# 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

## 1.1 PRODUCT IDENTIFIER

REF **MEK-01-024**

Product Name **DEVIN™ Microbial DNA Enrichment Kit**

Component

| | | |
|---|---|---|
| **Box1** | DEVIN™ Fractionation Syringe Filter | 24 pcs |
| | Pre-filled plate | 3 pcs |
| | Elution buffer | 1 tube |
| | Incubation buffer | 1 tube |
| **Box2** | Protease K | 1 tube |
| **Box3** | Lysozyme | 1 tube |

## 1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST USE OF THE SUBSTANCE/MIXTURE

- The Devin™ Microbial DNA Enrichment Kit is suitable for removing the white blood cells and isolating microbial DNA from whole blood, plasma or other body liquids. Extracted nucleic acids can be analyzed by downstream application, such as real-time PCR and/or next-generation sequencing.
- This kit is for **Research Use Only**.

## 1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: Micronbrane Medical Co., Ltd
Adress: 22F., No. 99, Xinpu 6th St., Taoyuan Dist., Taoyuan City 33044, Taiwan
Phone: +886.3.316.6428
Fax: +886.3.316.6408
E-mail: info@micronbrane.com

## 1.4 EMERGENCY TELEPHONE

- Outside Taiwan: Call your regional Poisons Information Service or call local Life Saving Service.
- Taiwan: Toxic and chemical Substances Bureau; tel. +886.2.325.7399

# 2 HAZARD IDENTIFICATION

## 2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

**Classification according to regulation EC No 1272/2008:**

The product is a mixture consisting of individual ingredients. The classification of the ingredients can be obtained from below and section 3.

Skin Corrosion/Irritation (category 1)
Eye Damage/Irritation (category 1)
Aquatic Acute Toxin (Category 1)
Aquatic Chronic Toxin (Category 1)
Flammable liquids (category 2)

## 2.2 LABEL ELEMENTS

**Labeling according to regulation EC No 1272/2008:**

Pictograms

| | |
|---|---|
| Signal word | Danger |
| Hazard statements | |
| H314 | Causes severe skin burns and eye damage |
| H315 | Cause skin irritation |
| H318 | Cause serious eye damage |
| H319 | Cause serious eye irritation |
| H226 | Flammable liquid and vapor |
| H400 | Very toxin to aquatic life |
| H410 | Very toxin to aquatic life with long lasting effects |
| Precautionary statements | |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. No smoking |
| P261 | Avoid breathing dust/fume/gas/mist/vapors/spray |
| P264 | Wash skin thoroughly after handling |
| P273 | Avoid release to the environment |
| P280 | Wear protective gloves/ eye protection/face protection |
| P302 + P352 | IF ON SKIN: Wash with plenty of water |
| P304 + P340 + P312. | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed |
| P310 | Immediately call a POISON CENTER/doctor |
| P391 | Collect spillage |
| P501 | Dispose of contents/container in accordance with local regulations. |

## 2.3 OTHER HAZARDS

None

# 3 COMPOSITION/INFORMATION ON INGREDIENTS

## 3.1 SINGLE SUBSTANCES

| Substance | CAS No. | EC No. | Concentration % | Classification |
|---|---|---|---|---|
| Proteinase K | 39450-01-6 | 254-457-8 | <= 100 % | Skin Irrit. 2 H315<br>Eye Irrit. 2 H319 |
| Lysozyme | 9001-63-2 | - | <= 100 % | Not applicable |

## 3.2 DESCRIPTION OF MIXTURES

| Mixtures | Ingredients | Cas No. | EC No. | Concentration % | Classification |
|---|---|---|---|---|---|
| Incubation Buffer | Triton® X-100 | 9002-93-1 | 618-334-0 | < 10 % | Acute Tox. 4, H302<br>Skin Irrit. 2, H315<br>Eye damage 1, H318<br>Aquatic Acute toxin 1, H400<br>Aquatic Chronic toxin 1, H410 |
| | Ethylenedinitrilotetraacetic acid disodium salt dihydrate | 6381-92-6 | 205-358-3 | < 1 % | Not applicable |
| | Tris (Trometamol) | 77-86-1 | 201-064-4 | < 1 % | Not applicable |
| | Water | 7732-18-5 | 231-791-2 | to 100% | Not applicable |
| Wash Buffer 1 | Guanidine Thiocyanate | 593-84-0 | 209-812-1 | 20-30% | Acute Tox. 4, H302, H312, H332<br>Skin Corrosion 1, H314<br>Aquatic Chronic 3, H412 |
| | Ethyl alcohol | 64-17-5 | 200-578-6 | 30-40% | Flammable liquids 2, H225<br>Eye damage 2, H319 |
| | Ethylenedinitrilotetraacetic acid disodium salt dihydrate | 6381-92-6 | 205-358-3 | < 1 % | Not applicable |
| | Tris (Trometamol) | 77-86-1 | 201-064-4 | < 1 % | Not applicable |
| | Water | 7732-18-5 | 231-791-2 | to 100% | Not applicable |
| Wash Buffer 2 | Ethyl alcohol | 64-17-5 | 200-578-6 | 70-80% | Flammable liquids 2, H225<br>Eye damage 2, H319 |
| | Water | 7732-18-5 | 231-791-2 | to 100% | Not applicable |
| Magnetic beads | Ethyl alcohol | 64-17-5 | 200-578-6 | 70-80% | Flammable liquids 2, H225<br>Eye damage 2, H319 |
| | Ferric ferrous oxide | 1317-61-9 | | < 3 % | Not applicable |
| | Silicon dioxide | 7631-86-9 | | < 2 % | Not applicable |
| | Water | 7732-18-5 | 231-791-2 | to 100% | Not applicable |
| Elution Buffer | Tris (Trometamol) | 77-86-1 | 201-064-4 | < 2 % | Not applicable |
| | Water | 7732-18-5 | 231-791-2 | to 100% | Not applicable |

