



SAFETY DATA SHEET

United States

Section 1. Identification

Product name

Luminol/Enhancers; part of 'ECL™ Prime Western Blotting Detection Reagent'

Catalogue Number

RPN2232SK



9 0 R P N 2 2 3 2 S K

Other means of identification

Not available.

Product type

Liquid.

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

Identified uses

Analytical chemistry.
Laboratory chemicals
Scientific research and development

Supplier

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

Cytiva USA
100 Results Way
Marlborough, MA 01752
1-800-526-3593

In case of emergency

INFOTRAC - 24 Hour number: 1-800-535-5053
Outside of the United States, call 24 Hour number: 001-352-323-3500 (Call Collect)

Section 2. Hazards identification

OSHA/HCS status

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

Classification of the substance or mixture

Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 4%

GHS label elements

Signal word

No signal word.

Hazard statements

No known significant effects or critical hazards.

Precautionary statements

Prevention

Not applicable.

Response

Not applicable.

Storage

Not applicable.

Disposal

Not applicable.

Hazards not otherwise classified

None known.

Hazards identified when used

No known significant effects or critical hazards.



Section 3. Composition/information on ingredients

Substance/mixture	Mixture		
Other means of identification	Not available.		
Ingredient name	Synonyms	%	Identifiers
trometamol	1,3-Propanediol, 2-amino-2-(hydroxymethyl)-; Tris(hydroxymethyl)aminoethane; Tris(hydroxymethyl)aminomethane; Tris(hydroxymethyl)methylamine; TROMETHAMINE; 2-amino-2-hydroxymethylpropanediol; tri(hydroxymethyl)methylamine; 2-amino-2-(hydroxymethyl)propane-1,3-diol; 2-Amino-2-hydroxymethyl-1,3-propanediol; 1,3-Propanediol, 2-amino-2-hydroxymethyl-; 2-Amino-2-hydroxymethyl-1, 3-pro-panediol	≥1 - ≤5	CAS: 77-86-1
ethanediol	ethylene glycol; ethane-1,2-diol; 1,2-Ethanediol; Glycol; Monoethylene glycol; 1,2-Ethanediol (ethylene glycol); Glycol alcohol; 1,2-Dihydroxyethane; catalyst, containing N-(2-hydroxypropylammonium) diazabicyclo[2,2,2]octane-2-ethyl hexanoate, dissolved in ethane-1,2-diol; preparations consisting predominantly of ethylene glycol (CAS RN 107-21-1) and: — either diethylene glycol (CAS RN 111-46-6), dodecandioic acid and ammonia water, — or N,N-dimethylformamide (CAS RN 68-12-2), — or γ-butyrolactone (CAS RN 96-48-0), — or silicon oxide, — or ammonium hydrogen azelate, — or ammonium hydrogen azelate and silicon oxide, — or dodecandioic acid, ammonia water and silicon oxide, for the manufacture of electrolytic capacitors; 1,2-ethanediol	≥1 - ≤5	CAS: 107-21-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	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.
Inhalation	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.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	Wash out mouth with water. 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.

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	No specific data.
Skin contact	No specific data.



Ingestion No specific data.

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 No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting 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 spilled material. Put on appropriate personal protective equipment.

For emergency responders If specialized 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 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 and materials 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. 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. 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).

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 between the following temperatures: 18 to 30°C (64.4 to 86°F). 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.



Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits	
Ingredient name	
trometamol	
ethanediol	
Exposure limits	
None.	
CAL OSHA PEL (United States, 1/2025)	
C: 100 mg/m³. Form: vapor.	
C: 40 ppm. Form: vapor.	
OSHA PEL 1989 (United States, 3/1989)	
CEIL: 50 ppm.	
CEIL: 125 mg/m³.	
ACGIH TLV (United States, 1/2024) A4.	
STEL 15 minutes: 10 mg/m³. Form: Inhalable	
fraction. Aerosol only..	
STEL 15 minutes: 50 ppm. Form: Vapor fraction.	
TWA 8 hours: 25 ppm. Form: Vapor fraction.	
Biological exposure indices	
No exposure indices known.	
Appropriate engineering controls	
Good general ventilation should be sufficient to control worker exposure to airborne contaminants.	
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.	
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	Liquid.
Color	Clear. Colorless.
Odor	Not available.
Odor threshold	Not available.
pH	9.4
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.
Vapor pressure	Not available.

