

# SAFETY DATA SHEET

New Zealand

## Section 1. Identification

Product name

**Detection reagent 2; part of 'ECL™ direct nucleic acid labelling and detection system'**

Catalogue Number

RPN3000



Component Number

RPN3004V2

Other means of identification

Not available.

Product type

Liquid.

### Identified uses

Analytical chemistry.  
Use in laboratories  
Scientific research and development

### Supplier

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

Cytiva New Zealand  
Buddle Findlay, Level 18, Pricewaterhousecooper Tower,  
188 Quay Street,  
Auckland, Auckland, 1010  
New Zealand

Person who prepared the SDS :

sds\_author@cytiva.com

Emergency telephone number (with hours of operation)

0800 733 893  
(10am - 7pm)

## Section 2. Hazards identification

HSNO Classification

6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY (Fertility) - Category B  
6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY (Unborn child) - Category B

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 97.5%

This material is classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

### GHS label elements

Signal word

Warning

Hazard statements

Suspected of damaging fertility or the unborn child.

Precautionary statements

General

Do not apply directly into or onto water. Take all reasonable steps to ensure that the substance does not cause any significant adverse effects to the environment beyond the application area.

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response

IF exposed or concerned: Get medical advice/attention.

Storage

Store locked up.

Disposal

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

Symbol



**Other hazards which do not result in classification** None known.

### Section 3. Composition/information on ingredients

**Substance/mixture** Mixture

**Other means of identification** Not available.

Ingredient name	% (w/w)	Identifiers
Boric acid	0.5 - 1	CAS: 10043-35-3 EC: 233-139-2
Dimethyl sulphoxide	<0.1	CAS: 67-68-5 EC: 200-664-3

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

<b>Inhalation</b>	If inhaled, remove to fresh air. Get medical attention if symptoms appear.
<b>Ingestion</b>	Do not ingest. Get medical attention if symptoms appear.
<b>Skin contact</b>	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Eye contact</b>	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. Get medical attention if irritation occurs.

#### Most important symptoms/effects, acute and delayed

##### Potential acute health effects

<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Eye contact</b>	No known significant effects or critical hazards.

##### Over-exposure signs/symptoms

<b>Inhalation</b>	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
<b>Ingestion</b>	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
<b>Skin</b>	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
<b>Eyes</b>	No specific data.

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

<b>Specific treatments</b>	Not available.
<b>Notes to physician</b>	No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

### Section 5. Firefighting measures

#### Extinguishing media

<b>Suitable</b>	Use an extinguishing agent suitable for the surrounding fire.
<b>Not suitable</b>	None known.
<b>Specific hazards arising from the chemical</b>	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	No specific data.



Detection reagent 2; part of 'ECL™ direct nucleic acid labelling and detection system'		RPN3000
<b>Hazchem code</b>	Not available.	
<b>Special precautions for fire-fighters</b>	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.	
<b>Special protective equipment for fire-fighters</b>	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

<b>For non-emergency personnel</b>	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.
<b>For emergency responders</b>	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 (see Section 8).
<b>Environmental precautions</b>	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

<b>Small spill</b>	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.
<b>Large spill</b>	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. 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

<b>Protective measures</b>	Put on appropriate personal protective equipment (see Section 8). 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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. 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.
<b>Advice on general occupational hygiene</b>	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.
<b>Conditions for safe storage, including any incompatibilities</b>	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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<b>Ingredient name</b>	<b>Exposure limits</b>
Boric acid	ACGIH TLV (United States, 1/2024) [Borate compounds, Inorganic] A4. TWA 8 hours: 2 mg/m³. Form: Inhalable fraction. STEL 15 minutes: 6 mg/m³. Form: Inhalable fraction.
<b>Biological exposure indices</b>	
No exposure indices known.	
<b>Appropriate engineering controls</b>	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.

<b>Environmental exposure controls</b>	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.
<b>Individual protection measures</b>	
<b>Hygiene measures</b>	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.
<b>Eye/face protection</b>	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.
<b>Skin protection</b>	
<b>Hand protection</b>	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.
<b>Body protection</b>	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.
<b>Other skin protection</b>	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.
<b>Respiratory protection</b>	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## 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

<b>Physical state</b>	Liquid.
<b>Colour</b>	Colourless.
<b>Odour</b>	Odourless.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Boiling point or initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not applicable.
<b>Burning time</b>	Not applicable.
<b>Burning rate</b>	Not applicable.
<b>Evaporation rate</b>	Not available.
<b>Flammability</b>	Not considered to be flammable .
<b>Lower and upper explosive (flammable) limits</b>	Not available.
<b>Vapour pressure</b>	Not available.

#### Vapour Pressure at 20°C

#### Vapour pressure at 50°C

	Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
		mm Hg	kPa	Method	mm Hg	kPa	Method
	water	17.5	2.3				
<b>Relative vapour density</b>	Not available.						
<b>Relative density</b>	Not available.						
<b>Solubility(ies)</b>							
	<b>Media</b>	<b>Result</b>					
	cold water	Easily soluble					
	hot water	Easily soluble					
<b>Solubility in water</b>	Not available.						
<b>Miscible with water</b>	Yes.						
<b>Partition coefficient: n-octanol/ water</b>	Not applicable.						
<b>Auto-ignition temperature</b>	Not available.						
<b>Decomposition temperature</b>	Not available.						
<b>SADT</b>	Not available.						
<b>Viscosity</b>	Not available.						



