1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 PRODUCT IDENTIFIER

Trade name: **BIOTOOLS HOTSPLIT DNA POLYMERASE 1U/µl & 5U/µl**

Product Number: 10.531-10.532-10.533-10.562-10.563

Chemical Name: Not Applicable

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST.

Relevant identified uses: For research use only. Not for use in diagnostic procedures.

Uses advised against: Not for consumer use

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET.

Manufacturer / Supplier

Company: Biotools, B & M Labs, S.A.

Valle de Tobalina – 52 – Nave 39
28021 Madrid
SPAIN
Tel: +34 91 710 00 74
Fax: +34 91 505 31 18

1.4 EMERGENCY NUMBER

Please contact Biotools distributor in your country. Spain only: 91 562 04 20

2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE MIXTURE

Hazard Ingredients	
Hydrochloric acid	Corrosive to Metals (Category 1), H290
	Skin corrosion (Sub-category 1B), H314
REGULATION (EC) No	Serious eye damage (Category 1), H318
1272/2008	Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
NP 40	Acute toxicity, Oral (Category 4), H302
	Acute toxicity, Inhalation (Category 4), H332
REGULATION (EC) No	Serious eye damage (Category 1), H318
1272/2008	Long-term (chronic) aquatic hazard (Category 2), H411

2.2 LABEL ELEMENTS

Label elements

Hazard pictograms
None

Signal Word
None

Hazard Statements
Not Applicable

EU Specific Hazard Statements
Not Applicable

Precautionary Statements

Prevention
Not Applicable

Response
Not Applicable

Storage
Not Applicable

Disposal
Not Applicable

2.3 OTHER HAZARDS
None known

3.COMPOSITION OF THE PRODUCT/INFORMATION ON INGREDIENTS

3.1 SUBSTANCE
Not aplicable

3.2 MIXTURE

Chemical characterisation: Solutions in buffer. Volume of each product package varies: 100µl – 1.8ml.

Active ingredients:

CAS-No	EC no	Name	Contents	Danger[1]	Risks
56-81-5	200-289-5	**Glycerol**	≥0.1%	None	None
77-86-1	201-064-4	**Trizma base**	≥0.1%	None	None
9005-64-5	500-018-3	**TWEEN® 20**	>0.1%	None	None
7786-30-3	232-094-6	**Magnesium chloride**	>0.1%	None	None
7786-20-2	231-984-1	**Ammonium sulfate**	≥0.1%	None	None
127087-87-0	500-315-8	**NP40**	≥0.1%		Acute Tox. 4; Eye Irrit. 2; Aquatic Chronic 3; H302, H319, H412
7647-01-0	231-595-7	**Hydrochloric acid**	≥0.1%		Met. Corr. 1; Skin Corr. 1B; Eye Dam. 1; STOT SE 3; H290, H314, H318, H335 Concentration limits: >= 0,1 %: Met. Corr. 1, H290; >= 25 %: Skin Corr. 1B, H314; 10 - < 25 %: Skin Irrit. 2, H315; 10 - < 25 %: Eye Irrit. 2, H319; >= 10 %: STOT SE 3, H335;

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

Skin contact
Wash skin with water and soap and rinse thoroughly. Remove contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Get medical attention.

Eye contact
Rinse opened eyes for at least 15 min with copious amounts of water. Check for and remove any contact lenses. Call a ophthalmologist.

Ingestion
Caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

Inhalation
After inhalation remove to fresh air. If not breathing, give artificial respiration. Consult a physician.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Irritation and corrosion
Vomiting, Dermatiis
Drying-out effect resulting in rugh and chapped skin
Risk of corneal clouding
Risk of serious damage to eyes
Toxic to aquatic life with long lasting effects.
Harmful if swallowed or if inhaled.

4.3 INDICATION OF ANY IMMEDIATE ATTENTION AND SPECIAL TREATMENT NEEDED

No information available

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5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Suitable extinguishing media
Water, Foam, Carbon dioxide (CO2), Dry powder.

Unsuitable extinguishing media
For this mixture no limitations of extinguishing agents are given.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Nature of decomposition products not known.
Not combustible.

5.3 ADVICE FOR FIREFIGHTERS

Special protective equipment for firefighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing

Further information
Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Advice for non-emergency personnel:
Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:
Protective equipment see section 8.

6.2 ENVIRONMENTAL PRECAUTIONS

Do not let product enter drains.
Discharge into the environment must be avoided.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 REFERENCE TO OTHER SECTIONS

Indications about waste treatment see section 13.

