

**MATERIAL SAFETY DATA SHEET**

(According to regulation (EC) 1907/2006 and amendments)

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

KIT**1 INFORMATION OF THE SUBSTANCE/PREPARATION AND COMPANY****1.1 Product identifier**

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

Kit Components: Microtiter plate
Conjugate
Incubation Buffer
Conjugate Buffer
Calibrators (0 to 5)
Controls (1 and 2)
Washing Solution
Chromogenic TMB
Stop Solution**1.2 Intended Use**

For In Vitro Diagnostic Use. See product literature for details.

1.3 CompanyDemeditec Diagnostics GmbH
Lise-Meitner-Str. 2
24145 Kiel
Germany
Tel. No. +49 (0)431/71922-0
e-mail: info@demeditec.de**1.4 Emergency telephone**Demeditec (only office hours): +49 (0)431/71922-0
Please refer to your local Anti-Poison Center!**2 OTHER INFORMATION**

| | ADR | ADN/ADNR | IMDG | IATA |
|--|----------------|-----------------|----------------|----------------|
| UN number | Not applicable | | | |
| UN proper shipping name | Not applicable | | | |
| Transport hazard class(es) | Not applicable | | Not applicable | Not applicable |
| Packing group | Not applicable | | Not applicable | Not applicable |
| Environmental hazards | Not available | Not available | Not available | Not available |
| Hazard label | Not applicable | | | |
| Classification code | Not applicable | | | |
| Special precautions for user | Not available | | | |
| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not available | | | |
| Other information | Not available | Not available | Not available | Not available |

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| 3 OTHER INFORMATION |
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3.1 Single components with dangerous ingredients:

According to Regulation (EC) No 1907/2006 (REACH) in combination with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) the products in the following table do not have to be classified as hazardous.

According to Article 31 of Regulation (EC) No 1907/2006 a safety data sheet has to be provided upon request where a mixture does not meet the criteria for classification as hazardous but contains a substance in a concentration of $\geq 1\%$ posing human health hazards.

Therefore the safety data sheet for the single kit component Stop Solution is attached.

The other single components in these products neither contain a substance in a concentration of $\geq 1\%$ posing human health or environmental hazards; nor a substance in a concentration $\geq 0.1\%$ that is carcinogenic category 2 or toxic to reproduction category 1A, 1B and 2, skin sensitizer category 1, respiratory sensitizer category 1, or has effects on or via lactation or is persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB)

Therefore a safety data sheet for the other single components in the kit is not required for these products.

3.2 General Precautions:

- The products are for professional laboratory use only.
- Users should have a thorough understanding of the Instructions for Use prior to their use of this kit.
- Good Laboratory Practices (GLP) should be followed to ensure the safe use and disposal of the reagents.
- Never pipet by mouth and avoid contact of reagents and specimens with skin and mucous membranes.
- Do not smoke, eat, drink or apply cosmetics in areas where specimens or kit reagents are handled.
- Wear disposable latex gloves when handling reagents

3.3 Other hazard

| | |
|--------------------------|--------------------------------------|
| Conjugate | Contains material from bovine origin |
| Conjugate Buffer | Contains material from bovine origin |
| Incubation Buffer | Contains material from bovine origin |

This kit contains material of human origin. Although these materials have been tested for HBsAg, anti-HCV and anti-HIV-1/2 and have been found not reactive, they should be considered as potentially infectious.

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|--------------------|-------------------------------------|
| Calibrators | Contains material from human origin |
| Controls | Contains material from human origin |

3.4 Other information

Microtiter plate : Each well can only be used once



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| CONJUGATE BUFFER |
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| 1 INFORMATION OF THE SUBSTANCE/PREPARATION AND COMPANY |
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1.1 Product identifier

Product Name: Conjugate Buffer
 Catalog #: Component the kits mentioned on the first page

1.2 Intended Use

For Research Use Only. See product literature for details.

1.3 Company

Demeditec Diagnostics GmbH
 Lise-Meitner-Str. 2
 24145 Kiel
 Germany
 Tel. No. +49 (0)431/71922-0
 e-mail: info@demeditec.de

1.4 Emergency telephone

Demeditec (only office hours): +49 (0)431/71922-0
 Please refer to your local Anti-Poison Center!

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| 2 HAZARDS IDENTIFICATION |
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2.1 Classification of the substance or mixture

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|--|---|
| Product Description | Yellowish; Clear; Liquid; Odorless |
| Classification according to EC 1272/2008 (CLP/GHS) | Acute toxicity Category 4 Eye Irritation Category 2 Specific target organ toxicity - single exposure Category 3 Skin irritation Category 2 |
| Classification according to US-OSHA (HCS 29 CFR 1910.1200) and UN GHS | Not classified as hazardous per US-OSHA HCS 2012 and UN GHS |

2.2 Classification according to the regulation (EC) n°1272/2008 (CLP) and its amendments

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|----------------------|--|
| Acute Tox., Dermal 4 | H312 Harmful in contact with skin. |
| Eye Irrit. 2 | H319 Causes serious eye irritation. |
| Skin Irrit 2 | H315 Causes skin irritation. |
| STOT SE | H335 May cause respiratory irritation. |

2.3 Label elements according to the regulation (EC) n°1272/2008 (CLP) and its amendments

Danger symbol



| | |
|---------------------------|---|
| Signal word | Warning |
| Product Identifier | Maleic acid, < 2% v/v |
| Danger | H312 Harmful in contact with skin. H319 Causes serious eye irritation. H315 Causes skin irritation. |

| | |
|--|--|
| Supplemental Hazard Information | H335 May cause respiratory irritation. |
| Prevention statements | - |
| Response statements | P261 Avoid breathing vapours. P273 Avoid release to the environment. P280 Wear protective gloves, protective clothing and eye/face protection. P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing |
| Storage statements | - |
| Disposal statements | - |

2.4 Other hazards

| | |
|------------------------|---|
| PBT & vPvB: | PBT: Not applicable vPvB: Not applicable |
|------------------------|---|

This product contains materials of human and animal origins and should be considered as potentially capable of transmitting infectious diseases.

