

Section 2. Hazard(s) identification

Signal word	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	No signal word. No signal word. DANGER
Hazard statements	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. H318 - Causes serious eye damage. H412 - Harmful to aquatic life with long lasting effects.
<u>Precautionary statements</u>		
Prevention	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not applicable. Not applicable. P280 - Wear eye or face protection. P273 - Avoid release to the environment.
Response	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not applicable. Not applicable. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
Storage	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not applicable. Not applicable. Not applicable.
Disposal	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not applicable. Not applicable. Not applicable.
Other hazards which do not result in classification	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	None known. None known. None known.

Section 3. Composition and ingredient information

Substance/mixture	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Mixture Mixture Mixture
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CAS number/other identifiers

Section 3. Composition and ingredient information

Ingredient name	% (w/w)	CAS number
Luciferase Cell Culture Lysis Buffer (5X) Reagent Glycerol Polyoxyethylene octyl phenyl ether	≥30 - ≤60 ≤7.1	56-81-5 9002-93-1

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.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Luciferase Assay Substrate Lyophilized	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Luciferase Assay Buffer (1X)	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
Inhalation	: Luciferase Assay Substrate Lyophilized	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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 (1X)	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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.
Skin contact	: Luciferase Assay Substrate Lyophilized	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Luciferase Assay Buffer (1X)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with

Section 4. First aid measures

Ingestion	: Luciferase Assay Substrate Lyophilized	plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Luciferase Assay Buffer (1X)	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. Causes serious eye damage.
Inhalation	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact	: Luciferase Assay Substrate Lyophilized	No specific data.
	: Luciferase Assay Buffer (1X)	No specific data.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	Adverse symptoms may include the following: pain watering redness
Inhalation	: Luciferase Assay Substrate Lyophilized	No specific data.
	: Luciferase Assay Buffer (1X)	No specific data.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No specific data.
Skin contact	: Luciferase Assay Substrate Lyophilized	No specific data.
	: Luciferase Assay Buffer (1X)	No specific data.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: Luciferase Assay Substrate Lyophilized	No specific data.
	: Luciferase Assay Buffer (1X)	No specific data.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	Adverse symptoms may include the following: stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	: Luciferase Assay Substrate Lyophilized	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 (1X)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	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.

Specific treatments	: Luciferase Assay Substrate Lyophilized	No specific treatment.
	: Luciferase Assay Buffer (1X)	No specific treatment.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No specific treatment.

Protection of first-aiders	: Luciferase Assay Substrate Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	: Luciferase Assay Buffer (1X)	No action shall be taken involving any personal risk or without suitable training.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media	: Luciferase Assay Substrate Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	Luciferase Assay Buffer (1X)	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Use an extinguishing agent suitable for the surrounding fire.
	: Luciferase Assay Substrate Lyophilized	None known.
Specific hazards arising from the chemical	Luciferase Assay Buffer (1X)	None known.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	None known.
	: Luciferase Assay Substrate Lyophilized	No specific fire or explosion hazard.
Hazardous thermal decomposition products	Luciferase Assay Buffer (1X)	In a fire or if heated, a pressure increase will occur and the container may burst.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	: Luciferase Assay Substrate Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides metal oxide/oxides
Special protective actions for fire-fighters	Luciferase Assay Buffer (1X)	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds
	: Luciferase Assay Substrate Lyophilized	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Luciferase Assay Buffer (1X)	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	: Luciferase Assay Substrate Lyophilized	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Luciferase Assay Buffer (1X)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 5. Firefighting measures

Luciferase Cell Culture Lysis Buffer (5X) Reagent Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Luciferase Assay Substrate Lyophilized 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 spilt material. Put on appropriate personal protective equipment.

Luciferase Assay Buffer (1X) 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 spilt material. Put on appropriate personal protective equipment.

Luciferase Cell Culture Lysis Buffer (5X) Reagent 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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

Luciferase Assay Substrate Lyophilized If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Luciferase Assay Buffer (1X) If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Luciferase Cell Culture Lysis Buffer (5X) Reagent If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions


Luciferase Assay Substrate Lyophilized Avoid dispersal of spilt 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 (1X) Avoid dispersal of spilt 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 (5X) Reagent Avoid dispersal of spilt 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). Water polluting material. May be harmful to the environment if released in large quantities.



