



## Safety Data Sheet

according to Regulation (EC) No. 1907/2006

### SECTION 1 Identification of the substance/ mixture and of the company/ undertaking

#### 1.1 Product identifier

Product name THUNDERBIRD™ Probe One-step qPCR Kit  
2x Reaction Buffer  
DNA Polymerase  
RT Enzyme Mix  
50x ROX Reference dye  
RNase Free water  
Product Code QRZ-101

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

Recommended use and restrictions on use Realtime RT-PCR kit

#### 1.3 Detail of the supplier of the safety data sheet

Company TOYOBO Co., Ltd.  
Department Biotech support Department  
Address 2-2-8 Dojima Hama Kita-ku Osaka, 530-8230 Japan  
Telephone number +81-6-6348-3786  
Fax No. +81-6-6348-3833

#### 1.4 Emergency telephone number

+81-6-6348-3786 (9:00~17:00 Japan Time)

### SECTION 2 Hazards identification

#### 2.1 Classification of substance or mixture

Classification (REGULATION (EC) No 1272/2008)  
Not classified or classification not possible

#### 2.2 Label elements

Classification (REGULATION (EC) No 1272/2008)  
No label elements are required.

#### 2.3 Other hazards

Few adverse human health effects are anticipated. Glycerol whose flash point 160°C and Additive1 whose flash point 131°C are contained.



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### SECTION 3 Composition / information on Ingredients

Chemical Product  
 (Substance/Mixture) Mixture

#### 3.2 Mixture

Chemical Nature Aqueous solutions of enzyme, antibody and other compounds.

Harzadous components

Common Chemical	Glycerol	Potassium chloride
Synonyms	Glycerin	KCl
Contained Parts	DNA Polymerase RT Enzyme Mix	DNA Polymerase
Chemical formula	CH <sub>2</sub> OHCHOHCH <sub>2</sub> OH	KCl
CAS No.	56-81-5	7447-40-7
EC No.	200-289-5	231-211-8
Classification	Not classified	Not classified
Concentration	50%	<5%

Common Chemical Name	Polyethylene glycol mono-p- isooctylphenyl ether	Poly(oxyethylene)nonylphenyl ether
Synonyms	Triton X-100, Polyethylene Glycol-p-(1,1,3,3- tetramethylbutyl) phenyl Ether	Nonidet P-40
Contained Parts	DNA Polymerase	RT Enzyme Mix
Chemical formula	C <sub>8</sub> H <sub>17</sub> -C <sub>6</sub> H <sub>4</sub> O-(C <sub>2</sub> H <sub>4</sub> O) <sub>n</sub> H	C <sub>9</sub> H <sub>19</sub> -C <sub>6</sub> H <sub>4</sub> -(C <sub>2</sub> H <sub>4</sub> O) <sub>n</sub> OH
CAS No.	9002-93-1	9016-45-9
EC No.	255-695-5	500-024-6
Classification	Acute Tox. 4; H302 Eye Irrit. 2; H319	Skin Irrit. 2 H315, Eye Irrit. 2 H319, Aquatic Chronic 2 H411
Concentration	0.5%	PBT <0.01%

Common Chemical Synonyms	Additive1 -	Additive2 -
Contained Parts	2x Reaction Buffer	2x Reaction Buffer
Chemical formula	-	-
CAS No.	-	-
EC No.	-	-
Classification	Not classified	Skin Irrit. 2 H315, Eye Irrit. 2 H319, STOT SE 3 H335
Concentration	<10%	<5%



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Common Chemical	Additive3
Synonyms	-
Contained Parts	2x Reaction Buffer
Chemical formula	-
CAS No.	-
EC No.	-
Classification	Not classified
Concentration	<15%

### SECTION 4 First aid measures

#### 4.1 Description of first aid measures

Inhalation	In case of irritation by inhaling this product, remove person to fresh air and keep comfortable for breathing. Seek medical attention.
Skin Contact	Wash with clean water, immediately. Take off contaminated clothing and wash before reuse. If skin irritation or rash occurs: Get medical advice/ attention.
Eye Contact	Rinse cautiously with water for several minutes.
Ingestion	Rinse mouth. Induce vomiting. If indisposition continues, seek medical attention.

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

No information available.

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

No information available.

### SECTION 5 Firefighting measures

#### 5.1 Extinguishing media

Water, Carbon Dioxide, Foam, Dry Chemical Powder

#### 5.2 Special hazards arising from the substance or mixture

Exposure to decomposition products may be a hazard to health.  
Toxic gas (carbon monoxide, nitrogen oxides) and fumes maybe generated.

#### 5.3 Advice for firefighters

Fire-fighting should be done from the windward side of fire area.  
Fire-fighters should wear proper protective equipment in case of large scale fire.



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### SECTION 6 Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment and avoid eye/skin contact and inhalation.

#### 6.2 Environmental precautions

Avoid disposition to the environment.

#### 6.3 Methods and material for containment and cleaning up

Use cloth, paper, or anything similar to soak up to the solution leaking out of the container.

#### 6.4 Reference to other sections

For personal protection see section 8.

### SECTION 7 Handling and storage

#### 7.1 Precautions for safe handling

Technical Measures	Avoid substance contact. Wear protective equipment and avoid contact with eyes and skin. Handle with ventilation and local
Precautions	Keep the handling area always clean.
Hygiene measures	Wash hands thoroughly after handling.