See Section 11 Toxicological Information for more detailed health information.

3 COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Ingredients: | | Hazard Classification of Pure Ingredients | |
|--|----------|---|---|
| Chemical Name | % by wt. | EU 1272/2008 CLP/GHS | GHS |
| Maleic acid CAS # 110-16-7 EINECS# 203-742-5 Index # 607-095-00-3 | < 2,0 | Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1 Skin Sens. 1 STOT SE 3 H302; H312; H315; H318; H317; H335 | Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1 Skin Sens. 1 STOT SE 3 H302; H312; H315; H318; H317; H335 |

See section 8 for available Occupational exposure limits

See Section 15 for additional regulatory information

See Section 16 for hazard class, hazard statements and risk phrase description

4 FIRST AID MEASURES

4.1 Description of first aid measures

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|---------------------|---|
| Inhalation | If product is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration immediately and obtain medical attention. |
| Eye Contact | If product enters eyes, rinse eyes gently with water as a precaution. |
| Skin Contact | In case of skin contact, rinse with water as a precaution. |
| Ingestion | If product is ingested, rinse mouth with water. If irritation or discomfort occurs, obtain medical attention immediately. |

4.2 Most important symptoms and effects, both acute and delayed

May produce an allergic reaction in some people.

See Section 11 Toxicological Information for more detailed health information.

4.3 Indication of any immediate medical attention and special treatment needed

No specific medical attention or treatment required.

5 FIRE FIGHTING MEASURES**5.1 Extinguishing media**

In case of fire use carbon dioxide (CO₂), dry chemical, water spray or foam.
For large fires use extinguishing media suitable for surrounding fire.

5.2 Special hazards arising from the substance or mixture

Special Fire and Explosion Hazards: No special Hazards determined.

Hazardous Combustion Products: No Combustible products posing significant hazards are expected from this product (an aqueous solution).

5.3 Advice for fire fighters

Protective Equipment: Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

5.4 Additional information

No further relevant information available.

6 ACCIDENTAL RELEASE MEASURES**6.1 Personal precaution, protective equipment and emergency procedures**

Personal Precautions: This product contains material of human and animal origin and should be handled as though capable of transmitting infectious diseases. Observe general safety guidelines for protection during clean up procedures.

Wear protective gloves, protective clothing and eye/face protection.

6.2 Environmental Precautions

Isolate area and absorb spill with sand, vermiculite or other inert absorbent material. Place absorbed material in container suitable for disposal.

Do not allow the undiluted product to enter sewers/surface or ground water.
Dispose of all waste material in accordance with local and facility guidelines.

6.3 Methods and material for containment and cleaning-up

Spill and Leak Procedures: As a precautionary measure, treat spilled material with a 1:10 bleach/water solution. Absorb liquid and place in container suitable for disposal. Avoid generation of aerosols during clean up. Comply with applicable waste disposal regulations.

6.4 Reference to other sections

Refer sections 8 and 13.

7 HANDLING AND STORAGE**7.1 Precautions for safe handling**

This product should be handled as though capable of transmitting infectious diseases. Universal precautions should be followed when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Store at 2 to 8°C, as directed on the product label.

To maintain product quality, store according to the instructions in the product labeling.

Store away from strong acids, strong bases, strong oxidizers and incompatible materials (section 10).

7.3 Specific end uses

No further relevant information available.

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| 8 EXPOSURE CONTROLS/PERSONAL PROTECTION |
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8.1 Control parameters
Exposure Limits

| | |
|---------|------------------|
| US OSHA | None established |
| ACGIH | None established |
| DFG MAK | None established |
| Ireland | None established |
| IOELVs | None established |
| NIOSH | None established |
| Japan | None established |

8.2 Exposure controls

| | |
|-------------------------------|---|
| Engineering Controls | Place vial behind a metal shield, away from the user. |
| Eye Protection | Safety glasses or chemical goggles should be worn to prevent eye contact. Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards. |
| Skin Protection | Impervious gloves, such as Nitrile or equivalent, should be worn to prevent skin contact. Refer U.S. OSHA 29 CFR 1910.138, European Standard EN374 or appropriate government standards. |
| Respiratory Protection | Under normal conditions, the use of this product should not require respiratory protection. If overexposure should occur and ventilation is not adequate to maintain airborne concentrations at acceptable levels, the use of respiratory protection should be evaluated by a qualified professional. |

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| 9 PHYSICAL AND CHEMICAL PROPERTIES |
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9.1 Information on basic physical and chemical properties

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|----------------------------------|----------------|--|----------------|
| Physical State | Liquid | Specific Gravity (water = 1.0) | 1.00 @20°C |
| Color | Yellowish | Solubility: | |
| Transparency | Clear | Water | Miscible |
| Odor | Odorless | Organic | Not applicable |
| pH | 6,5 | Coefficient of Water/Oil Distribution | Not determined |
| Freezing Point | Not determined | Autoignition Temp. | Not applicable |
| Boiling Point | Not determined | Decomposition Temperature | Not determined |
| Flash Point | Not applicable | Percent Volatiles | Not determines |
| Evaporate Rate | Not determined | Vapor Pressure | Not determined |
| Flammability (Solid, Gas) | Not applicable | Viscosity | Not determined |
| Flammable Limits | Not determined | Explosive Properties | Not applicable |
| Vapor Density | Not determined | Oxidizing Properties | Not determined |
| Odor threshold | Not applicable | | |

9.2 Other information

No further relevant information available.

