciferase Assay Substrate	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	Irritating to skin.

Eyes

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	Severely irritating to eyes. Risk of serious damage to eyes.

Ingestion

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	Harmful if swallowed

Target organs :

Luciferase Assay Substrate	Not available.
Luciferase Assay Buffer	Not available.
Luciferase Cell Culture Lysis Buffer	Contains material which may cause damage to the following organs: kidneys, upper respiratory tract, skin, eye, lens or cornea.

Potential chronic health effects

Carcinogenicity :

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	No known significant effects or critical hazards.

Chronic effects :

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	Contains material that may cause target organ damage, based on animal data.

Mutagenicity :

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	No known significant effects or critical hazards.

Teratogenicity :

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	No known significant effects or critical hazards.

Developmental effects :

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	No known significant effects or critical hazards.

Fertility effects :

Luciferase Assay Substrate	No known significant effects or critical hazards.
Luciferase Assay Buffer	No known significant effects or critical hazards.
Luciferase Cell Culture Lysis Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation :

Luciferase Assay Substrate	No specific data.
Luciferase Assay Buffer	No specific data.
Luciferase Cell Culture Lysis Buffer	Adverse symptoms may include the following: respiratory tract irritation, coughing

Ingestion :

Luciferase Assay Substrate	No specific data.
Luciferase Assay Buffer	No specific data.
Luciferase Cell Culture Lysis Buffer	No specific data.

Skin :

Luciferase Assay Substrate	No specific data.
Luciferase Assay Buffer	No specific data.
Luciferase Cell Culture Lysis Buffer	Adverse symptoms may include the following: Irritation redness

Eyes :

Luciferase Assay Substrate	No specific data.
Luciferase Assay Buffer	No specific data.
Luciferase Cell Culture Lysis Buffer	Adverse symptoms may include the following: pain or irritation, watering,redness

Medical conditions

aggravated by overexposure

Luciferase Assay Substrate	None known.
Luciferase Assay Buffer	None known.
Luciferase Cell Culture Lysis Buffer	Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

SECTION 3 – COMPOSITION, INFORMATION ON INGREDIENTS

Contains the following ingredients:

<u>Ingredient name</u>	<u>CAS number</u>	<u>%</u>	<u>EINECS</u>	<u>Classification</u>
Glycerol	56-81-5	10%	200-289-5	Skin. Irrit. 2 Eye Irrit. 2
DTT	3483-12-3	< 1%	248-531	Eye Irrit. 2A, H319
Triton X-100	9002-93-1	< 1%	N/A	H302 H319 H411

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section

SECTION 4 – FIRST AID MEASURES

Eye Contact

Luciferase Assay Substrate	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
Luciferase Assay Buffer	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
Luciferase Cell Culture Lysis Buffer	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at

least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin Contact

Luciferase Assay Substrat	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Luciferase Assay Buffer	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Luciferase Cell Culture Lysis Buffer	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Ingestion

Luciferase Assay Substrate	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
Luciferase Assay Buffer	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
Luciferase Cell Culture Lysis Buffer	Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Protection of first-aiders

Luciferase Assay Substrate	No action shall be taken involving any personal risk or without suitable training.
Luciferase Assay Buffer	No action shall be taken involving any personal risk or without suitable training.
Luciferase Cell Culture Lysis Buffer	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician

Luciferase Assay Substrate	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Luciferase Assay Buffer	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Luciferase Cell Culture Lysis Buffer	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 5 – FIRE FIGHTING MEASURES

- ◆ **Flammability of the product:** May be combustibile at high temperature.
- ◆ **Flash Point:** Not available.

- ◆ **Fire hazards in presence of various substances:** Not considered to be flammable.
- ◆ **Fire fighting media and instructions:** Use dry chemical, CO₂, water spray or foam.
- ◆ **Protective clothing (fire):** Be sure to use an approved/certified respirator or equivalent.
- ◆ **Hazardous thermal decomposition products:** May include carbon monoxide, carbon dioxide, nitrogen oxides.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Luciferase Assay Substrate	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).
Luciferase Assay Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).
Luciferase Cell Culture Lysis Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions

Luciferase Assay Substrate	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Luciferase Assay Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Luciferase Cell Culture Lysis Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for Cleaning up

Luciferase Assay Substrate	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Luciferase Assay Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Luciferase Cell Culture Lysis Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

SECTION 7 – HANDLING AND STORAGE

- ◆ **Handling:** Avoid breathing vapors or spray mists. Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment.
- ◆ **Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area. Refer to individual labels for storage temperature. Keep away from light. Avoid repeated freeze/thawing.
- ◆ **Intended use:** Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific application.