# 4 FIRST AID MEASURES

## 4.1 DESCRIPTION OF FIRST AID MEASURES

| | |
|---|---|
| **General advice** | Consult a physician. Show this safety data sheet to the doctor in attendance. Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. |
| **Inhalation** | Supply fresh air and keep comfortable for breathing. Get medical attention if experiencing respiratory symptoms. |
| **Eye contact** | Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately. |
| **Skin contact** | Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if you feel unwell. |
| **Ingestion** | Rinse mouth immediately and do NOT induce vomiting. Drink water immediately (two glasses at most). Never give anything by mouth to an unconscious person. Get medical attention. |

## 4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

## 4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Notes to physicians: Treat symptomatically.

# 5 FIRE-FIGHTING MEASURES

## 5.1 SUITABLE EXTINGUISHING MEDIA

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. Extinguishers like ALCOHOL-RESISTANT FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used. Cool closed containers exposed to fire with water spray.

## 5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Carbon oxides Combustible. Pay attention to flashback. Vapors are heavier than air and may spread along floors. Development of hazardous combustion gases or vapors possible in the event of fire. Forms explosive mixtures with air at ambient temperatures. Formation of hazardous and caustic vapor-air mixtures possible.

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances.

## 5.3 ADVICE FOR FIREFIGHTERS/PROTECTIVE EQUIPMENT

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. In the event of a large-scale formation of toxic substances protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary.

## 5.4 ADDITIONAL INFORMATION

Product package burns like paper or plastic. Spray any vapors released with water. Use only acid- resistant safety equipment. Prevent fire extinguishing water from contaminating surface water or the ground water system.

# 6 ACCIDENTAL RELEASE MEASURES

## 6.1 PERSONAL PRECAUTIONS

Ensure adequate ventilation. Do not breathe vapors. Wear suitable protective gloves (see 8.2). Wear eye protection. Regular staff training is necessary, indicating hazards and precautions on the basis of the operating instructions. Restrictions on activity must be observed.

## 6.2 ENVIRONMENTAL PRECAUTIONS

Prevent further leakage or spillage if safe to do so. Avoid direct discharge into drains and waterways whenever possible.

## 6.3 METHODS OF CLEANING-UP

Transfer to a chemical waste containers and absorbents for disposal in accordance to local regulations for the disposal of hazardous chemicals.

# 7 HANDLING AND STORAGE

## 7.1 PRECAUTIONS FOR SAFE HANDLING

Avoid contact with skin and eyes. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Keep away from drains. Keep away from open flames, hot surfaces, heat, and ignition sources. Take precautionary measures against static discharge.

## 7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep container in Box 1 tightly closed in a dry and well-ventilated place. Keep away from heat and ignition sources.
Storage class (TRGS 510): 3: Flammable liquids.
Store Box 2 at +2°C to +8°C. Store Box 3 at -40°C to -20°C.