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7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage conditions:
Tightly closed.
Recommended storage temperature see product label

7.3 SPECIFIC END USE(S)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

8.2 EXPOSURE CONTROLS

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See section 7.1.

Individual protection measures
Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection
Tightly fitting safety goggles
Use equipment for eye protection tested and approved under appropriate government standards

Hand protection
full contact:

Glove material: butyl-rubber
Glove thickness: 0,7 mm

Break through time: > 480 min

splash contact:
Glove material:butyl-rubber
Glove thickness:0,7 mm
Break through time:> 480 min

Other protective equipment
protective clothing

Respiratory protection
required when vapours/aerosols are generated.
Recommended Filter type: Filter A-(P2)
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid
Colour: Colorless
Odour: Odorless
Boiling point: no data available.
Flash point: no data available
Explosive properties: no data available
Vapor pressure: no data available
pH: 7-9

9.2 OTHER DATA

No information available

10. STABILITY AND REACTIVITY

10.1 REACTIVITY
No data available

10.2 CHEMICAL STABILITY
Stable under normal handling and storage conditions

10.3 POSSIBILITY OF HAZARDOUS REACTIONS
No data available

10.4 CONDITIONS TO AVOID
No data available

10.5 INCOMPATIBLE MATERIALS
Strong acids, strong bases, Amines, Alkali metals, Metals, permanganates, for example potassium permanganate, Fluorine, metal acetylides, hexalithium disilicide Metals

10.6 HAZARDOUS DECOMPOSITION PRODUCTS
In the event of fire: See section 5.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Glycerol

Acute toxicity
LD50 Oral - Rat - 27.200 mg/kg
Remarks: (ECHA)

LD50 Dermal - Rabbit - > 10.000 mg/kg
Remarks: (External MSDS)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h
Remarks: (ECHA)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
Remarks: (ECHA)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Trizma base

Acute toxicity
LD50 Oral - Rat - female - > 5.000 mg/kg
(OECD Test Guideline 425)
LD50 Dermal - Rat - male and female - > 5.000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
Mutagenicity (mammal cell test): chromosome aberration.
Chinese hamster lung cells
Result: negative
In vitro mammalian cell gene mutation test
Chinese hamster ovary cells
Result: negative

Carcinogenicity
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Hydrochloric acid

Acute toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.
No data available

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Inhalation: Cough Difficulty in breathing (Hydrochloric Acid)
Inhalation: absorption (Hydrochloric Acid)

Symptoms: mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage

Skin corrosion/irritation
Mixture causes burns.
Skin - reconstructed human epidermis (RhE) (Hydrochloric Acid)
Result: Corrosive
(OECD Test Guideline 431)

Serious eye damage/eye irritation
Mixture causes serious eye damage. Risk of blindness!
Eyes - Bovine cornea (Hydrochloric Acid)
Result: Corrosive
(OECD Test Guideline 437)

Respiratory or skin sensitization
Maximization Test - Guinea pig (Hydrochloric Acid)
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Chromosome aberration test in vitro (Hydrochloric Acid)
Chinese hamster ovary cells
Result: Conflicting results have been seen in different studies.

Carcinogenicity
Carcinogenicity - Did not show carcinogenic effects in animal experiments. (IUCLID) (Hydrochloric Acid)
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
Mixture may cause respiratory irritation.

Acute oral toxicity - If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possible damages:, damage of respiratory tract, tissue damage (Hydrochloric Acid)

Specific target organ toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
No aspiration toxicity classification (Hydrochloric Acid)

NP40

Acute toxicity
LD50 Oral - Rat - 960 - 3.980 mg/kg
Remarks: (External MSDS)
LC50 Inhalation - Rat - 4 h - 1,15 mg/l

Skin corrosion/irritation
Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of the skin.

Serious eye damage/eye irritation
Causes serious eye irritation.