- ◆ **Packaging materials** Use original container. Keep Luciferase Substrate away from light

SECTION 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also **Personal protection**

Engineering measures :

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

- **Eyes:** Safety glasses.
- **Body:** Lab coat and gloves.
- **Respiratory:** Respirator is not needed under normal and intended conditions of use, if exposures are kept below established limits.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

- ◆ **Appearance and odor information:** N/A
- ◆ **Boiling point:** N/A
- ◆ **Flash Point:** N/A
- ◆ **Lower Explosion Limit (% by volume):** N/A
- ◆ **Upper Explosion Limit (% by volume):** N/A
- ◆ **Vapour pressure at 20°C:** N/A
- ◆ **Vapour density:** N/A
- ◆ **Solubility in water:** fully miscible
- ◆ **Specific Gravity (water = 1):** N/A
- ◆ **Percent volatile by volume:** N/A
- ◆ **Evaporation Rate:** N/A

SECTION 10 – STABILITY AND REACTIVITY

- ◆ **Stability and reactivity:** The product is stable under recommended storage conditions.
- ◆ **Conditions to avoid:** Exposure to light, air or moisture over prolonged periods.
- ◆ **Materials to avoid:** Strong acids, strong bases, strong oxidizing agents.
- ◆ **Hazardous polymerization:** Will not occur.
- ◆ **Hazardous decomposition products:** Will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

Product/ingredient	Result	Species	Dose
Glycerol	LD50 Oral	Rat	12600 mg/kg
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy	LD50 Oral	Rat	1800 mg/kg
Glycerol	Eyes Mild Irritant Skin Mild Irritant	Rabbit Rabbit	24h/500 mg 24h/500 mg
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy	Eyes moderate irritant Skin Mild Irritant	Rabbit Rabbit	24h 10µL 24h 500 µL

- ◆ **Chronic effects on humans:** Not available
- ◆ **Other toxic effects on humans:** Hazardous in case of ingestion, skin or eye contact.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity : No known significant effects or critical hazards

Aquatic ecotoxicity

Ingredient	Result	Species	Exposure
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi – Neonate	48 h
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 h
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 h

SECTION 13 – DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements. The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

SECTION 14 – TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

D.O.T.: Not regulated.

IATA.: Not regulated.

IMDG: Not regulated.

SECTION 15 – REGULATORY INFORMATIONS

HCS Classification	Luciferase Assay Substrate	Not regulated.
	Luciferase Assay Buffer	Not regulated.
	Luciferase Cell Culture Lysis Buffer	Irritating material Target organ effects

U.S. Federal regulations: SARA 302/304: No products were found.

SARA 311/312 Hazards identification: Immediate (acute) health hazard, Delayed (chronic) health hazard
TSCA 8(a) PAIR: Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) Not listed
Clean Air Act Section 602 Class I Substances Not listed
Clean Air Act Section 602 Class II Substances Not listed
DEA List I Chemicals (Precursor Chemicals) Not listed
DEA List II Chemicals (Essential Chemicals) Not listed

State Regulations

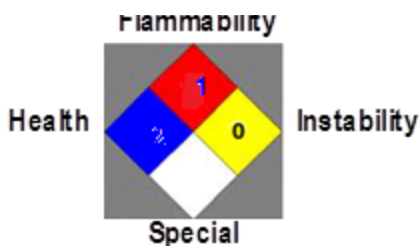
Massachussets	The following compound is listed: GLYCERINE MIST
New York	No compounds are listed
New Jersey	Following compounds are listed: GLYCERIN, GLYCEROL
Pennsylvania	Following compound is listed: GLYCEROL
California Prop 65	No products were found

SECTION 16 – OTHER INFORMATION

◆ **Hazardous Material Information System (U.S.A.):**

Health	2
Fire hazard	1
Reactivity	0
Personal protection	B

◆ **National Fire Protection Association (U.S.A.):**



0 = not significant
 1 = slight
 2 = moderate
 3 = high
 4 = extreme
 * = chronic

Hazard statements

H302 Harmful if swallowed
 H315 Causes skin irritation
 H319 Causes serious eye irritation
 H335 May cause respiratory irritation
 H373 Causes damage to organs through prolonged or repeated exposure category 2 (lungs)
 H372 Causes damage to organs through prolonged or repeated exposure category 1 (gastrointestinal) (oral)
 H411 Toxic to aquatic life with long-lasting effects

Precautionary statements

P264 Wash hands thoroughly after handling.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P302+P352 IF ON SKIN: wash with plenty of soap and water.

P332+P313 IF SKIN irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 IF eye irritation persists: Get medical advice/attention.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container to hazardous chemical waste.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

◆ **Revisions:**

Issue Date: 22-May-2014

Last Revision Date: 26-Aug-2016

Revision note: New format. updated Section 2,8,15,16.

◆ **Other Comments:**

To the best of our knowledge, the information contain herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Restriction of use: for research use only.