

Safety Data Sheet

Australia

Section 1. Identification

Product name

**Solution A Luminol Enhancer, 200ml; part of
'Amersham™ ECL™ start Western blotting
reagent, for 4000 cm² membrane'**

Catalogue Number

RPN3244



9 0 R P N 3 2 4 4

Component Number

RPN3244V1

Product type

Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Use in laboratories

Company details

Manufacturer

Cytiva
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA United Kingdom
+44 1494 508000

Supplier

Global Life Sciences Solutions Australia Pty Ltd
495 Blackburn Road
Mount Waverley VIC 3149
Australia
tfn: 1800 150 522

Emergency telephone number **000** and +61 2 9846 4000

Section 2. Hazard(s) identification

Classification of the substance  REPRODUCTIVE TOXICITY - Category 1
or mixture

GHS label elements

Hazard pictograms



Signal word

DANGER

Hazard statements

 May damage fertility or the unborn child.

Precautionary statements

Prevention

 Obtain special instructions before use. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.

Response

 If exposed or concerned: Get medical advice or attention.

Storage

Not applicable.

Disposal

 Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

Not applicable.



Other hazards which do not result in classification None known.

Section 3. Composition and ingredient information

Substance/mixture Mixture

Other means of identification Not available.

Ingredient name	% (w/w)	Identifiers
Ethanediol	1 - 3	CAS: 107-21-1 EC: 203-473-3
1,2,4-triazole	0.1 - 1	CAS: 288-88-0 EC: 206-022-9

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	Flush immediately 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. Get medical attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention. 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	Flush contaminated skin with 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. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Wash out mouth with water. Remove dentures if any. 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. Get medical attention. 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	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	No specific data.
Inhalation	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Skin contact	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Ingestion	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations

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



Notes to physician	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	No specific treatment.
Protection of first-aiders	<input checked="" type="checkbox"/> 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 Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters 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 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 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders 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 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).

Methods and material for containment and cleaning up

Small spill Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

Section 7. Handling and storage**Precautions for safe handling**

Protective measures Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. 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 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.



Conditions for safe storage, including any incompatibilities

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.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name

Ethanediol

Exposure limits

Safe Work Australia (Australia, 1/2024) Absorbed through skin.
STEL 15 minutes: 104 mg/m³. Form: Vapour.
TWA 8 hours: 52 mg/m³. Form: Vapour.
TWA 8 hours: 20 ppm. Form: Vapour.
STEL 15 minutes: 40 ppm. Form: Vapour.
TWA 8 hours: 10 mg/m³. Form: Particulate.

Biological exposure indices

No exposure indices known.

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.

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: safety glasses with side-shields.

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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state

Liquid.

Colour

Clear. Colourless.

Odour

Not available.

Odour threshold

Not available.

pH

9.4 [Conc. (% w/w): 100%]

Melting point/freezing point

Not available.

Boiling point or initial boiling point and boiling range

Not available.

Flash point

Not applicable.

Burning time

Not applicable.

Burning rate

Not applicable.



Evaporation rate	Not available.											
Flammability	Not available.											
Lower and upper explosive (flammable) limits	Not available.											
Vapour pressure	Not available.											
Vapour Pressure at 20°C												
Ingredient name	mm Hg	kPa	Method	mm Hg	kPa	Method						
Water	17.5	2.3										
ethanediol	0.09226	0.012										
Relative vapour density	Not available.											
Relative density	Not available.											
Solubility(ies)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding-bottom: 2px;">Media</th><th style="text-align: left; padding-bottom: 2px;">Result</th></tr> </thead> <tbody> <tr> <td style="padding-top: 2px;">cold water</td><td style="padding-top: 2px;">Easily soluble</td></tr> <tr> <td style="padding-top: 2px;">hot water</td><td style="padding-top: 2px;">Easily soluble</td></tr> </tbody> </table>						Media	Result	cold water	Easily soluble	hot water	Easily soluble
Media	Result											
cold water	Easily soluble											
hot water	Easily soluble											
Solubility in water	Not available.											
Partition coefficient: n-octanol/water	Not available.											
Auto-ignition temperature	Not available.											
Ingredient name	°C	°F	Method									
Ethanediol	398	748.4										
Decomposition temperature	Not available.											
SADT	Not available.											
Viscosity	Not available.											
Flow time (ISO 2431)	Not available.											
Particle characteristics												
Median particle size	Not applicable.											

