



# SAFETY DATA SHEET

Revision date 16-Oct-2024

Version 3

## Section 1: Identification

### Product identifier

**Product name** Monarch RNA Priming Buffer

**Product No** T2013-1

### Other means of identification

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended use** This product is for research and development only

**Uses advised against**

### Details of the supplier of the safety data sheet

#### Supplier

New England BioLabs (Australia) Pty Ltd  
22/270 Ferntree Gully Road  
Notting Hill, VIC 3168

**E-mail address** info.au@neb.com

### Emergency telephone number

**Company Phone Number** 0800 437 209

**National Poisons Centre** 0800 764 766 (toll free)

**24 Hour Emergency Phone Number** Chemtrec +65 3163 8374



## Section 2: Hazard identification

### GHS Classification

Flammable liquids	Category 2
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Chronic aquatic toxicity	Category 2

### Label elements



### Signal word

Danger

### Hazard statements

Highly flammable liquid and vapor  
 Harmful if swallowed  
 Harmful in contact with skin  
 Causes skin irritation  
 Causes serious eye irritation  
 Toxic to aquatic life with long lasting effects

### Precautionary Statements - Prevention

Use explosion-proof electrical/ ventilating/ lighting/ equipment  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Wear protective gloves/clothing and eye/face protection  
 Avoid release to the environment  
 Ground and bond container and receiving equipment  
 Use non-sparking tools  
 Take action to prevent static discharges  
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
 Keep container tightly closed

### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical advice/attention

### Skin

Call a POISON CENTER or doctor if you feel unwell  
 If skin irritation occurs: Get medical advice/attention  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]  
 Wash contaminated clothing before reuse

### Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell  
 Rinse mouth

### Fire

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

### Spill

Collect spillage

### Precautionary Statements - Storage

Store in a well-ventilated place. Keep cool

#### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

#### Other hazards which do not result in classification

No information available.

### Section 3: Composition/information on ingredients

Chemical name	CAS No.	Weight-%
Ethanol	64-17-5	60 - 70%
Guanidine Hydrochloride	50-01-1	40 - 50%

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

### Section 4: First-aid measures

#### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.
<b>Self-protection of the first aider</b>	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

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

**Symptoms** May cause redness and tearing of the eyes. Burning sensation.

#### Indication of any immediate medical attention and special treatment needed

**Note to physicians** Treat symptomatically.

### Section 5: Fire-fighting measures

#### Suitable extinguishing media

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray. Alcohol resistant foam.

**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

### Special exposure hazards in a fire

**Specific hazards arising from the chemical** Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

### Protective equipment and precautions for firefighters

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

## **Section 6: Accidental release measures**

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

**Other information** Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

### Environmental precautions

**Environmental precautions** Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

### Methods and material for containment and cleaning up

**Methods for containment** Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

**Methods for cleaning up** Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

### Precautions to prevent secondary hazards

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## **Section 7: Handling and storage**

### Precautions for safe handling

**Advice on safe handling** Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

#### **Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up.

**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.

### **Section 8: Exposure controls/personal protection**

#### **Control parameters**

##### **Exposure Limits**

Chemical name	New Zealand	Australia	ACGIH TLV	United Kingdom
Ethanol 64-17-5	TWA: 200 ppm TWA: 380 mg/m <sup>3</sup> STEL: 800 ppm STEL: 1520 mg/m <sup>3</sup>	TWA: 1000 ppm TWA: 1880 mg/m <sup>3</sup>	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1920 mg/m <sup>3</sup> STEL: 3000 ppm STEL: 5760 mg/m <sup>3</sup>

**Biological occupational exposure limits** This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

#### **Appropriate engineering controls**

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

#### **Individual protection measures, such as personal protective equipment**

**Eye/face protection** Tight sealing safety goggles.

**Hand protection** Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**Environmental exposure controls** No information available.

