



MATERIAL SAFETY DATA SHEET

Company	ELPIS-Biotech. Inc.
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SECTION 1. CHEMICAL INFORMATION

Product name	HiPi RT-PCR Kit
Cat. No.	EBT-1103

Product Use : Laboratory Reagent. For R&D use only. Not for drug, household or other uses.

Manufacturer/ Supplier information

Supply company : ELPIS-Biotech. Inc.

Address : 123-12 Jeonglim-dong, Seo-gu, Daejeon, Korea

Information service or emergency call : +82-42-581-8448 (042-581-8448, Korea)

Department in charge : Research Department

Kit Contents

Description	Amount
HiPi Plus DNA Polymerase.	500 unit (5unit/ul)
10x HiPi Plus reaction Buffer	2 ml MSDS not available.
M-MLV Reverse Transcriptase	10,000 unit (200 unit/ul)
5x Reverse Transcription Buffer	500 ul MSDS not available.
dNTP mix	500 ul (10 mM)
Random Hexamer	50 ul (100 pmol/ul)
Oligo d(T) ₁₅ D21	50 ul (100 pmol/ul)
Recombinant RNase Inhibitor	2,500 unit (50 unit/u MSDS not available.
Total RNA, Human 293 cell	10 ul (1 ug/ul) MSDS not available.
Control Primer Pair Mix, β -actin	20 ul (10 pmol/ul) MSDS not available.
RNase-Free Water	1,000 ul MSDS not available.

SECTION 16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide.

ELPIS Biotech Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

Date of preparation of the first version : 2010. 08. 20.

Revised frequency and Date of preparation of the latest version : 2013. 03. 08. (2rd version)

1. HiPi Plus DNA Polymerase

SECTION 1. CHEMICAL INFORMATION

Product name HiPi Plus DNA Polymerase.
Cat. No. EBT-1007
Enzyme (protein) in buffer solution; buffer solution. Volume of product package: 100ul.
Supplied with: 10x HiPi Plus reaction buffer (2ml)

Product Use : Laboratory Reagent. For R&D use only. Not for drug, household or other uses.

Manufacturer/ Supplier information

Supply company : ELPIS-Biotech. Inc.
Address : 123-12 Jeonglim-dong, Seo-gu, Daejeon, Korea
Information service or emergency call : +82-42-581-8448 (042-581-8448, Korea)
Department in charge : Research Department

SECTION 2. HAZARDOUS IDENTIFICATION



Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys. Repeated or prolonged exposure to the substance can produce target organs damage.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization

Description: Solution, consisting of the following components.

Buffer's Components in Water:

Reagent	CAS#	Concentration, %
Taq polymerase	9012-90-2	
Tris-HCl	77-86-1	< 1
Magnesium chloride	7786-30-3	< 1
Potassium chloride	7447-40-7	< 1
Dithiothreitol (DTT)	3483-12-03	< 1
Glycerol	56-81-5	≤ 50
EDTA	6381-92-6	< 1
Triton x-100	9002-93-1	< 1
Ammonium sulfate	7783-20-2	< 1

Components:

Glycerol	CAS: 56-81-5	EI;ECS: 200-289-5	≤ 50 %
water	CAS: 7732-18-5	EI;ECS: 231-791-2	25-50 %

Other components are not dangerous or their concentrations do not exceed the limits specified in the EU directive 1999/45/EC.

SECTION 4. FIRST AID MEASURES**After skin contact**

Wash skin with water and soap and rinse thoroughly. Remove contaminated clothing. Get medical attention if irritating occurs.

After eye contact

Rinse opened eyes for several minutes under running water. Get medical attention if eyes become irritating.

After swallowing (ingestion)

Rinse mouth. Drink plenty of water. Get medical attention if irritating or symptoms occur.

After inhalation

If inhaled, remove to fresh air. If breathing is difficult, call a physician.

SECTION 5. FIRE FIGHTING MEASURES**Extinguishing media**

Water spray, Carbon dioxide, dry chemical powder or appropriate foam.

Special firefighting procedures

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosions hazards

Emit toxic fumes under fire conditions

Prevent contact with skin and eyes.

Flash Point : N/A

Flammability : N/A

SECTION 6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Not required.

Environmental precautions

Do not allow entering sewers, surfaces or ground water.

Measures for cleaning / collecting

Collect spilled liquid with liquid-binding material or inert absorbent and place it in container for disposal. Wash spill site after material pickup is complete.

SECTION 7. HANDLING AND STORAGE

Handling : User Exposure : Avoid contact with eyes, skin, and clothing.

Avoid inhalation. Avoid prolonged or repeated exposure.

Storage : No special measures necessary. Keep tightly closed. Store at -20°C.

SECTION 14. TRANSPORT INFORMATION

Contact ELPIS Biotech, Inc. Company for Transportation Information.