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| 10 STABILITY AND REACTIVITY |
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10.1 Reactivity

No further relevant information available.

10.2 Chemical Stability

The product is stable in accordance with recommended storage conditions.

10.3 Possibility of hazardous reactions

No further relevant information available.

10.4 Conditions to Avoid

To maintain product performance keep away from strong acids, strong bases, strong oxidizers. Avoid exposure to heat and direct sunlight.

10.5 Incompatible materials

No further relevant information available.

10.6 Hazardous Decomposition Products

No decomposition products posing significant hazards would be expected from this product (an aqueous solution).

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxicity Data for Hazardous

Ingredients

Maleic acid

Oral LD50 Rat 1090mg/kg

CAS # 7647-01-0

Primary Routes of Exposure

Common routes of entry include inhalation, ingestion and eye/skin contact. Specific paths of concern for potentially infectious materials are skin puncture, contact with broken skin, contact with mucous membranes and inhalation of aerosolized material.

Acute Toxicity

Not classified based on available data.

Skin Corrosion/Irritation

Not classified based on available data.

Serious eye damage/eye irritation

Not classified based on available data.

Respiratory/skin sensitization

May cause an allergic skin reaction.

Carcinogenicity

This product does not contain a reportable concentration ($\geq 0.1\%$) of any ingredient listed as carcinogen by ACGIH, IARC, NTP, OSHA or 1272/2008 EC regulation.

Germ cell mutagenicity

Not classified based on available data.

Reproductive Toxicity

Not classified based on available data.

Specific target organ toxicity – single exposure

Not classified based on available data.

Specific target organ toxicity – repeated exposure

Not classified based on available data.

Aspiration hazard

Not classified based on available data.

Other information

This product contains materials of human and animal origin and should be considered as potentially capable of transmitting infectious diseases.

12 ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Fresh Water Species

No information available

Microtox

No information available

Water Flea

No information available

Fresh Water Algae

No information available

12.2 Persistence and degradability

Not determined for the product.

12.3 Bioaccumulation

Not determined for the product.

12.4 Mobility in soil

Not determined for the product.

12.5 Results of PBT and vPvB assessment

Not determined for the product. PBT: Not applicable, vPvB: Not applicable.

12.6 Other adverse effects

No further relevant information available.

13 DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product Waste Disposal:**

Chemical residues and remains should be routinely handled as special waste. This must be disposed of in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

Dispose of as potentially biohazardous waste and in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

Package disposal:

Dispose of waste product, unused product and contaminated packaging in compliance with federal, state and local regulations. If unsure of the applicable requirements, contact the authorities for information.

13.2 Additional Information

Suggested European waste catalogue 18 01 07 - chemicals other than those mentioned in 18 01 06. Dispose in accordance with national, state and local waste regulations.

14 TRANSPORT INFORMATION

Transportation of this product is not regulated under ICAO, IATA DGR, IMDG, US DOT, European ADR and RID or Canadian TDG.

14.1 UN/ID Number

Not regulated for transportation

14.2 Shipping Name

Not regulated for transportation

14.3 Hazard Class

Not regulated for transportation

14.4 Packing Group

Not regulated for transportation

14.5 Environmental Hazards

Not regulated for transportation

14.6 Special Precautions for user

None

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

15 REGULATORY INFORMATION

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

Us Federal and State Regulations

SARA 313

No ingredients listed

CERCLA (The Comprehensive Environmental Response, Compensation and Liability Act) 40 CFR 302.4

No ingredients listed

California Proposition 65

WARNING: This product can expose you to chemical which is known to the State of California to cause cancer and/or harm. For more information, go to www.P65Warnings.ca.gov

Chemical which is known to the State of California to cause cancer

No ingredients listed

Chemical which is known to the State of California to cause development toxicity

No ingredients listed

Chemical which is known to the State of California to cause male reproductive toxicity

No ingredients listed

Chemical which is known to the State of California to cause female reproductive toxicity

No ingredients listed

Massachusetts MSL

No ingredients listed

New Jersey Dept. of Health RTK List

No ingredients listed

Pennsylvania RTK

No ingredients listed

EU regulations

This SDS complies with EC Regulations 1907/2006 (REACH) and amendments.

Water Hazard Class (Germany)

WGK 1, low water endangering

REACH 1907/2006 EC - Annex XIV - list of substances subject to authorization

No ingredients listed.

Canada

This product is exempt from WHMIS label and SDS requirements.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out...

Some hazardous ingredients listed in Section 15 are below the cutoff of 0.1% for carcinogen, mutagen and reproductive toxin and 1% for other health hazards required for reporting in Section 3.

16 OTHER INFORMATION**Key or legend to abbreviations and acronyms**

°C – Degrees Celsius

°F – Degrees Fahrenheit

ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road.

ACGIH – American Conference of Governmental Industrial Hygienists

ATE – Acute Toxicity Estimate

BCF – Bioconcentration Factor

BEI – Biological Exposure Index

CAS – Chemical Abstracts Service

CLP – Regulation (EC) No 1272/2008 on the Classification, Labeling and Packaging of substances and mixtures.

cP – centipoise (unit of dynamic viscosity)

cSt – centistokes (unit of kinematic viscosity)

DNEL – Derived No-effect Level

EC50 – Half maximal effective concentration

ECHA – European Chemicals Agency

EC-No. – European Community number

EU – European Union

GHS – Globally Harmonized System of Classification and Labelling of Chemicals

h – Hours

IATA – International Air Transport Association

IDLH – Immediately Dangerous to Life or Health

IMDG – International Maritime Dangerous Goods

IOELV – Indicative Occupational Exposure Limit Value

kPa – kilopascal

Kow – Octanol-Water Partition Coefficient

LC50 – Median Lethal Concentration

LD50 – Median Lethal Dose

mg/l – Milligram per liter

mg/kg – Milligram per kilogram

mg/m³ – Milligram per cubic meter

Min – Minutes

NIOSH – National Institute for Occupational Safety and Health

NOEC – No Observed Effect Concentration

N.O.S. – Not Otherwise Specified

OEL – Occupational Exposure Limit

PBT - Persistent, Bioaccumulative and Toxic

ppm – Parts per million

PVC – Polyvinyl chloride

REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006

RID – European Agreement concerning the International Carriage of Dangerous Goods by Rail

SDS – Safety Data Sheet

STEL – Short Term Exposure Limit

TLV – Threshold Limit Value

TWA – Time Weighted Average

UN – United Nations

vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Procedure used to derive the classification according to regulation (EC) n°1272/2008 (CLP)

Classification of the mixture is consistent with the method of valuation of regulation (EC) n°1272/2008.