# 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

## 8.1 CONTROL PARAMETERS

| Component | Chemical substance | Control Parameter |
|---|---|---|
| **Incubation Buffer** | Triton® X-100 <10%<br>CAS No.: 9002-93-1<br>EC No.: 618-334-0 | - |
| **12 ml BUF L2** | guanidinium chloride | - |
| **3 ml REAG L3** | polyoxyethylene sorbitan monolaureate (TWEEN® 20)<br>CAS No.: 9005-64-5 | - |
| **20 mg Proteinase K (lyo)** | Proteinase K<br>CAS No.: 39450-01-6<br>EC No.: 254-457-8 | SUVA(CH) MAK value: 0,00006 (15 min) mg/m³ |

## 8.2 EXPOSURE CONTROLS

| | |
|---|---|
| **General advice** | Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace. |
| **Eye/Face protection** | Safety glasses with side-shields according EN 166. |
| **Skin/Body protection** | Gloves according EN 374. Wear a laboratory coat and complete clothing against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. |
| **Respiratory protection** | If used according to product's instructions for use no dust or vapors should be generated. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). |
| **Control of environmental exposure** | Do not let product and waste from product enter drains directly. Refer to section 13 for proper disposal. |

# 9 PHYSICAL AND CHEMICAL PROPERTIES

## 9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

| Property | Incubation Buffer | Wash Buffer 1 | Wash Buffer 2 | Magnetic Beads | Elution Buffer | Proteinase K | Lysozyme |
|---|---|---|---|---|---|---|---|
| Appearance Form | liquid | liquid | liquid | liquid | liquid | liquid | |
| Color | none | none | Slightly yellow | none | none | none | |
| Odor | none | alcoholic | alcoholic | alcoholic | none | none | none |
| Odor Threshold | no data | no data | no data | no data | no data | no data | no data |
| pH | 7.5-8.5 | 7.0-8.0 | 7.0-8.0 | 7.0-8.0 | 7.0-8.0 | no data | no data |
| Melting point/freezing point | no data | no data | -114°C / -173.2°F | -114°C / -173.2°F | no data | no data | no data |
| Initial boiling point and boiling range | no data | no data | 78°C / 172.4°F | 78°C / 172.4°F | no data | no data | no data |
| Flash point | no data | no data | 13 - 17°C / 55.4 - 62.6°F | 13 - 17°C / 55.4 - 62.6°F | no data | no data | no data |
| Evaporation rate | no data | no data | 2.4 | 2.4 | no data | no data | no data |
| Flammability (solid, gas) | no data | no data | no data | no data | no data | no data | no data |
| Upper/lower flammability or explosive limits | no data | no data | Lower 3.3vol% Upper 19 vol% | Lower 3.3vol% Upper 19 vol% | no data | no data | no data |
| Vapor pressure | no data | no data | 44.3 mmHg | 44.3 mmHg | no data | no data | no data |
| Vapor density | no data | no data | 1.6 (air=1) | 1.6 (air=1) | no data | no data | no data |
| Relative density (g/cm³) | 1.00 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.00 |
| Partition coefficient: n octanol/water | no data | no data | no data | no data | no data | no data | no data |
| Water solubility | no data | no data | 0-10% | no data | no data | no data | no data |
| Autoignition temperature | no data | no data | 363°C / 685°F | 363°C / 685°F | no data | no data | no data |
| Decomposition temperature | no data | no data | no data | no data | no data | no data | no data |
| Viscosity | no data | no data | no data | no data | no data | no data | no data |
| Explosive properties | no data | no data | no data | no data | no data | no data | no data |
| Oxidizing properties | no data | no data | no data | no data | no data | no data | no data |

## 9.2 OTHER SAFETY INFORMATION

None.

## 10 STABILITY AND REACTIVITY

### 10.1 REACTIVITY

Flammable liquid and vapor.

### 10.2 CHEMICAL STABILITY

Stable under recommended storage conditions.

### 10.3 POSSIBILITY OF HAZARDOUS REACTION

No known hazardous reactions under normal handling and storage conditions.

### 10.4 CONDITIONS TO AVOID

None under recommended storage and handling conditions (see section 7). Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5 INCOMPATIBLE MATERIALS

Strong oxidizing agents. Strong acids. Acid anhydrides. Acid chlorides.

### 10.6 HAZARDOUS DECOMPOSITION PRODUCTS

In the original package all parts/all reagents are safety and separately stored. Decompositions are not observed during the expiration period under recommended conditions.

## 11 TOXICOLOGICAL INFORMATION

### 11.1 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Data on the toxicity of the mixtures in this product is not available. The following toxicological information is only valid for pure chemical substances. Elution buffer contains substance < 2%, no declaration of the substance is necessary.