SECTION 15. REGULATORY INFORMATION

US Classification and Label text

US Statements : Caution: Avoid contact and inhalation

United States regulatory information

SARA Listed : No

Canada regulatory information

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

2. M-MLV Reverse Transcriptase RNase H+

SECTION 1. CHEMICAL INFORMATION

Product name M-MLV Reverse Transcriptase RNase H+

Cat. No. EBT-1027

Protein (M-MLV Reverse Transcriptase RNase H+) in buffer solution; Volume of product package: 50ul. Both supplied with : 5x Reaction Buffer (500ul)

Product Use : Laboratory Reagent. For R&D use only. Not for drug, household or other uses.

Manufacturer/ Supplier information

Supply company : ELPIS-Biotech. Inc.

Address : 123-12 Jeonglim-dong, Seo-gu, Daejeon, Korea

Information service or emergency call : +82-42-581-8448 (042-581-8448, Korea)

Department in charge : Research Department

SECTION 2. HAZARDOUS IDENTIFICATION



Primary routes of entry : Skin or eye contact from splashes. Inhalation of the vapor at room temperature is unlikely.

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys. Repeated or prolonged exposure to the substance can produce target organs damage.

Evidence for reproductive toxicity, carcinogenicity and mutagenicity : No data available

HMIS RATING - Health : 2 Flammability : 0 Reactivity : 0

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization

Description: Solution, consisting of the following components.

Buffer's Components in Water:

Reagent	CAS#	Concentration, %
Tris-HCl	77-86-1	< 1
Sodium chloride	7647-14-5	< 1
Nonidet P-40	9036-19-5	< 1
Glycerol	56-81-5	≤ 50
EDTA	6381-92-6	< 1
Dithiothreitol (DTT)	3483-12-03	< 1

Components:

Glycerol	CAS: 56-81-5	EI;ECS: 200-289-5	≤ 50 %
water	CAS: 7732-18-5	EI;ECS: 231-791-2	≤ 45 %

Other components are not dangerous or their concentrations do not exceed the limits specified in the EU directive 1999/45/EC.

SECTION 4. FIRST AID MEASURES

After inhalation

Supply fresh air. If breathing becomes difficult, call a physician.

After skin contact

Wash skin with water and soap and rinse thoroughly. Remove contaminated clothing. Call a physician.

After eye contact

Rinse opened eyes for several minutes under running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with finger. Get medical attention if eyes become irritating.

After swallowing (ingestion)

Wash out mouth with water provided person is conscious. If symptoms persist consult doctor.

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing media

Water spray, Carbon dioxide, dry chemical powder or appropriate foam.

Special firefighting procedures

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosions hazards

Emit toxic fumes under fire conditions

Prevent contact with skin and eyes.

Flash Point : N/A

Flammability : N/A

SECTION 6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

Not required.

Environmental precautions

Do not allow entering sewers, surfaces or ground water.

Measures for cleaning / collecting

Collect spilled liquid with liquid-binding material or inert absorbent and place it in container for disposal. Wash spill site after material pickup is complete.

SECTION 7. HANDLING AND STORAGE

Handling : User Exposure : Avoid contact with eyes, skin, and clothing.

Avoid inhalation. Avoid prolonged or repeated exposure.

Storage : No special measures necessary. Keep tightly closed. Store at -20°C.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : safety shower and eye bath. Mechanical exhaust required.

Personal Protective equipment :

Respiratory : NIOSH/MSHA-approved respirator

Hand : Compatible chemical -resistant gloves.

Eye : Compatible safety goggles.

General Hygiene Measures : Wash thoroughly after handling.

Wash contaminated clothing before use.

Keep tightly closed. Store in a cool dry place. Freeze. Store at -20°C.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid.
Color	Clear
Odor	Odorless.
Melting point	20° C
Boiling point	182° C
Flash point	> 392 F, > 200° C
Explosive properties	No data available.
Vapor pressure	< 1 MMHG @ 20°C

SECTION 10. STABILITY AND REACTIVITY

Stability Stable.

Hazardous polymerization Will not occur

Materials to Avoid Strong oxidizing agents, strong bases.

Hazardous Decomposition Products: Carbon Monoxide, Carbon Dioxide

Protect from heat and moisture

SECTION 11. TOXICOLOGICAL INFORMATION

Eye Contact: Irritating to eyes

Skin Contact Irritating to skin.

Multiple Routes May be harmful by inhalation, ingestion, or skin absorption

Materials may be irritating to mucous membranes and upper respiratory tract.

Chronic Effects : Target Organs, Kidney

Signs and Symptoms of Exposure : Prolonged exposure can cause : Nausea, headache and vomiting

To the best of our knowledge, the properties have not yet been thoroughly investigated.

SECTION 12. ECOLOGICAL INFORMATION

Data not yet available

SECTION 13. DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service to dispose of this material.

Observe all federal, state and local environmental regulations

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

SECTION 14. TRANSPORT INFORMATION

Contact ELPIS Biotech, Inc. Company for Transportation Information.

SECTION 15. REGULATORY INFORMATION

US Classification and Label text

US Statements : Caution: Avoid contact and inhalation

United States regulatory information

SARA Listed : No

Canada regulatory information

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

3. dNTP mix

SECTION 1. CHEMICAL INFORMATION

Product name dNTP mix
Cat. No. EBN-1006
dNTPs mixture in buffer solution; Volume of product package: 1,000ul.