List of relevant hazard statements and/or precautionary statements. (Full text of any statements which are not written out in full under section 3)Hazard statements (H):

H312 Harmful in contact with skin.

H319 Causes serious eye irritation.

H315 Causes skin irritation.

H335 May cause respiratory irritation.

Advice on any training appropriate for workers to ensure protection of human health and the environment

No data available

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

The information given in this Safety Data Sheet is based on our present knowledge on European and regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it does not guarantee all the product properties particularly in the case of non-identified uses. The product must not be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

The information given in this Safety Data Sheet is based on our present knowledge and on European and national regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it doesn't guarantee all the product properties particularly in the case of non-identified uses. The product mustn't be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

Notification:

English is acceptable for our MSDS as the following conditions are met:

- Medical specialists (users) are well educated in the English language

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|--------------------------|
| INCUBATION BUFFER |
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|---|
| 1 INFORMATION OF THE SUBSTANCE/PREPARATION AND COMPANY |
|---|

1.1 Product identifier

Product Name: Incubation Buffer

Catalog #: Component the kits mentioned on the first page

1.2 Intended Use

For Research Use Only. See product literature for details.

1.3 Company

Demeditec Diagnostics GmbH

Lise-Meitner-Str. 2

24145 Kiel

Germany

Tel. No. +49 (0)431/71922-0

 e-mail: info@demeditec.de
1.4 Emergency telephone

Demeditec (only office hours): +49 (0)431/71922-0

Please refer to your local Anti-Poison Center!

| |
|---------------------------------|
| 2 HAZARDS IDENTIFICATION |
|---------------------------------|

2.1 Classification of the substance or mixture

| | |
|----------------------------|------------------------------------|
| Product Description | Yellowish; Clear; Liquid; Odorless |
|----------------------------|------------------------------------|

| | |
|---|---|
| Classification according to EC 1272/2008 (CLP/GHS) | Acute toxicity Category 4 Eye Irritation Category 2 Specific target organ toxicity - single exposure Category 3 Skin irritation Category 2 |
|---|---|

| | |
|--|---|
| Classification according to US-OSHA (HCS 29 CFR 1910.1200) and UN GHS | Not classified as hazardous per US-OSHA HCS 2012 and UN GHS |
|--|---|

2.2 Classification according to the regulation (EC) n°1272/2008 (CLP) and its amendments

| | |
|----------------------|--|
| Acute Tox., Dermal 4 | H312 Harmful in contact with skin. |
| Eye Irrit. 2 | H319 Causes serious eye irritation. |
| Skin Irrit 2 | H315 Causes skin irritation. |
| STOT SE | H335 May cause respiratory irritation. |

2.3 Label elements according to the regulation (EC) n°1272/2008 (CLP) and its amendments
Danger symbol

Signal word

Warning

Product Identifier

Maleic acid, < 2% v/v

Danger

 H312 Harmful in contact with skin.
 H319 Causes serious eye irritation.
 H315 Causes skin irritation.
 H335 May cause respiratory irritation.

MATERIAL SAFETY DATA SHEET

(According to regulation (EC) 1907/2006 and amendments)

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

Supplemental Hazard Information
Prevention statements

 P261 Avoid breathing vapours.
 P273 Avoid release to the environment.
 P280 Wear protective gloves, protective clothing and eye/face protection.

Response statements

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Storage statements

-

Disposal statements

-

2.4 Other hazards
PBT & vPvB:

PBT: Not applicable

vPvB: Not applicable

This product contains materials of human and animal origins and should be considered as potentially capable of transmitting infectious diseases.

See Section 11 Toxicological Information for more detailed health information.

3 COMPOSITION/INFORMATION ON INGREDIENTS

| Hazardous Ingredients: | | Hazard Classification of Pure Ingredients | |
|--|----------|---|---|
| Chemical Name | % by wt. | EU 1272/2008 CLP/GHS | GHS |
| Maleic acid CAS # 110-16-7 EINECS# 203-742-5 Index # 607-095-00-3 | < 2,0 | Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1 Skin Sens. 1 STOT SE 3 H302; H312; H315; H318; H317; H335 | Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1 Skin Sens. 1 STOT SE 3 H302; H312; H315; H318; H317; H335 |

See section 8 for available Occupational exposure limits

See Section 15 for additional regulatory information

See Section 16 for hazard class, hazard statements and risk phrase description

4 FIRST AID MEASURES
4.1 Description of first aid measures

Inhalation If product is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration immediately and obtain medical attention.

Eye Contact If product enters eyes, rinse eyes gently with water as a precaution.

Skin Contact In case of skin contact, rinse with water as a precaution.

Ingestion If product is ingested, rinse mouth with water. If irritation or discomfort occurs, obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

May produce an allergic reaction in some people.

See Section 11 Toxicological Information for more detailed health information.

4.3 Indication of any immediate medical attention and special treatment needed

No specific medical attention or treatment required.