### **Section 9: Physical and chemical properties**

#### **Information on basic physical and chemical properties**

**Physical state** Liquid  
**Appearance** Colorless

<b>Color</b>	No information available
<b>Odor</b>	Mild.
<b>Odor threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No data available	None known
<b>Melting point / freezing point</b>	No data available	None known
<b>Initial boiling point and boiling range</b>	90 °C	
<b>Flash point</b>	22 °C	
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Vapor density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water solubility</b>	No data available	None known
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	363 °C	
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b>Explosive properties</b>	No information available.	
<b>Oxidizing properties</b>	No information available.	
<b><u>Other information</u></b>		
<b>Softening point</b>	No information available	
<b>Molecular weight</b>	No information available	
<b>VOC content</b>	No information available	
<b>Liquid Density</b>	No information available	
<b>Bulk density</b>	No information available	
<b>Particle characteristics</b>	No information available	

## Section 10: Stability and reactivity

### Reactivity

<b>Reactivity</b>	No information available.
-------------------	---------------------------

### Chemical stability

<b>Stability</b>	Stable under normal conditions.
------------------	---------------------------------

### Explosion data

<b>Sensitivity to mechanical impact</b>	None.
---	-------

<b>Sensitivity to static discharge</b>	Yes.
--	------

### Possibility of hazardous reactions

<b>Possibility of hazardous reactions</b>	None under normal processing.
---	-------------------------------

### Conditions to avoid

<b>Conditions to avoid</b>	Heat, flames and sparks.
----------------------------	--------------------------

**Incompatible materials**

**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.

**Hazardous decomposition products**

**Hazardous decomposition products** None known based on information supplied.

**Section 11: Toxicological information****Acute toxicity****Information on likely routes of exposure****Product Information**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed. (based on components).

**Symptoms** Redness. May cause redness and tearing of the eyes.

**Acute toxicity****Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

<b>ATEmix (oral)</b>	1,078.60 mg/kg
<b>ATEmix (dermal)</b>	2,000.00 mg/kg
<b>ATEmix (inhalation-gas)</b>	99,999.00 ppm
<b>ATEmix (inhalation-vapor)</b>	99,999.00 mg/l
<b>ATEmix (inhalation-dust/mist)</b>	116.90 mg/l

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethanol	= 7060 mg/kg ( Rat )	-	= 116.9 mg/L ( Rat ) 4 h = 133.8 mg/L ( Rat ) 4 h
Guanidine Hydrochloride	= 773.6 mg/kg ( Rat ) = 907.1 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	= 3.181 mg/L ( Rat ) 4 h = 7.655 mg/L ( Rat ) 4 h

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

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.

**Respiratory or skin sensitization** No information available.



**Germ cell mutagenicity** No information available.

### Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	New Zealand	IARC
Ethanol - 64-17-5	-	X

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Data used to identify the health effects** Refer to Section 16 for Key literature references and sources for data used to compile the SDS.

## Section 12: Ecological information

### Ecotoxicity

**Aquatic ecotoxicity** Toxic to aquatic life with long lasting effects.

**Unknown aquatic toxicity** 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethanol	-	LC50: 12.0 - 16.0mL/L (96h, Oncorhynchus mykiss) LC50: >100mg/L (96h, Pimephales promelas) LC50: 13400 - 15100mg/L (96h, Pimephales promelas)	LC50: 9268 - 14221mg/L (48h, Daphnia magna) EC50: =2mg/L (48h, Daphnia magna)

### Terrestrial ecotoxicity

Chemical name	Earthworm	Avian	Honeybees
Ethanol	Acute Toxicity: LC50 0.1 - 1 mg/cm <sup>2</sup> (Eisenia foetida, 48 h filter paper)	-	-

**Persistence and degradability** No information available.

### Bioaccumulative potential

#### Bioaccumulation

**Component Information**

Chemical name	Partition coefficient
Ethanol	-0.35
Guanidine Hydrochloride	-1.7

**Mobility in soil**

**Mobility** No information available.

**Other adverse effects**

No information available.

**Section 13: Disposal considerations****Waste treatment methods****Waste from residues/unused products**

Dispose of product in packaging in a way that is consistent with the EPA Consolidation 30 April 2021 of the Hazardous Substances (Disposal) Notice 2017 and the Act.

Treat the substance using a method that changes the characteristics or composition of the substance so that the substance is no longer a hazardous substance; or export the substance from New Zealand as waste.