**Flow time (ISO 2431)** Not available.**Particle characteristics****Median particle size** Not applicable.**Section 10. Stability and reactivity**

<b>Reactivity</b>	No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	The product is stable.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	No specific data.
<b>Incompatible materials</b>	No specific data.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Section 11. Toxicological information****Information on likely routes of exposure**

<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Eye contact</b>	No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

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

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

<b>Product/ingredient name</b>	<b>Result</b>
Boric acid	<b>Rat - Oral - LD50</b> 2660 mg/kg
Dimethyl sulphoxide	<b>Rat - Oral - LD50</b> 14500 mg/kg <u>Toxic effects:</u> Eye - Hemorrhage Eye - Conjunctive irritation <b>Rat - Dermal - LD50</b> 40000 mg/kg

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

Not available.

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

Not available.

**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.

**Potential chronic health effects**

<b>General</b>	No known significant effects or critical hazards.
<b>Inhalation</b>	No known significant effects or critical hazards.
<b>Ingestion</b>	No known significant effects or critical hazards.
<b>Skin contact</b>	No known significant effects or critical hazards.
<b>Eye contact</b>	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	Suspected of damaging fertility.

**Chronic toxicity**

Not available.

**Conclusion/Summary[Product]** Not available.

**Carcinogenicity**

Not available.

**Conclusion/Summary[Product]** Not available.

**Germ cell mutagenicity**

Not available.

**Conclusion/Summary[Product]** Not available.

**Reproductive toxicity**

Not available.

**Conclusion/Summary[Product]** Not available.

<b>Ingredient name</b>	<b>Conclusion/Summary</b>
Boric acid	Reproductive toxin

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**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)
Boric acid	2660	N/A	N/A	N/A	N/A
Dimethyl sulphoxide	14500	40000	N/A	N/A	N/A

Section 12. Ecological information

**Ecotoxicity** No known significant effects or critical hazards.

**Aquatic and terrestrial toxicity**

Product/ingredient name	Result
Boric acid	<b>Chronic - NOEC - Fresh water</b> Fish - Rainbow trout,donaldson trout - <i>Oncorhynchus mykiss</i> 2100 µg/l [87 days] Effect: Mortality <b>Chronic - NOEC - Fresh water</b> Daphnia - Water flea - <i>Daphnia magna</i> Age: <24 hours 6000 µg/l [21 days] Effect: Reproduction <b>Acute - LC50 - Fresh water</b> US EPA Crustaceans - Water flea - <i>Ceriodaphnia dubia</i> Age: <24 hours 45.5 mg/l [48 hours] Effect: Mortality <b>Acute - LC50 - Marine water</b> OECD Fish - Red sea bream - <i>Pagrus major</i> Weight: 0.6 g 75 mg/l [96 hours] Effect: Mortality <b>Acute - LC50 - Fresh water</b> Fish - Fathead minnow - <i>Pimephales promelas</i> Age: 31 days; Size: 15.8 mm; Weight: 0.062 g 34 g/l [96 hours] Effect: Mortality <b>Chronic - NOEC - Fresh water</b> Fish - Guppy - <i>Poecilia reticulata</i> - Adult 6 ppb [16 weeks] Effect: Mortality <b>Acute - EC50 - Marine water</b> OECD Algae - Diatom - <i>Nitzschia pungens</i> 18.299 mg/l [96 hours] Effect: Population <b>Chronic - NOEC - Marine water</b> OECD Algae - Diatom - <i>Nitzschia pungens</i> 3323 µg/l [96 hours] Effect: Population <b>Acute - LC50 - Marine water</b> OECD Crustaceans - Brine shrimp - <i>Artemia sp.</i> Age: ≤24 hours 37.437 mg/l [48 hours] Effect: Mortality <b>Chronic - NOEC - Fresh water</b> OECD Daphnia - Water flea - <i>Daphnia magna</i> - Juvenile (Fledgling, Hatchling, Weanling) Age: 6 days 100 µl/l [21 days] Effect: Reproduction
Dimethyl sulphoxide	

**Conclusion/Summary[Product]** Not available.

**Persistence/degradability**

Not available.

**Conclusion/Summary[Product]** Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
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Dimethyl sulphoxide	-	31%; 28 day(s)	Not readily
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**Bioaccumulative potential**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
boric acid	-1.09	-	Low

**Mobility in soil**

Soil/water partition coefficient	Not available.
Other adverse effects	No known significant effects or critical hazards.

**Section 13. Disposal considerations**

<b>Disposal methods</b>	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.
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**Section 14. Transport information**

Regulatory information	UN number	Proper shipping name	Classes	PG*
New Zealand Class	Not regulated.	-	-	-
		No.		
IATA Class	Not regulated.	-	-	-
		-		
		No.		
IMDG Class	Not regulated.	-	-	-
		No.		

PG\* : Packing group

<b>Special precautions for user</b>	<b>Transport within user's premises:</b> 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.
<b>Transport in bulk according to IMO instruments</b>	Not available.

**Section 15. Regulatory information**

<b>HSNO Approval Number</b>	HSR002596
<b>HSNO Group Standard</b>	Laboratory Chemicals and Reagent Kits
<b>HSNO Classification</b>	6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY (Fertility) - Category B 6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY (Unborn child) - Category B

**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**

<b>New Zealand</b>	All components are listed or exempted.
<b>Australia</b>	Not determined.
<b>United States</b>	Not determined.





Canada inventory	Not determined.
China	All components are listed or exempted.
Japan	Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.

Section 16. Other information

History

Date of printing	12 February 2026
Date of issue/ Date of revision	12 February 2026
Date of previous issue	5/13/2024
Version	8.04

Key to abbreviations	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) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail UN = United Nations
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References	Not available.
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 Indicates information that has changed from previously issued version.

Notice to reader

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