5 FIRE FIGHTING MEASURES**5.1 Extinguishing media**

In case of fire use carbon dioxide (CO₂), dry chemical, water spray or foam.
For large fires use extinguishing media suitable for surrounding fire.

5.2 Special hazards arising from the substance or mixture

Special Fire and Explosion Hazards: No special Hazards determined.

Hazardous Combustion Products: No Combustible products posing significant hazards are expected from this product (an aqueous solution).

5.3 Advice for fire fighters

Protective Equipment: Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

5.4 Additional information

No further relevant information available.

6 ACCIDENTAL RELEASE MEASURES**6.1 Personal precaution, protective equipment and emergency procedures**

Personal Precautions: This product contains material of human and animal origin and should be handled as though capable of transmitting infectious diseases. Observe general safety guidelines for protection during clean up procedures.

Wear protective gloves, protective clothing and eye/face protection.

6.2 Environmental Precautions

Isolate area and absorb spill with sand, vermiculite or other inert absorbent material. Place absorbed material in container suitable for disposal.

Do not allow the undiluted product to enter sewers/surface or ground water.
Dispose of all waste material in accordance with local and facility guidelines.

6.3 Methods and material for containment and cleaning-up

Spill and Leak Procedures: As a precautionary measure, treat spilled material with a 1:10 bleach/water solution. Absorb liquid and place in container suitable for disposal. Avoid generation of aerosols during clean up. Comply with applicable waste disposal regulations.

6.4 Reference to other sections

Refer sections 8 and 13.

7 HANDLING AND STORAGE**7.1 Precautions for safe handling**

This product should be handled as though capable of transmitting infectious diseases. Universal precautions should be followed when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Store at 2 to 8°C, as directed on the product label.

To maintain product quality, store according to the instructions in the product labeling.

Store away from strong acids, strong bases, strong oxidizers and incompatible materials (section 10).

7.3 Specific end uses

No further relevant information available.

| |
|--|
| 8 EXPOSURE CONTROLS/PERSONAL PROTECTION |
|--|

8.1 Control parameters
Exposure Limits

| | |
|---------|------------------|
| US OSHA | None established |
| ACGIH | None established |
| DFG MAK | None established |
| Ireland | None established |
| IOELVs | None established |
| NIOSH | None established |
| Japan | None established |

8.2 Exposure controls

| | |
|-------------------------------|---|
| Engineering Controls | Place vial behind a metal shield, away from the user. |
| Eye Protection | Safety glasses or chemical goggles should be worn to prevent eye contact. Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards. |
| Skin Protection | Impervious gloves, such as Nitrile or equivalent, should be worn to prevent skin contact. Refer U.S. OSHA 29 CFR 1910.138, European Standard EN374 or appropriate government standards. |
| Respiratory Protection | Under normal conditions, the use of this product should not require respiratory protection. If overexposure should occur and ventilation is not adequate to maintain airborne concentrations at acceptable levels, the use of respiratory protection should be evaluated by a qualified professional. |

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|---|
| 9 PHYSICAL AND CHEMICAL PROPERTIES |
|---|

9.1 Information on basic physical and chemical properties

| | | | |
|----------------------------------|----------------|--|----------------|
| Physical State | Liquid | Specific Gravity (water = 1.0) | 1.00 @20°C |
| Color | Yellowish | Solubility: | |
| Transparency | Clear | Water | Miscible |
| Odor | Odorless | Organic | Not applicable |
| pH | 6,5 | Coefficient of Water/Oil Distribution | Not determined |
| Freezing Point | Not determined | Autoignition Temp. | Not applicable |
| Boiling Point | Not determined | Decomposition Temperature | Not determined |
| Flash Point | Not applicable | Percent Volatiles | Not determines |
| Evaporate Rate | Not determined | Vapor Pressure | Not determined |
| Flammability (Solid, Gas) | Not applicable | Viscosity | Not determined |
| Flammable Limits | Not determined | Explosive Properties | Not applicable |
| Vapor Density | Not determined | Oxidizing Properties | Not determined |
| Odor threshold | Not applicable | | |

9.2 Other information

No further relevant information available.

| |
|------------------------------------|
| 10 STABILITY AND REACTIVITY |
|------------------------------------|

10.1 Reactivity

No further relevant information available.

10.2 Chemical Stability

The product is stable in accordance with recommended storage conditions.

10.3 Possibility of hazardous reactions

No further relevant information available.

10.4 Conditions to Avoid

To maintain product performance keep away from strong acids, strong bases, strong oxidizers. Avoid exposure to heat and direct sunlight.

10.5 Incompatible materials

No further relevant information available.

10.6 Hazardous Decomposition Products

No decomposition products posing significant hazards would be expected from this product (an aqueous solution).

11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxicity Data for Hazardous

Ingredients

Maleic acid

Oral LD50 Rat 1090mg/kg

CAS # 7647-01-0

Primary Routes of Exposure

Common routes of entry include inhalation, ingestion and eye/skin contact. Specific paths of concern for potentially infectious materials are skin puncture, contact with broken skin, contact with mucous membranes and inhalation of aerosolized material.

Acute Toxicity

Not classified based on available data.

Skin Corrosion/Irritation

Not classified based on available data.

Serious eye damage/eye irritation

Not classified based on available data.

Respiratory/skin sensitization

May cause an allergic skin reaction.

Carcinogenicity

This product does not contain a reportable concentration ($\geq 0.1\%$) of any ingredient listed as carcinogen by ACGIH, IARC, NTP, OSHA or 1272/2008 EC regulation.

Germ cell mutagenicity

Not classified based on available data.

Reproductive Toxicity

Not classified based on available data.

Specific target organ toxicity – single exposure

Not classified based on available data.

Specific target organ toxicity – repeated exposure

Not classified based on available data.

Aspiration hazard

Not classified based on available data.