Product Use : Laboratory Reagent. For R&D use only. Not for drug, household or other uses.

Manufacturer/ Supplier information

Supply company : ELPIS-Biotech. Inc.
Address : 123-12 Jeonglim-dong, Seo-gu, Daejeon, Korea
Information service or emergency call : +82-42-581-8448 (042-581-8448, Korea)
Department in charge : Research Department

SECTION 2. HAZARDOUS IDENTIFICATION



Primary routes of entry

Skin or eye contact from splashes.
Inhalation of the vapor at room temperature is unlikely.

Skin contact

May cause irritation

Eye contact

Irritating

Evidence for reproductive toxicity, carcinogenicity and mutagenicity

No data available

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization : Mixtures

Description : Mixture of the substances listed below with nonhazardous additions.

Buffer's Components in Water:

Reagent	CAS#		Concentration, %
2'-deoxycytidine-5' Triphosphate	None	SARA 313: NO	2.5mM
2'-deoxythymidine-5' Triphosphate	None	SARA 313: NO	2.5mM
2'-deoxyadenosine-5' Triphosphate	None	SARA 313: NO	2.5mM
2'-deoxyguanosine-5' Triphosphate	None	SARA 313: NO	2.5mM
Tris-HCl	77-86-1		≤ 0.98
EDTA	6381-92-6		≤ 0.04

SECTION 4. FIRST AID MEASURES

After skin contact

Wash skin with water and soap and rinse thoroughly. Remove contaminated clothing. Get medical attention if irritating occurs.

After eye contact

Rinse opened eyes for several minutes under running water. Get medical attention if eyes become irritating.

After swallowing (ingestion)

Rinse mouth. Drink plenty of water. Get medical attention if irritating or symptoms occur

Inhalation exposure

If inhaled, remove to fresh air. If not breathing If breathing is difficult, give oxygen.give artificial respiration.

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing media

Water spray

Carbon dioxide, dry chemical powder or appropriate foam.

Special firefighting procedures

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual fire and explosions hazards

Emit toxic fumes under fire conditions

Flash Point : N/A

Autoignition Temp : N/A

Flammability : N/A

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Not required.

Environmental precautions

Do not allow entering sewers, surfaces or ground water.

Measures for cleaning / collecting

Collect spilled liquid with liquid-binding material or inert absorbent and place it in container for disposal. Wash spill site after material pickup is complete.

SECTION 7. HANDLING AND STORAGE

Handling

No special measures necessary. Good laboratory technique should be used when handling.

Storage

Suitable: Keep tightly closed. No special measures necessary. Store at -20°C.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION □

Exposure limits Eye protection Skin protection

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace

Hygiene measures Breathing equipment

Avoid inhalation

Keep tightly closed store in a cool dry place. Freeze. Store at -20°C

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid.
Color	clear
Odor	Odorless.
Flash point	> 392 F, > 200°C
Explosive properties	No data available.
Vapor pressure	< 1 MMHG @ 20°C

SECTION 10. STABILITY AND REACTIVITY

Stability	Stable.
Hazardous polymerization	Will not occur
Materials to Avoid	Strong oxidizing agents.
Hazardous Decomposition Products:	Carbon Monoxide, Carbon Dioxide, Nitrogen oxides.
Protect from heat and moisture	

SECTION 11. TOXICOLOGICAL INFORMATION

Eye Contact:	Irritating to eyes
Skin Contact	Irritating to skin.
Multiple Routes	May be harmful by inhalation, ingestion, or skin absorption

Materials may be irritating to mucous membranes and upper respiratory tract.
Preparations may cause allergic reactions in certain sensitive individuals.

SECTION 12. ECOLOGICAL INFORMATION

Data not yet available

SECTION 13. DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service to dispose of this material.
Observe all federal, state and local environmental regulations
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

SECTION 14. TRANSPORT INFORMATION

Contact ELPIS Biotech, Inc. Company for Transportation Information.

SECTION 15. REGULATORY INFORMATION

UNITED STATES REGULATORY INFORMATION

SARA Listed : No

CANADA REGULATORY INFORMATION

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

Disclaimer : For R&D use only. Not for drug, household or other uses.

Warranty : The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide

4. Random hexamer , Oligo d(T)15

SECTION 1. CHEMICAL INFORMATION

Product name	Random hexamer
Cat. No.	EBT-1522
Product name	Oligo d(T)15
Cat. No.	EBT-1523

Product Use : Laboratory Reagent. For R&D use only. Not for drug, household or other uses.

Manufacturer/ Supplier information

Supply company : ELPIS-Biotech. Inc.

Address : 123-12 Jeonglim-dong, Seo-gu, Daejeon, Korea

Information service or emergency call : +82-42-581-8448 (042-581-8448, Korea)

Department in charge : Research Department

SECTION 2. HAZARDOUS IDENTIFICATION

ELPIS Biotech Inc. is not aware of any hazards for this product.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Oligonucleotide (Random hexamer) in buffer solution. Volume of product package: 50ul.