**Acute Toxicology**

| Substance(s) | Effect dose | Species | Method | Remark |
|---|---|---|---|---|
| Triton® X-100 | LD50: 1,900 - 5,000 mg/kg | Rat | Oral | The value is given in analogy to the following substances: Octylphenol polyethoxyethanol（External MSDS) |
| | LD50: > 3,000 mg/kg | Rabbit | Dermal | The value is given in analogy to the following substances: Octylphenol polyethoxyethano（External MSDS) |
| Guanidine Thiocyanate | LD50: 593 mg/kg | Rat | Oral | - |
| | LD50: 300 mg/kg | Mouse | Intrapertoneal | - |

**Skin corrosion/irritation**

| Substance(s) | Result | Species | Method | Remark |
|---|---|---|---|---|
| Triton® X-100 | Irritating – 4h | Rabbit | Dermal | The value is given in analogy to the following substances: 4-(1,1,3,3-tetramethylbutyl)phenol（External MSDS) |
| Guanidine Thiocyanate | Causes skin burns | Rat | Dermal | - |

**Serious eye damage/eye irritation**

| Substance(s) | Result | Species | Method | Remark |
|---|---|---|---|---|
| Triton® X-100 | Risk of serious damage to eyes, corneal clouding. | Rabbit | Draize Test | - |
| Ethyl alcohol | Risk of serious eye damage | - | - | - |

**Respiratory or skin sensitization**

Based on the available data, the classification criteria are not met.

**Germ cell mutagenicity**

Based on the available data, the classification criteria are not met. Mutagenic effects have occurred in humans.

**Carcinogenicity**

Based on available data, none of the ingredients are classified as confirmed or suspected carcinogens in the EU. No components of this product presented at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by the International Agency for Research on Cancer (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.

### 11.2 11.2 ADDITIONAL INFORMATION

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 12 ECOLOGICAL INFORMATION

### 12.1 TOXICITY

Data on the ecotoxicity of the mixtures in this product is not available. The following toxicological information is only valid for pure chemical substances.

**Toxicology**

| Substance(s) | Effect dose | Test duration | Species | Method | Remark |
|---|---|---|---|---|---|
| Triton® X-100 | LC50: 4 - 8.9 mg/l | 96 h | Pimephales promelas (fathead minnow) | - | - |
| | LC50: 0.26 mg/l | 96 h | Leuciscus idus (Golden orfe) | semi-static test | - |
| | LC50: 18 - 26 mg/l | 48 h | Daphnia magna (Water flea) | - | - |
| | EC50: 0.011 mg/l | 48 h | Daphnia magna (Water flea) | static test | ECOTOX Database |
| Guanidine Thiocyanate | ED50: 42.4 mg/kg | 48 h | Daphnia magna (Water flea) | - | - |

### 12.1 PERSISTENCE AND DEGRADABILITY

Data on the ecotoxicity of the mixtures in this product is not available. The following toxicological information is only valid for pure chemical substances.

| Substance(s) | Effect dose | Test duration | Species | Method | Remark |
|---|---|---|---|---|---|
| Triton® X-100 | Chemical Oxygen Demand (COD): 2.19 mg/g | aerobic - Exposure time 28 d | - | - | OECD Test Guideline 301C |

### 12.2 BIOACCUMULATIVE POTENTIAL

No data available.

### 12.3 MOBILITY IN SOIL

No data available.

### 12.4 RESULTS OF PBT AND VPVB ASSESSMENT

No data available is available for Triton® X-100. Other substances in this product are not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.5 ENDOCRINE DISRUPTING PROPERTIES

No data available.

### 12.6 OTHER ADVERSE EFFECTS

No data available.

## 13 DISPOSAL CONSIDERATIONS

### 13.1 WASTE TREATMENT METHODS

Product packaging should be recycled where possible. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility in accordance with national and local regulations.

## 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

ADR/RID: - IMDG: - IATA: -

### 14.4 PACKING GROUP

ADR/RID: - IMDG: - IATA: -

### 14.5 ENVIRONMENTAL HAZARDS

ADR/RID: no IMDG: no IATA: no

### 14.6 SPECIAL PRECAUTIONS FOR USERS

None

## 15 REGULATORY INFORMATION

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

Regulations on Occupational Safety and Health
Facilities
Standards for the Storage, Cleanup, Handling and
Disposal of Industrial Waste
Regulations on Labelling and Hazard Communication
of Hazardous Chemicals
Rules on Road Traffic Safety
Standards of Permissible Exposure Limits in
Workplace
Rules on the Prevention of Poisoning from Organic
Solvents.
Establishment Standards and Safety Control
Regulations for Manufacturing, Storing, Processing
Public Hazardous Substances and Flammable
Pressurized Gases Places
Toxic and Concerned Chemical Substances Control Act - Class 4 toxic chemical

## 16 OTHER INFORMATION

### 16.1 REVISION

This is the First edition of the safety data sheet with revised content and layout.

### 16.2 TRAINING ADVICE

Regular safety training.

### 16.3 RECOMMENDED RESTRICTION ON USE

Only for professional user.

### 16.4 FURTHER INFORMATION

Micronbrane Medical provides the information contained herein in good faith being up-to-date of own realizations at revision time and is applicable to the product with regard to appropriate safety precautions. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. It does not represent any guarantee of the properties of the product.

Micronbrane Medical shall not be held liable for any damage resulting from handling or from contact with the above product.