Methods and material for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up	:  Luciferase Assay Substrate Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
	Luciferase Assay Buffer (1X)	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 (5X) Reagent	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

Precautions for safe handling

Protective measures	:  Luciferase Assay Substrate Lyophilized	Put on appropriate personal protective equipment (see Section 8).
	Luciferase Assay Buffer (1X)	Put on appropriate personal protective equipment (see Section 8).
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	:  Luciferase Assay Substrate Lyophilized	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	Luciferase Assay Buffer (1X)	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

<p>Conditions for safe storage, including any incompatibilities</p>	<p>Luciferase Assay Substrate Lyophilized</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
	<p>Luciferase Assay Buffer (1X)</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
	<p>Luciferase Cell Culture Lysis Buffer (5X) Reagent</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
<p>Luciferase Cell Culture Lysis Buffer (5X) Reagent</p> <p>Glycerol</p>	<p>Safe Work Australia (Australia, 1/2014).</p> <p>TWA: 10 mg/m³ 8 hours.</p>

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour 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.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

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.

Section 8. Exposure controls and personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Luciferase Assay Substrate Lyophilized Solid.
 Luciferase Assay Buffer (1X) Liquid.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent Liquid.
- Colour** : Luciferase Assay Substrate Lyophilized Colourless.
 Luciferase Assay Buffer (1X) Colourless.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent Colourless.
- Odour** : Luciferase Assay Substrate Lyophilized Characteristic.
 Luciferase Assay Buffer (1X) Characteristic.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent Characteristic.
- Odour threshold** : Luciferase Assay Substrate Lyophilized Not available.
 Luciferase Assay Buffer (1X) Not available.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent Not available.
- pH** : Luciferase Assay Substrate Lyophilized Not available.
 Luciferase Assay Buffer (1X) 8
 Luciferase Cell Culture Lysis Buffer (5X) Reagent 7.8
- Melting point** : Luciferase Assay Substrate Lyophilized Not available.
 Luciferase Assay Buffer (1X) 0°C (32°F)
 Luciferase Cell Culture Lysis Buffer (5X) Reagent Not available.

Section 9. Physical and chemical properties

Boiling point	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. 100°C (212°F) Not available.
Flash point	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. Closed cup: >100°C (>212°F)
Evaporation rate	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. Not available.
Flammability (solid, gas)	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. Lower: 0.9%
Vapour pressure	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. 0.01 kPa (0.075 mm Hg) [room temperature]
Vapour density	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. Not available.
Relative density	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. 1 Not available.
Solubility	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Insoluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Partially soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. Not available.
Auto-ignition temperature	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. 400°C (752°F)
Decomposition temperature	: Luciferase Assay Substrate Lyophilized Luciferase Assay Buffer (1X) Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available. Not available. Not available.

Section 9. Physical and chemical properties

Viscosity	: Luciferase Assay Substrate Lyophilized	Not available.
	: Luciferase Assay Buffer (1X)	Not available.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	Not available.

Section 10. Stability and reactivity

Reactivity	: Luciferase Assay Substrate Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
	: Luciferase Assay Buffer (1X)	No specific test data related to reactivity available for this product or its ingredients.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: Luciferase Assay Substrate Lyophilized	The product is stable.
	: Luciferase Assay Buffer (1X)	The product is stable.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	The product is stable.
Possibility of hazardous reactions	: Luciferase Assay Substrate Lyophilized	Under normal conditions of storage and use, hazardous reactions will not occur.
	: Luciferase Assay Buffer (1X)	Under normal conditions of storage and use, hazardous reactions will not occur.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Luciferase Assay Substrate Lyophilized	No specific data.
	: Luciferase Assay Buffer (1X)	No specific data.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No specific data.
Incompatible materials	: Luciferase Assay Substrate Lyophilized	May react or be incompatible with oxidising materials.
	: Luciferase Assay Buffer (1X)	May react or be incompatible with oxidising materials.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	May react or be incompatible with oxidising materials.
Hazardous decomposition products	: Luciferase Assay Substrate Lyophilized	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	: Luciferase Assay Buffer (1X)	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Luciferase Cell Culture Lysis Buffer (5X) Reagent				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-

Section 11. Toxicological information

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Luciferase Cell Culture Lysis Buffer (5X) Reagent	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Glycerol	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : Luciferase Assay Substrate Lyophilized Routes of entry anticipated: Oral, Dermal, Inhalation.
 Luciferase Assay Buffer (1X) Not available.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Luciferase Assay Substrate Lyophilized No known significant effects or critical hazards.
 Luciferase Assay Buffer (1X) No known significant effects or critical hazards.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent Causes serious eye damage.

