

## **1. Identification of the substance/mixture and of the company/undertaking**

### **1.1 Identification of the substance/preparation**

**Product name** : Q-HiFi™ DNA Polymerase

**Product code** : TF2000

**Recommended use** : For laboratory use. Suitable for DNA dependent DNA polymerisation / amplification.

### **1.2 Company/Undertaking identification**

SMOBIO Technology, Inc.

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### **1.3 Emergency telephone number**

**Emergency telephone** : +886 3 5799292 (09.00-18.00 TST)

## **2. Hazards identification**

### **2.1 Classification of the substance or mixture**

**GHS/GLP** : Classification to Regulation (EC) No 1272/2008

**DSD/DPD** : Classification to according to EU Directives 67/548/EC or 1999/45/EC

### **2.2 Label elements**

**Symbol(s)** : Void

**Signal Word** : Not dangerous

### **2.3 Other information**

**Hazards deriving from physical-chemical properties** : The data available do not support any physical or chemical hazard. **Except for Dithiothreitol.**

**Human health hazards** : Inappropriate handling may cause formation of aerosols.

Inhalation of aerosols may cause allergic type reactions in sensitized individuals.

Prolonged skin contact may cause minor irritation.

**Dithiothreitol** can be absorbed through skin; concentrated dithiothreitol may cause eye injuries, skin, respiratory and nervous system damages.

**Caution:** Avoid inhalation, ingestion, and skin contacts.

**Environmental hazards** : The data available do not support any environmental hazard.

### **3. Composition/information on ingredient**

#### **3.1 Ingredients**

##### **3.1.1 Q-HiFi DNA Polymerase**

<u>Chemical name</u>	<u>Concentration</u>	<u>EC No.</u>	<u>CAS No.</u>	<u>Classification</u>
Glycerol	> 50 %	200-289-5	56-81-5	Not classified
Dithiothreitol	< 0.02 %	222-468-7	3483-12-3	Xn;R22, 36-38 , AcuteTox.4; H302/H319/H315
KCl	< 0.4 %	231-211-8	7447-40-7	Not classified
Tris	< 0.5 %	201-064-4	77-86-1	Xi;R36-38 , H315/H319/H335

##### **3.1.2 5X Q-HiFi Buffer**

<u>Chemical name</u>	<u>Concentration</u>	<u>EC No.</u>	<u>CAS No.</u>	<u>Classification</u>
Tricine	< 5%	227-193-6	5704-04-1	Not classified
KOAc	< 5%	204-822-2	127-08-2	Not classified
NH <sub>4</sub> Cl	< 0.5%	235-186-4	12125-02-9	Xn; R22-36, AcuteTox.4; Eye Irrit. 2; H302/H319
Trade secret	Proprietary	Proprietary	Proprietary	Xn;R22, AcuteTox.4; H302/H373

#### **3.2 Other components**

Components not listed here are not dangerous or their concentrations do not exceed the limits specified in the EU directive 1999/45/EC.

#### **3.3 Additional information**

For the wording of the listed risk phrases refer to section 16.

### **4. First aid measures**

#### **4.1 General information**

No special measures required.

#### **4.2 Description of first aid measures**

**In case of ingestion** : If swallowed, rinse mouth and throat thoroughly with water.

Consult a doctor in event of any complaints.

**In case of inhalation** : If inhaled, remove victim from area of exposure. If symptoms of irritation or respiratory allergy occur, consult a doctor.

**In case of skin contact** : Generally, the product does not irritate the skin. If symptoms of irritation after prolonged exposure occur, consult a doctor.

**In case of eye contact** : Wash out opened eyes with plenty of water for several minutes.

Consult a doctor in event of any complaints.

## **5. Fire fighting measures**

### **5.1 Suitable extinguishing agents**

Water spray, Carbon dioxide (CO<sub>2</sub>), dry chemical powder or appropriate foam.

### **5.2 Not suitable extinguishing agents**

None.

### **5.3 Special exposure hazards from decomposition products**

Not thoroughly investigated.

### **5.4 Protective equipment**

Wear self-contained breathing apparatus and protective clothing.

## **6. Accidental release measures**

### **6.1 Personal precautions**

Wear appropriate gloves (see Section 8), safety glasses to clean small releases/spillage.

In case of vapor/aerosol formation, wear suitable respiratory protection means. Ventilate the area.

### **6.2 Environmental precautions**

No special measures required.

### **6.3 Methods for cleaning up**

Absorb spillages with liquid-binding material. Ventilate and wash the area after the spillage is completely removed.

### **6.4 Additional information**

No dangerous substances are released.

## **7. Handling and storage**

### **7.1 Handling**

No further requirements. Use appropriate personal protection measures (see Section 8).

Avoid any contact with the liquid. Avoid the formation of aerosols. Ventilate area.

### **7.2 Storage**

Store at - 20°C. No other specific requirements relating to the preparation.

## **8. Exposure controls/personal protection**

### **8.1 Control parameters**

<u>Chemical name</u>	<u>CAS No.</u>	<u>Exposure limits</u>
Glycerol	56-81-5	TWA : 10 mg/m <sup>3</sup>
Dithiothreitol	3483-12-3	No data available
Tris	77-86-1	No data available
Tricine	5704-04-1	No data available
KOAc	127-08-2	No data available
NH <sub>4</sub> Cl	12125-02-9	No data available

### **8.2 Exposure controls**

**Engineering measures** : Ensure adequate ventilation, especially in confined areas.

### **8.3 Personal protection**

**Respiratory protection** : No special measures required.

**Hand protection** : Wear rubber gloves. No special requirements to rubber.

**Eye protection** : Safety glasses (goggles) are recommended during ordinary operations with the preparation.

**Skin protection** : The usual precautionary measures accepted in research laboratories, e.g. protective clothes (gowns). No specific requirements.