Other information

This product contains materials of human and animal origin and should be considered as potentially capable of transmitting infectious diseases.

12 ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Fresh Water Species

No information available

Microtox

No information available

Water Flea

No information available

Fresh Water Algae

No information available

12.2 Persistence and degradability

Not determined for the product.

12.3 Bioaccumulation

Not determined for the product.

12.4 Mobility in soil

Not determined for the product.

12.5 Results of PBT and vPvB assessment

Not determined for the product. PBT: Not applicable, vPvB: Not applicable.

12.6 Other adverse effects

No further relevant information available.

13 DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods****Product Waste Disposal:**

Chemical residues and remains should be routinely handled as special waste. This must be disposed of in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

Dispose of as potentially biohazardous waste and in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

Package disposal:

Dispose of waste product, unused product and contaminated packaging in compliance with federal, state and local regulations. If unsure of the applicable requirements, contact the authorities for information.

13.2 Additional Information

Suggested European waste catalogue 18 01 07 - chemicals other than those mentioned in 18 01 06. Dispose in accordance with national, state and local waste regulations.

14 TRANSPORT INFORMATION

Transportation of this product is not regulated under ICAO, IATA DGR, IMDG, US DOT, European ADR and RID or Canadian TDG.

14.1 UN/ID Number

Not regulated for transportation

14.2 Shipping Name

Not regulated for transportation

14.3 Hazard Class

Not regulated for transportation

14.4 Packing Group

Not regulated for transportation

14.5 Environmental Hazards

Not regulated for transportation

14.6 Special Precautions for user

None

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

| |
|----------------------------------|
| 15 REGULATORY INFORMATION |
|----------------------------------|

15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture
Us Federal and State Regulations
SARA 313

No ingredients listed

CERCLA (The Comprehensive Environmental Response, Compensation and Liability Act) 40 CFR 302.4

No ingredients listed

California Proposition 65

WARNING: This product can expose you to chemical which is known to the State of California to cause cancer and/or harm. For more information, go to www.P65Warnings.ca.gov

Chemical which is known to the State of California to cause cancer

No ingredients listed

Chemical which is known to the State of California to cause development toxicity

No ingredients listed

Chemical which is known to the State of California to cause male reproductive toxicity

No ingredients listed

Chemical which is known to the State of California to cause female reproductive toxicity

No ingredients listed

Massachusetts MSL

No ingredients listed

New Jersey Dept. of Health RTK List

No ingredients listed

Pennsylvania RTK

No ingredients listed

EU regulations

This SDS complies with EC Regulations 1907/2006 (REACH) and amendments.

Water Hazard Class (Germany)

WGK 1, low water endangering

REACH 1907/2006 EC - Annex XIV - list of substances subject to authorization

No ingredients listed.

Canada

This product is exempt from WHMIS label and SDS requirements.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out...

Some hazardous ingredients listed in Section 15 are below the cutoff of 0.1% for carcinogen, mutagen and reproductive toxin and 1% for other health hazards required for reporting in Section 3.

| |
|-----------------------------|
| 16 OTHER INFORMATION |
|-----------------------------|

Key or legend to abbreviations and acronyms

°C – Degrees Celsius

°F – Degrees Fahrenheit

ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road.
ACGIH – American Conference of Governmental Industrial Hygienists
ATE – Acute Toxicity Estimate
BCF – Bioconcentration Factor
BEI – Biological Exposure Index
CAS – Chemical Abstracts Service
CLP – Regulation (EC) No 1272/2008 on the Classification, Labeling and Packaging of substances and mixtures.
cP – centipoise (unit of dynamic viscosity)
cSt – centistokes (unit of kinematic viscosity)
DNEL – Derived No-effect Level
EC50 – Half maximal effective concentration
ECHA – European Chemicals Agency
EC-No. – European Community number
EU – European Union
GHS – Globally Harmonized System of Classification and Labelling of Chemicals
h – Hours
IATA – International Air Transport Association
IDLH – Immediately Dangerous to Life or Health
IMDG – International Maritime Dangerous Goods
IOELV – Indicative Occupational Exposure Limit Value
kPa – kilopascal
Kow – Octanol-Water Partition Coefficient
LC50 – Median Lethal Concentration
LD50 – Median Lethal Dose
mg/l – Milligram per liter
mg/kg – Milligram per kilogram
mg/m³ – Milligram per cubic meter
Min – Minutes
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
N.O.S. – Not Otherwise Specified
OEL – Occupational Exposure Limit
PBT - Persistent, Bioaccumulative and Toxic
ppm – Parts per million
PVC – Polyvinyl chloride
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID – European Agreement concerning the International Carriage of Dangerous Goods by Rail
SDS – Safety Data Sheet
STEL – Short Term Exposure Limit
TLV – Threshold Limit Value
TWA – Time Weighted Average
UN – United Nations
vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data

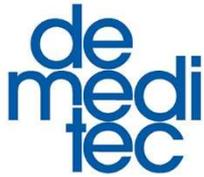
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Procedure used to derive the classification according to regulation (EC) n°1272/2008 (CLP)

Classification of the mixture is consistent with the method of valuation of regulation (EC) n°1272/2008.

List of relevant hazard statements and/or precautionary statements. (Full text of any statements which are not written out in full under section 3)

Hazard statements (H):



MATERIAL SAFETY DATA SHEET

(According to regulation (EC) 1907/2006 and amendments)

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

H312 Harmful in contact with skin.

H319 Causes serious eye irritation.

H315 Causes skin irritation.

H335 May cause respiratory irritation.