Flammable substances - may not be disposed of into or onto a landfill or sewage facility. They may only be burnt in certain situations.

Flammable gases, liquids and solids may only be discharged into the environment or landfill as waste if the substance will not at any time come into contact with any explosives, oxidising gases, liquids or solids or organic peroxides; and there will be no ignition source in the vicinity of the disposal site at any time and if the substance were to ignite, no person, or place where a person may legally be, would be exposed to an unsafe level of heat radiation.

Substances which are hazardous to human health or corrosive to metals – may be discharged into the environment if a tolerable exposure limit has been set for the substance (or a component of that substance); and the discharge does not, after reasonable mixing, result in the concentration of the substance in an environmental medium exceeding the tolerable exposure limit. If there is no tolerable exposure limit for the substance, then it may only be discharged into the environment if the substance is very rapidly converted to substances that are not hazardous substances.

Environmentally hazardous substances – if the substance, or if it contains a component that is hazardous to the aquatic environment or bioaccumulative and not rapidly degradable, then any component that is bioaccumulative and not rapidly degradable must be removed. The product may only be discharged into the environment if an environmental exposure limit has been set for the substance (or a component of the substance); and the discharge does not, after reasonable mixing, result in the concentration of the substance in an environmental medium exceeding the environmental exposure limit.

**Contaminated packaging**

For packages that have been in direct contact with hazardous substances, the person must ensure that the package is rendered incapable of containing any substance. It must be disposed of in a manner that is consistent with the requirements for disposal of the substance that it contained, taking into account the material the package is manufactured from.

Packages may only be reused or recycled if:

- the substance has a physical hazard other than corrosive to metal, and has been treated to remove any residual contents of the hazardous substance;
- or for substances that have a health or environmental hazard, or corrosive to metal, the contents of the residue in the package are below the threshold for the substance to be classified as hazardous in the Hazardous Substances (Hazard Classification) Notice 2020.

**Section 14: Transport information**

**IATA**

UN number or ID number	UN1993
Proper shipping name	Flammable liquid, n.o.s.
Transport hazard class(es)	3
Packing group	II

**IMDG**

UN number or ID number	UN1993
Proper shipping name	Flammable liquid, n.o.s.
Transport hazard class(es)	3
Packing group	II

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

No information available

**Special precautions for user**

Please refer to the applicable dangerous goods regulations for additional information

**Section 15: Regulatory information****Regulatory information**

**EPA New Zealand HSNO approval code or group standard** To be determined

**National regulations** There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

**Certified handlers, tracking and controlled substance license requirements** Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information

Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please check the Health and Safety at Work Act 2015 for further information

Controlled substance licenses are required to possess certain explosives, vertebrate toxic agents and fumigants. See Part 7 of the Health and Safety at Work Regulation 2017 for more information

**International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**International Inventories**

NZIoC	Contact supplier for inventory compliance status.
TSCA	Contact supplier for inventory compliance status.
DSL/NDL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AIIC	Contact supplier for inventory compliance status.

Legend:

**NZIoC** - New Zealand Inventory of Chemicals  
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing Chemicals Inventory  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

## Section 16: Other information

**Revision date** 16-Oct-2024

### Revision Note

### Key or legend to abbreviations and acronyms used in the safety data sheet

#### Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
C	Carcinogen		

### Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)  
 U.S. Environmental Protection Agency ChemView Database  
 European Food Safety Authority (EFSA)  
 Environmental Protection Agency  
 Acute Exposure Guideline Level(s) (AEGl(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 National Institute of Technology and Evaluation (NITE)  
 Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 U.S. National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 World Health Organization

### Disclaimer

**The information provided in this Safety Data Sheet is correct to the best of our knowledge and belief at the date of publication. This information is intended only as a guide for safe handling, use, processing, storage, transportation, disposal and release and should not be taken as a warranty or quality specification. The information relates only to the specific material and may not be valid for such material used in combination with any other materials or in any process unless expressly specified in the text. New England Biolabs will not be liable for any damages resulting from handling or contact with the product**

**End of Safety Data Sheet**