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.					
Chemical stability	The product is stable.					
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.					
Conditions to avoid	No specific data.					
Incompatible materials	No specific data.					
Hazardous decomposition products	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						
Ethanediol	Result					
	Rat - Oral - LD50					
	4700 mg/kg					
1,2,4-triazole	Rat - Dermal - LD50					
	3129 mg/kg					
	Toxic effects: Behavioral - Somnolence (general depressed activity)					
	Lung, Thorax, or Respiration - Respiratory depression					
	Rat - Oral - LD50					
	1375 mg/kg					
	Toxic effects: Behavioral - Somnolence (general depressed activity)					
	Lung, Thorax, or Respiration - Respiratory depression					
Conclusion/Summary [Product]	Not available.					

Skin corrosion/irritation

Product/ingredient name						
1,2,4-triazole	Result					
	Rabbit - Skin - Mild irritant					
	<u>Amount/concentration applied:</u> 0.5 gm					
Conclusion/Summary [Product]	Not available.					



Serious eye damage/eye irritation

Product/ingredient name

2,4-triazole

Result

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 50 mg

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 100 mg

Conclusion/Summary [Product] Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] Not available.

Respiratory

Conclusion/Summary [Product] Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name

Ethanediol

Result

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
(Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact No known significant effects or critical hazards.

Inhalation No known significant effects or critical hazards.



Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	No specific data.
Inhalation	☒ Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Skin contact	☒ Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Ingestion	☒ Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations

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.

Conclusion/Summary [Product]	Not available.
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General	No known significant effects or critical hazards.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Reproductive toxicity	☒ May damage fertility or the unborn child.

Numerical measures of toxicity**Acute toxicity estimates**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
☒ Solution A Luminol Enhancer, 200ml; part of 'Amersham ECL start Western blotting reagent, for 4000 cm ² membrane'	25000	N/A	N/A	N/A	N/A
ethanediol 1,2,4-triazole	500 1320	N/A 3129	N/A N/A	N/A N/A	N/A N/A

Section 12. Ecological information**Toxicity**

Product/ingredient name	Result
☒ ethanediol	Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> Age: ≤7 days 8050 mg/l [96 hours] <u>Effect:</u> Mortality
1,2,4-triazole	Acute - LC50 - Fresh water Crustaceans - Water flea - <i>Ceriodaphnia dubia</i> - Neonate 6900 mg/l [48 hours] <u>Effect:</u> Mortality
	Acute - LC50 - Fresh water US EPA Fish - Rainbow trout,donaldson trout - <i>Oncorhynchus mykiss</i> <u>Weight:</u> 1.27 g 498 ppm [96 hours] <u>Effect:</u> Mortality



Conclusion/Summary[Product] Not available.**Persistence and degradability**

Not available.

Conclusion/Summary[Product] Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethanediol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Ethanediol	-1.36	10	Low
1,2,4-triazole	-0.58	1	Low

Mobility in soil

Soil/water partition coefficient 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	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
Proper shipping name	-	-	-	-
Class	-	-	-	-
Label				

PG

Environmental hazards	No.	No.	No.
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Additional information

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 IMO instruments Not available.

Section 15. Regulatory information**Standard for the Uniform Scheduling of Medicines 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.



9 5 2 9 1 1 7 1 8 3 1

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	Not determined.
United States	Not determined.
Canada inventory	Not determined.
China	Not determined.
Japan	Not determined.
New Zealand	Not determined.

Section 16. Any other relevant information

History

Date of printing	17 February 2026	Date of previous issue	27 November 2023
Date of issue	17 February 2026	Version	4.01

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ADG = Australian Dangerous Goods

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

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)

N/A = Not available

SUSMP = Standard Uniform Schedule of Medicine and Poisons

UN = United Nations

Procedure used to derive the classification

Classification	Justification
REPRODUCTIVE TOXICITY - Category 1	Calculation method



Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained 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.