Advice on any training appropriate for workers to ensure protection of human health and the environment

No data available

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

The information given in this Safety Data Sheet is based on our present knowledge on European and regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it does not guarantee all the product properties particularly in the case of non-identified uses. The product must not be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

The information given in this Safety Data Sheet is based on our present knowledge and on European and national regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it doesn't guarantee all the product properties particularly in the case of non-identified uses. The product mustn't be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

Notification:

English is acceptable for our MSDS as the following conditions are met:

- Medical specialists (users) are well educated in the English language

2.3 Other hazards
PBT & vPvB:

PBT: Not applicable

vPvB: Not applicable

3 COMPOSITION/INFORMATION ON INGREDIENTS

| Name | (% w/w) | Classification | Specific concentration limits |
|---|---------|---------------------|---|
| Hydrochloric acid...%* CAS: 7647-01-0 EC: 231-595-7 Index number: 017-002-01-X | < 5% | Skin Corr. 1B, H314 | Skin Corr. 1B; H314: 10 - < 25% Eye Irrit. 2; H319: >= 10% |

***Note B:** Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ...%'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

4 FIRST AID MEASURES
4.1 Description of first aid measures
General information

In general, in case of doubt or if symptoms persist, always call a doctor. Never give anything by mouth to an unconscious person.

Following inhalation

If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen by a qualified person, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapour to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all case, ensure adequate ventilation and provide respiratory protection before the person returns to work.

Following skin contact

IF ON SKIN (or hair): Remove contaminated clothing. Rinse skin with water / with vegetable oil. Take a shower.

If irritation or rash occurs: Get medical advice.

Following eye contact

IF IN EYES: Rinse cautiously with plenty water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Following ingestion

IF SWALLOWED: Rinse thoroughly mouth with water. Immediately call a POISON CENTER/doctor. Do NOT induce vomiting.

For emergency responders

No data available.

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

No data available.

Effects

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5 FIRE FIGHTING MEASURES**5.1 Extinguishing media**

Appropriated: Use water spray or other suitable agent on fires adjacent to non-leaking tanks or intact containers of acid. If only a small amount of combustibles is present, smother fire with dry chemical.

Small fire: Dry powder or CO₂. Move containers from fire area, if it can be done without risk.

Large fire: Flood fire area with large quantities of water, while knocking down vapours with water fog. Cool containers with flooding quantities of water until well after fire is out. Do not get water inside containers. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

Non-appropriated: For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas

Not combustible.

Ambient fire may liberate hazardous vapours.

5.3 Advice for fire fighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

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

6 ACCIDENTAL RELEASE MEASURES**6.1 Personal precaution, protective equipment and emergency procedures**

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

For personal protection see section 8.

6.2 Environmental Precautions

Do not let product enter drains.

6.3 Methods and material 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

For disposal see section 13.

7 HANDLING AND STORAGE**7.1 Precautions for safe handling**

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities**Storage conditions**

No metal containers.

Tightly closed.

Corrodes metal Metal containers must be lined.

MATERIAL SAFETY DATA SHEET

(According to regulation (EC) 1907/2006 and amendments)

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

Storage class

Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials.

7.3 Specific Use(s)

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

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls



Appropriate engineering controls

Good general ventilation should be provided to keep vapour and mist concentrations below the exposure limits.

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario

Body Protection: protective clothing.

Respiratory protection: required when vapours/aerosols are generated. Recommended Filter type: Filter type ABEK.

Environmental exposure controls

Do not let product enter drains.

| |
|---|
| 9 PHYSICAL AND CHEMICAL PROPERTIES |
|---|

9.1 Information on basic physical and chemical properties

| | |
|---|--|
| Physical state | Liquid |
| Color | Colorless |
| Odour | Not available |
| Odor threshold | Not available |
| pH | <1 |
| Melting / Freezing point | Not available |
| Boiling point | Not available |
| Flash point | Not applicable |
| Evaporation rate | Not available |
| Flammability | Not available |
| Lower limit of flammability or explosive | Not applicable |
| Upper limit of flammability or explosive | Not applicable |
| Vapour pressure | 23hPa @ 20°C |
| Vapour density | Not available |
| Relative density | Not available |
| Water solubility | Completely miscible @ 20°C soluble |
| Solubility in other Solvents | Not available |
| Log Kow | Not available |
| Auto-inflammability temperature | Not applicable |
| Decomposition temperature | Not available |
| Viscosity | Kinematic: Not available Dynamic: Not available |
| Explosive properties | Not explosive |
| Oxidizing properties | None |
| Refractive index | Not available |

9.2 Other information

No data available.

| |
|------------------------------------|
| 10 STABILITY AND REACTIVITY |
|------------------------------------|

10.1 Reactivity

No data available.

10.2 Chemical Stability

Stable.

10.3 Possibility of hazardous reactions

Violent reactions possible with:
The generally known reaction partners of water.

10.4 Conditions to Avoid

No information available.

10.5 Incompatible materials

Reactions with: metals.

10.6 Hazardous Decomposition Products

In the event of fire: see section 5.

| |
|-------------------------------------|
| 11 TOXICOLOGICAL INFORMATION |
|-------------------------------------|

| | |
|------------------------------------|---|
| Acute toxicity | Oral: No data available. Inhalation: No data available. Dermal: No data available. |
| Skin irritation | Slight irritation. |
| Skin corrosion | Slight irritation. |
| Eye damage | Slight irritation. |
| Respiratory sensibilisation | Not available. |
| Germ cell mutagenicity | No data available. |
| Carcinogenicity | No data available. |
| Toxic for reproduction | No data available. |
| Unique specific toxicity | The substance or mixture is not classified as specific target organ toxicant, single exposure. |
| Repeated specific toxicity | The substance or mixture is not classified as specific target organ toxicant, repeated exposure. |
| Aspiration hazard | No data available. |
| Other information | Ingestion of large amounts may cause:, Local irritation Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately. Components hydrochloric acid <u>Acute toxicity</u> Oral: No data available Inhalation: Cough Difficulty in breathing Inhalation: Absorption 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 Dermal: No data available <u>Skin corrosion/irritation</u> Skin - reconstructed human epidermis (RhE) Result: Corrosive (OECD Test Guideline 431) <u>Serious eye damage/eye irritation</u> Eyes - Bovine cornea Result: Corrosive (OECD Test Guideline 437) <u>Respiratory or skin sensitization</u> Maximization Test - Guinea pig Result: negative (OECD Test Guideline 406) <u>Germ cell mutagenicity</u> Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Result: Conflicting results have been seen in different studies. <u>Carcinogenicity</u> Carcinogenicity - Did not show carcinogenic effects in animal experiments. (IUCLID) <u>Reproductive toxicity</u> |