## **9. Physical and chemical properties**

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

#### **9.1.1 Q-HiFi DNA Polymerase**

**Appearance:** Liquid.

**Color:** Colourless.

**Odor:** Odorless or weak.

**pH-value at 25°C:** 8.0.

**Boiling point:** 106.7°C.

**Flash Point:** Not applicable.

**Flammability / autoflammability:** The preparation is not flammable/self-igniting.

**Explosive properties:** The preparation does not possess explosive properties.

**Oxidizing properties:** Not applicable.

**Vapor pressure:** Not applicable.

**Relative density at 20°C:** ~1.13 g/cm<sup>3</sup>.

**Solubility in/miscibility with water:** Fully miscible.

**Fat solubility:** Not applicable.

**Vapor density:** Not applicable.

**Evaporation rate:** Not applicable.

**Conductivity:** Not applicable.

**Viscosity:** Slightly viscous.

### **9.1.2 5X Q-HiFi Buffer**

**Appearance:** Liquid.

**Color:** Colourless.

**Odor:** Odorless or weak.

**pH-value at 25°C:** ~8.7.

**Boiling point:** ~100°C.

**Flash Point:** Not applicable.

**Flammability / autoflammability:** The preparation is not flammable/self-igniting.

**Explosive properties:** The preparation does not possess explosive properties.

**Oxidizing properties:** Not applicable.

**Vapor pressure:** Not applicable.

**Relative density at 20°C:** ~1.06 g/cm<sup>3</sup>.

**Solubility in/miscibility with water:** Fully miscible.

**Fat solubility:** Not applicable.

**Vapor density:** Not applicable.

**Evaporation rate:** Not applicable.

**Conductivity:** Not applicable.

**Viscosity:** Slightly viscous.

### **9.2 Other information**

No further relevant information available.

## **10. Stability and reactivity**

### **10.1 Stability**

Stable under storage conditions (see section 7).

### **10.2 Reactivity**

No information available.

### **10.3 Possibility of hazardous reactions**

No dangerous reactions known.

### **10.4 Conditions to avoid**

No conditions which may cause dangerous reactions.

### **10.5 Incompatible materials**

No in particular.

### **10.6 Hazardous decomposition products**

No dangerous decomposition products known.

## **11. Toxicological information**

### **11.1 Information on toxicology effects**

#### **Acute toxicity:**

**Inhalation:** Aerosols may cause allergic type reactions in sensitized individuals.

**Ingestion:** Repeated ingestion or excessive dosage may cause irritation of the gastrointestinal tract.

**Skin and eye contact:** Generally, the product does not irritate the skin and eyes. Prolonged skin or eye contact may cause minor irritation.

<u>Chemical name</u>	<u>LD50 Oral</u>	<u>LD50 Dermal</u>	<u>LD50 Inhalation</u>
Tris	5900 mg/kg(Rat)		
Dithiothreitol	400 mg/kg(Rat)		
KOAc	3250 mg/kg(Rat)		
NH <sub>4</sub> Cl	1650 mg/kg(Rat)		
Trade secret	>10000 mg/kg(Rat)		

#### **Chronic toxicity :**

Product does not present a chronic toxicity hazard based on known or supplied information.

## **12. Ecological information**

### **12.1 Ecotoxicity**

The preparation is considered not dangerous to the environment with respect to mobility, persistence and degradability, bioaccumulation, aquatic toxicity and other data relating to ecotoxicity.

### **12.2 Persistence and degradability**

The preparation is readily biodegradable.

### **12.3 Bioaccumulative potential**

It is considered that the preparation does not accumulate in biota, and does not pass through the food chain.

### **12.4 Other adverse effects**

Not applicable.

## **13. Disposal consideration**

### **13.1 Waste treatment methods**

**Waste from residues / unused products:** Dispose of in accordance with local regulation.

**Contaminated packaging:** Empty containers should be taken to an approved waste handling site for recycling or disposal.

### **14. Transport information**

**IMDG/IMO:** Non-hazardous for sea freight.

**RID:** Non-hazardous for rail transport.

**ARD:** Non-hazardous for road transport.

**ICAO/IATA:** Non-hazardous for air transport.

**Other information:** The preparation may be stored in ice during the transportation.

### **15. Regulatory information**

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

No information available.

#### **15.2 Chemical safety assessment**

No information available.

#### **15.3 Regulatory information**

**US :**

**Labelling according to US Regulations:** Caution: Avoid contact and inhalation.

**US Regulatory information:** SARA LISTED: No.

**EU :**

**Labelling according to EU Guidelines:** The preparation is not dangerous within the meaning of Directives 67/548/EC, 1999/45/EC, and is not labelled with danger symbols or indications of danger.

**Canada :**

**WHMIS classification:** This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

**DSL:** No.

**NDSL:** No.

### **16. Other information**

#### **16.1 Full text of R-phrases referred to under sections 3**

R20 : Harmful by inhalation.

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R22 : Harmful if swallowed.

R36-38 : Irritating to eyes, respiratory system and skin.

R41 : Risk of serious damage to eyes.

**16.2 Full text of physical and health hazards referred to under sections 3**

H302 : Harmful if swallowed.

H303 : May be harmful if swallowed.

H315 : Causes skin irritation.

H319 : Causes serious eye irritation.

H318 : Causes serious eye damage.

H335 : May cause respiratory irritation.

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. SMOBIO shall not be held liable for any damage resulting from handling or from contact with the above product.