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

Storage Conditions	Store at about -20°C
Packaging Materials	Store in the original package

#### 7.3 Specific end uses (s)

Laboratory chemicals

### SECTION 8 Exposure controls/ personal protection

#### 8.1 Control Parameter

##### Occupational Exposure Limits

	Glycerol
JSOH OEL	Not Established
OSHA PEL	Total dust: 15mg/m <sup>3</sup> TWA Respirable fr.: 5mg/m <sup>3</sup> TWA
DFG MAK	Inhalable fraction: 200 mg/m <sup>3</sup> Peak limitation category: I(2)

#### 8.2 Exposure controls

##### Appropriate engineering controls

Set up good ventilation and exhaust system in the work area.

##### Personal protective Equipment

Respiratory Protection	Wear a dust mask.
Hand Protection	Chemical safety gloves.
Eye Protection	Chemical safety goggles.
Skin and Body Protection	Long sleeves to prevent contact with skin.



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### SECTION 9 Physical and chemical properties

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

Physical State	Liquid
Colour	50x ROX Reference dye: Very pale red Others: Colourless
Odour	None
pH	7.0~9.0
Flash Point	No flammability due to aqueous solution, but glycerol whose flash point 160°C and Additive1 whose flash point 131°C may stay behind after volatilization.
Density	1.0-1.2(g/cm <sup>3</sup> )
Solubility	Soluble in water.

#### 9.2 Other data

None

### SECTION 10 Stability and reactivity

#### 10.1 Reactivity

No hazardous reaction if stored and applied as directed.

#### 10.2 Chemical stability

Stable at -20±5°C.

#### 10.3 Possibility of hazardous reactions

Nothing particular

#### 10.4 Conditions to avoid

High temperature, ignition sources, direct sunlight

#### 10.5 Incompatible materials

Strong acids, strong alkalines and strong oxidizers

#### 10.6 Hazardous decomposition products

Not available



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### SECTION 11 Toxicological information

#### 11.1 Information on toxicological effects

Acute Toxicity Not available  
 Skin corrosion/ May cause mild skin irritation.  
 Serious eye damage/ May cause eye irritation.  
 irritation

#### Toxicological information on the component of this product

	Glycerol	KCl
	Oral-rat: LD50 12.6g/kg	
Acute toxicity	Dermal-rabbit: LD50 >10g/kg	Oral-rat: LD50 2.6g/kg
	Inhalation-rat: LC50>570mg/m3 (1hr)	
	Polyethylene glycol mono-p- isooctylphenyl Ether	Poly(oxyethylene)nonylphenyl ether
Acute toxicity	Oral-rat: LD50 1800mg/kg	—
	Dermal-rabbit:LD50 ≥ 3g/kg	
Skin corrosion/	—	Irritating to skin.
Eye damage/ irritation	Irritating to eyes.	Irritating to eyes.
	Additive1	Additive2
Skin corrosion/	May cause irritate skin.	Irritating to skin.
Eye damage/ irritation	May cause irritate the eyes.	Irritating to eyes.
Specific target organ toxicity(single exposure)	—	May cause respiratory irritation



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### SECTION 12 Ecological information

#### 12.1 Toxicity

	Polyethylene glycol mono-p- isooctylphenyl ether	Poly(oxyethylene)nonylphenyl ether
Acute	Fishes (Bluegill); LC50/96H 3mg/L	Crustacea (Mysidopsis bahia); LC50/48H 0.71-2.2mg/L
Aquatic chronic	—	Fishes (Pimephales promelas); NOEC/7D 1mg/L

#### 12.2 Persistence and degradability

Glycerol, enzyme, antibody, and deoxynucleotide are biodegradable.

#### 12.3 Bioaccumulative potential

Glycerol, enzyme, antibody, and deoxynucleotide are not bioaccumulative.

#### 12.4 Mobility in soil

Soluble in water and diffusible into water environment.

#### 12.5 Results of PBT and vPvB assessment

DNA Polymerase contains 0.5% polyethylene glycol mono-p-  
isooctylphenyl ether.

### SECTION 13 Disposal considerations

#### 13.1 Waste treatment methods

Product	Dispose of in accordance with all applicable local and national laws and regulations.
Contaminated Packaging	Dispose of in accordance with all applicable local and national laws and regulations.

### SECTION 14 Transport information

#### 14.1 UN number

No

#### 14.2 UN proper shipping name

No

#### 14.3 Transport hazard class(es)

No

#### 14.4 Packing group

No

#### 14.5 Environmental hazards

Not classified as environmental hazards.

#### 14.6 Special precautions for user

To prevent packages from breaking, handle with care.

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

Not applicable for product as supplied.



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### SECTION 15 Regulatory information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

Polyethylene glycol mono-p-isooctylphenyl ether

REACH - Authorization List of Substances of Very High Concern for Authorisation (Annex

Polyethylene glycol mono-p-isooctylphenyl ether

Poly(oxyethylene)nonylphenyl ether

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer

Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants

Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Not applicable

#### 15.2 Chemical Safety Assessment

No data available

Follow all of the laws and regulations in your respective country.

### SECTION 16 Other information

Full text of H-

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H302: Harmful if swallowed.

H335: May cause respiratory irritation.

H411: Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Skin Irrit. : Skin irritation

Eye Irrit. : Eye irritation

Acute Tox.: Acute toxicity

STOT SE: Specific target organ toxicity - single exposure

Aquatic Chronic: Chronic aquatic toxicity

#### Notice

The information in this SDS, to the best of our knowledge, is accurate and correct. However, TOYOBO makes no warranty and assumes no liability whatsoever in connection with any use of this information.

The SDS is subject to revision as new information becomes available.