MATERIAL SAFETY DATA SHEET

(According to regulation (EC) 1907/2006 and amendments)

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation. Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath, Inhalation may lead to the formation of oedemas in the respiratory tract., Possibledamages:, damage of respiratory tract, tissue damage

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

12 ECOLOGICAL INFORMATION**12.1 Ecotoxicity**

Mixture: No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulation

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

May be harmful to aquatic organisms due to the shift of the pH.

Components: hydrochloric acid

No data available

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

Remarks: (IUCLID).

13 DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Do not use the empty containers.

Waste disposal according to the Directives EC 75/442/EEC and 91/689/EEC in their latest versions by incineration or dispose of waste material.

13.2 Waste code numbers/Waste identification

No data available.

MATERIAL SAFETY DATA SHEET

(According to regulation (EC) 1907/2006 and amendments)

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

14 TRANSPORT INFORMATION

| | ADR | ADN/ADNR | IMDG | IATA |
|---|----------------|---------------|----------------|----------------|
| 14.1. UN number | Not applicable | | | |
| 14.2. UN proper shipping name | Not applicable | | | |
| 14.3. Transport hazard class(es) | Not applicable | | Not applicable | Not applicable |
| 14.4. Packing group | Not applicable | | Not applicable | Not applicable |
| 14.5. Environmental hazards | Not available | Not available | Not available | Not available |
| Hazard label | Not applicable | | | |
| Classification code | Not applicable | | | |
| 14.6. Special precautions for user | Not available | | | |
| 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not available | | | |
| Other information | Not available | Not available | Not available | Not available |

15 REGULATORY INFORMATION
15.1 Safety, health and environmental regulation/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 Assessment

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

16 OTHER INFORMATION
Key or legend to abbreviations and acronyms

°C – Degrees Celsius

°F – Degrees Fahrenheit

ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road.

ACGIH – American Conference of Governmental Industrial Hygienists

ATE – Acute Toxicity Estimate

BCF – Bioconcentration Factor

BEI – Biological Exposure Index

CAS – Chemical Abstracts Service

CLP – Regulation (EC) No 1272/2008 on the Classification, Labeling and Packaging of substances and mixtures.

cP – centipoise (unit of dynamic viscosity)

cSt – centistokes (unit of kinematic viscosity)

DNEL – Derived No-effect Level

EC50 – Half maximal effective concentration

ECHA – European Chemicals Agency

EC-No. – European Community number
EU – European Union
GHS – Globally Harmonized System of Classification and Labelling of Chemicals
h – Hours
IATA – International Air Transport Association
IDLH – Immediately Dangerous to Life or Health
IMDG – International Maritime Dangerous Goods
IOELV – Indicative Occupational Exposure Limit Value
kPa – kilopascal
Kow – Octanol-Water Partition Coefficient
LC50 – Median Lethal Concentration
LD50 – Median Lethal Dose
mg/l – Milligram per liter
mg/kg – Milligram per kilogram
mg/m³ – Milligram per cubic meter
Min – Minutes
NIOSH – National Institute for Occupational Safety and Health
NOEC – No Observed Effect Concentration
N.O.S. – Not Otherwise Specified
OEL – Occupational Exposure Limit
PBT - Persistent, Bioaccumulative and Toxic
ppm – Parts per million
PVC – Polyvinyl chloride
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID – European Agreement concerning the International Carriage of Dangerous Goods by Rail
SDS – Safety Data Sheet
STEL – Short Term Exposure Limit
TLV – Threshold Limit Value
TWA – Time Weighted Average
UN – United Nations
vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Procedure used to derive the classification according to regulation (EC) n°1272/2008 (CLP)

Classification of the mixture is consistent with the method of valuation of regulation (EC) n°1272/2008.

List of relevant hazard statements and/or precautionary statements. (Full text of any statements which are not written out in full under section 3)Hazard statements (H):

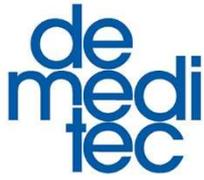
H314 Causes severe skin burns and eye damage.

Advice on any training appropriate for workers to ensure protection of human health and the environment

No data available

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

The information given in this Safety Data Sheet is based on our present knowledge on European and regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it does



MATERIAL SAFETY DATA SHEET

(According to regulation (EC) 1907/2006 and amendments)

Product Name: TNF-alpha human ELISA

Catalog #: DE4641

not guarantee all the product properties particularly in the case of non-identified uses. The product must not be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

The information given in this Safety Data Sheet is based on our present knowledge and on European and national regulations. This Safety Data Sheet describes safety requirements relative to identified uses, it doesn't guarantee all the product properties particularly in the case of non-identified uses. The product mustn't be used for any uses other than those identified under heading 1. Since the user's working conditions are not known by us, it is the responsibility of the user to take all necessary measures to comply with legal requirements for specific uses and avoid negative health effects.

Notification:

English is acceptable for our MSDS as the following conditions are met:

- Medical specialists (users) are well educated in the English language

MSDS established : 2022-12-29

Revision number : 7