Vapor Pressure at 20°C

Vapor pressure at 50°C

	Ingredient name	mm Hg	kPa	Method	mm Hg	kPa	Method
	water	17.5	2.3				
	ethanediol	0.09226	0.012				
Relative vapor density	Not available.						
Relative density	Not available.						
Solubility(ies)							
	Media	Result					
	cold water	Easily soluble					
	hot water	Easily soluble					
Solubility in water	Not available.						
Partition coefficient: n-octanol/ water	Not applicable.						
Auto-ignition temperature	Not available.						
	Ingredient name	°C	°F	Method			
	ethanediol	398	748.4				
Decomposition temperature	Not available.						
SADT	Not available.						
Viscosity	Dynamic (room temperature): Not available. Kinematic (room temperature): Not available. Kinematic (40°C (104°F)): Not available.						
Flow time (ISO 2431)	Not available.						
<u>Particle characteristics</u>							
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	Result
ethanediol	Rat - Oral - LD50 4700 mg/kg

Conclusion/Summary [Product]	Not available.
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Skin corrosion/irritation

Not available.

Conclusion/Summary [Product]	Not available.
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Serious eye damage/eye irritation

Not available.

Conclusion/Summary [Product]	Not available.
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Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product]	Not available.
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Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product]	Not available.
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Respiratory

Conclusion/Summary [Product]	Not available.
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Germ cell mutagenicity

Not available.

Conclusion/Summary [Product]	Not available.
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Carcinogenicity

Not available.

Conclusion/Summary [Product]	Not available.
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Reproductive toxicity

Not available.

Conclusion/Summary [Product]	Not available.
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Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	Not available.
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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	No specific data.
Skin contact	No specific data.
Ingestion	No specific data.

Delayed and immediate effects and also 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	No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Luminol/Enhancers; part of 'ECL Prime Western Blotting Detection Reagent'	25000	N/A	N/A	N/A	N/A
ethanediol	500	N/A	N/A	N/A	N/A

Section 12. Ecological information**Toxicity**

Product/ingredient name ethanediol	Result Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> Age: ≤7 days 8050 mg/l [96 hours] Effect: Mortality Acute - LC50 - Fresh water Crustaceans - Water flea - <i>Ceriodaphnia dubia</i> - Neonate 6900 mg/l [48 hours] Effect: Mortality
Conclusion/Summary [Product]	Not available.

Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
trometamol	-	-	Readily
ethanediol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
ethanediol	-1.36	10	Low

Mobility in soil

Soil/Water partition coefficient	Not available.
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Other adverse effects	No known significant effects or critical hazards.
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Section 13. Disposal considerations

Disposal methods

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. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Product is not regulated as dangerous goods for transport.

Section 15. Regulatory information

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 311: Hydrochloric acid

TSCA 12(b) - Chemical export notification

Not applicable.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)

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

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Hydrochloric acid	0.01	Yes.	500	50.8	5000	508.2
SARA 304 RQ			50000000 lbs / 22700000 kg			

SARA 311/312

Classification Not applicable.

Composition/information on ingredients

Name	%	Classification
trometamol	3 - 5	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A
ethanediol	1 - 3	ACUTE TOXICITY (oral) - Category 4

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	ethanediol	107-21-1	1 - 3
Supplier notification	ethanediol	107-21-1	1 - 3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts	The following components are listed: ETHYLENE GLYCOL
New York	The following components are listed: Ethylene glycol
New Jersey	The following components are listed: ETHYLENE GLYCOL
Pennsylvania	The following components are listed: 1,2-ETHANEDIOL

California Prop. 65



WARNING: This product can expose you to Ethylene Glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Ethylene Glycol	-	Yes.

International regulations



Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

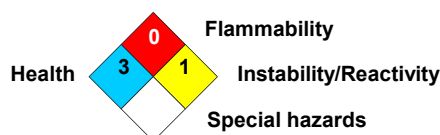
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list**United States** Not determined.**Canada inventory** Not determined.**Section 16. Other information****National Fire Protection Association (U.S.A.)****Procedure used to derive the classification**

Classification	Justification
Not classified.	

History

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Key to abbreviations

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
 UN = United Nations

References

Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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