Inhalation : Luciferase Assay Substrate Lyophilized No known significant effects or critical hazards.
 Luciferase Assay Buffer (1X) No known significant effects or critical hazards.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent No known significant effects or critical hazards.

Skin contact : Luciferase Assay Substrate Lyophilized No known significant effects or critical hazards.
 Luciferase Assay Buffer (1X) No known significant effects or critical hazards.
 Luciferase Cell Culture Lysis Buffer (5X) Reagent No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion	: Luciferase Assay Substrate Lyophilized	No known significant effects or critical hazards.
	Luciferase Assay Buffer (1X)	No known significant effects or critical hazards.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Luciferase Assay Substrate Lyophilized	No specific data.
	Luciferase Assay Buffer (1X)	No specific data.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Adverse symptoms may include the following: pain watering redness
Inhalation	: Luciferase Assay Substrate Lyophilized	No specific data.
	Luciferase Assay Buffer (1X)	No specific data.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	No specific data.
Skin contact	: Luciferase Assay Substrate Lyophilized	No specific data.
	Luciferase Assay Buffer (1X)	No specific data.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: Luciferase Assay Substrate Lyophilized	No specific data.
	Luciferase Assay Buffer (1X)	No specific data.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	Adverse symptoms may include the following: stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General	: Luciferase Assay Substrate Lyophilized	No known significant effects or critical hazards.
	Luciferase Assay Buffer (1X)	No known significant effects or critical hazards.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards.
Carcinogenicity	: Luciferase Assay Substrate Lyophilized	No known significant effects or critical hazards.
	Luciferase Assay Buffer (1X)	No known significant effects or critical hazards.
	Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity	: Luciferase Assay Substrate Lyophilized	No known significant effects or critical hazards.
	: Luciferase Assay Buffer (1X)	No known significant effects or critical hazards.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards.
Teratogenicity	: Luciferase Assay Substrate Lyophilized	No known significant effects or critical hazards.
	: Luciferase Assay Buffer (1X)	No known significant effects or critical hazards.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards.
Developmental effects	: Luciferase Assay Substrate Lyophilized	No known significant effects or critical hazards.
	: Luciferase Assay Buffer (1X)	No known significant effects or critical hazards.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards.
Fertility effects	: Luciferase Assay Substrate Lyophilized	No known significant effects or critical hazards.
	: Luciferase Assay Buffer (1X)	No known significant effects or critical hazards.
	: Luciferase Cell Culture Lysis Buffer (5X) Reagent	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Luciferase Assay Substrate Lyophilized Oral Dermal Inhalation (vapours)	50000 mg/kg 110000 mg/kg 1100 mg/l
Luciferase Cell Culture Lysis Buffer (5X) Reagent Oral	36640.8 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Luciferase Cell Culture Lysis Buffer (5X) Reagent Glycerol Polyoxyethylene octyl phenyl ether	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Luciferase Cell Culture Lysis Buffer (5X) Reagent Polyoxyethylene octyl phenyl ether	-	-	Readily

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
Luciferase Cell Culture Lysis Buffer (5X) Reagent			
Glycerol	-1.76	-	low
Polyoxyethylene octyl phenyl ether	4.86	-	high

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code .

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

Section 15. Regulatory information

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

[Inventory list](#)

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

Section 16. Any other relevant information

[History](#)

Date of issue/Date of revision	: 30/05/2017
Date of previous issue	: 24/12/2015.
Version	: 4

Key to abbreviations	: ADG = Australian Dangerous Goods ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations
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[Procedure used to derive the classification](#)

Classification	Justification
<input checked="" type="checkbox"/> Luciferase Cell Culture Lysis Buffer (5X) Reagent Eye Dam. 1, H318 Aquatic Acute 3, H402 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

[Notice to reader](#)

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