Ammonium sulphate

Acute toxicity
LD50 Oral - Rat - male and female - 4.250 mg/kg
(OECD Test Guideline 401)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg
(OECD Test Guideline 434)

Magnesium chloride

Acute toxicity
LD50 Oral - Rat - female - > 5.000 mg/kg
(OECD Test Guideline 423)
LD50 Dermal - Rat - male and female - > 2.000 mg/kg
(OECD Test Guideline 402)

Tween® 20

Acute toxicity
LD50 Oral - Rat - 38.900 mg/kg
Remarks: (External MSDS)
LC50 Inhalation - Rat - male and female - 4 h - > 5,1 mg/l
(OECD Test Guideline 403)
Remarks: Limit Test (highest concentration to be prepared)

11.2 FURTHER INFORMATION

After absorption:
We have no description of any symptoms of toxicity.
Other dangerous properties cannot be excluded.
Handle in accordance with good industrial hygiene and safety practice

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12. ECOLOGICAL INFORMATION

12.1 TOXICITY

Glycerol

Toxicity to fish
static test LC50 - Oncorhynchus mykiss (rainbow trout) - 54.000 mg/l - 96 h
Remarks: (ECHA)

Trizma base

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - > 980 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to bacteria
static test EC50 - activated sludge - > 1.000 mg/l - 3 h
(OECD Test Guideline 209)

Hydrochloric Acid

Toxicity to fish
LC50 - Gambusia affinis (Mosquito fish) - 282 mg/l - 96 h
Remarks: (IUCLID)

NP40

Toxicity to fish
LC50 - Pimephales promelas (fathead minnow) - 3,8 - 6,2 mg/l - 96h
Remarks: (External MSDS)

Toxicity to daphnia and other aquatic invertebrates
LC50 - Daphnia magna (Water flea) - 9,3 - 21,4 mg/l - 48 h
Remarks: (External MSDS)

Toxicity to bacteria
IC50 - Bacteria - > 1.000 mg/l - 16 h

Ammonium sulphate

Toxicity to fish
LC50 - Oncorhynchus mykiss (rainbow trout) - 53 mg/l - 96 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Ceriodaphnia (water flea) - 121,7 mg/l - 48 h
(US-EPA)

Toxicity to algae
static test ErC50 - Chlorella vulgaris (Fresh water algae) - 2.700 mg/l - 18 Days
Remarks: (ECHA)

Toxicity to bacteria
static test EC50 - activated sludge - 1.618 mg/l - 30 min
(OECD Test Guideline 209)

Magnesium chloride

Toxicity to fish
static test LC50 - Pimephales promelas (fathead minnow) - 2.119,3mg/l - 96 h
(US-EPA)

Toxicity to daphnia and other aquatic invertebrates
static test LC50 - Daphnia magna (Water flea) - 548,4 mg/l - 48 h

Toxicity to algae
Growth rate EC50 - Desmodesmus subspicatus (green algae) - > 100mg/l - 72 h

(OECD Test Guideline 201)

Toxicity to bacteria
static test EC50 - activated sludge - > 900 mg/l - 3 h
(OECD Test Guideline 209)

Tween® 20

Toxicity to fish
static test LL50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia - > 10 mg/l - 48 h
Remarks: (above the solubility limit in the test medium)(Lit.)
Toxicity to bacteria microtox test EC50 - Bacteria - 146 - 774 mg/l - 5 min
Remarks: (Lit.)

12.2 PERSISTENCE AND DEGRADABILITY

No data available

12.3 BIOACCUMULATIVE POTENTIAL

No data available

12.4 MOBILITY IN SOIL

No information available.

12.5 RESULTS OF PBT AND vPvB ASSESSMENT

Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not
Conducted.

12.6 OTHER ADVERSE EFFECTS

Hydrochloric Acid
May be harmful to aquatic organisms due to the shift of the pH. Do not empty into drains.
Harmful effect due to pH shift.
Discharge into the environment must be avoided.

NP 40
Toxic to aquatic life with long lasting effects.

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13. DISPOSAL CONSIDERATIONS

Controlled disposal in waste system. Product disposal (leftovers or residues resulting from normal use) does not pose any serious hazards in the adequate proportion.
The product and packaging should be disposed of in accordance with the instructions of the local authorities.

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14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)
ADR/RID: - IMDG: - IATA: -

14.4 Packaging group
ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

Further information
Not classified as dangerous in the meaning of transport regulations.

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15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

15.2 CHEMICAL SAFETY ASSESMENT

For this product a chemical safety assessment was not carried out.

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16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H290 MAY BE CORROSIVE TO METALS.
H302 HARMFUL IF SWALLOWED.
H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE
H315 CAUSES SKIN IRRITATION.
H318 CAUSES SERIOUS EYE DAMAGE.
H319 CAUSES SERIOUS EYE IRRITATION.
H335 MAY CAUSE RESPIRATORY IRRITATION.
H412 HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

Training advice
Provide adequate information, instruction and training for operators.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge, and is applicable to the product with regards to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Biotools, B & M Labs, S.A. shall not be held liable for any damage resulting from handling or from contact with the above product.

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