U-CyTech B.V.
Yalelaan 42
3584 CM Utrecht
The Netherlands
+31 85 073 1460
cs@ucytech.com
www.ucytech.com

Safety data sheet

ELISA antibody pair

1. Identification of the product (substance or mixture) and supplier/company

1.1 Product identifiers

Product:	ELISA antibody pair
Catalogue no.:	Please see section 16 for the exact products for which this safety data sheet (SDS) applies.
Brand:	U-CyTech biosciences
REACH no.:	The components of this product are mixtures. A registration number is not available for these substances as the substances or their uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

1.2 Relevant identified uses of the product and uses advised against

Identified uses:	Laboratory chemicals. To be used in U-CyTech ELISA systems. For professional (R&D) use only, not for food, drug, household or other uses.

1.3 Details of the supplier of the safety data sheet

Supplier:	U-CyTech biosciences Yalelaan 42 3584 CM Utrecht The Netherlands Phone: +31 85 073 1460 E-mail: cs@ucytech.com

1.4 Emergency telephone number

Contact your local emergency number.

2. Hazard identification

2.1 Classification of the items in this product (substance or mixture)

Coating antibody and detection antibody are classified according to Regulation (EC) no. 1272/2008 and its amendments as

Not a hazardous substance or mixture.

2.2 Label elements

Labeling of coating antibody and detection antibody according to Regulation (EC) no. 1272/2008 and its amendments

Not a hazardous substance or mixture.

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2.3 Other hazards – none

3. Composition/information on ingredients

3.2 Mixtures

Product name: ELISA antibody pair

Synonyms: -

Components:

Cas no.	EC no.	Index no.	Classification	Concentration
Coating antibody (lyophilized)				
-	-	-	-	-
Standard (lyophilized)				
-	-	-	-	-
Coating antibody (lyophilized)				
-	-	-	-	-
Streptavidin-HRP conjugate (lyophilized)				
-	-	-	-	-

For (hazardous) ingredients of the components, see section 16 of this SDS.

4. First aid measures

4.1 Description of first aid measures

General advice: In case of skin or eye irritation, if breathing becomes difficult or feeling unwell or concerned, consult physician and show this SDS.

After contact with skin: Remove contaminated clothing and shoes. Wash contaminated area with water / shower.

After swallowing: If the person is conscious, rinse mouth with plenty of water and make the person drink water (two glasses at most). Consult a physician if not feeling well.

After contact with eyes: Rinse continuously with plenty of water for several minutes. Confirm adequate flushing by separating the eyelids. Remove contact lenses if present and easy to do – continue rinsing.

After inhalation: Provide fresh air. If breathing becomes difficult, consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 2 and 11.

4.3 Indication of any immediate medical attention and special treatment needed

No further data available. Note to physician: treat symptomatically.

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5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media: Water spray, foam, carbon dioxide (CO_2), dry powder.

Unsuitable extinguishing media: No limitations of extinguishing agents are given.

5.2 Special hazards arising from substance or mixture

No data available.

5.3 Advice for fire fighters

Stay in danger area only with self-contained breathing apparatus and protective clothing.

5.4 Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment to avoid exposure (section 8). Follow general safety rules for laboratories. Evacuate personnel to safe areas in case of an emergency.

Environmental precautions

Do not let mixtures enter surface water, (sub)soil or drains. Prevent further leakage if safe to do so.

6.2 Methods and materials for containment and cleaning up

Cover drains. Contain spillage. Take up dry. Dispose of properly (section 13). Clean up affected area. Avoid generation of dust. Observe possible material restrictions (sections 7 and 10).

7 Handling and storage

7.1 Precautions for safe handling

Safe handling: For laboratory use only. Ensure adequate ventilation. Handle and open containers with care. Always close containers tightly after removal of product.

Hygiene measures: Follow general safety rules for laboratories. Wear personal protective equipment to avoid (prolonged or repeated) exposure (section 2.2 and 8). Immediately change contaminated clothing. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage: Store product in a well-ventilated place. Keep containers tightly closed.

Steptavidin-HRP conjugate: Store at -32 to -18°C. Keep away from light.
Other components: Store at 2-8 °C.

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7.3 Specific end use(s)

Use in laboratories.

8 Exposure controls/personal protection

8.1 Control parameters

These mixtures do not contain substances above concentration limits fixing an occupational exposure limit.

8.2 Exposure controls

General protective and hygiene measures

Facilities storing or utilizing this product should be equipped with an eyewash facility, a safety shower and mechanical exhaust. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. Immediately change contaminated clothing. Keep away from food and beverages.

Personal protective equipment

Eye protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU). Use tightly fitting safety goggles.

Skin and body protection

Wear appropriate protective gloves and a lab coat to prevent skin exposure.
Protective gloves must satisfy the specifications of Regulation (EU) 2016/425 and the standard EN374 derived from it. Observe the instructions regarding permeability and breakthrough time which are provided by the suppliers of the gloves. Make sure the gloves are suitable for the task regarding chemical compatibility, dexterity, operational conditions and user susceptibility (e.g. sensation effects). Take also the specific local conditions under which the product is used into consideration (e.g. danger of cuts).
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.
This recommendation applies only to the product stated in this SDS and for the designed use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves.

Respiratory protection

Required when aerosols are generated, when workers are facing concentrations above the exposure limits or where risk assessment shows air-purifying respirators are appropriate.
Use respirators and components tested and approved under appropriate government standards such as NIOHS (US) or CEN (EU).
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

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Control of environmental expose

Do not let mixtures enter drains.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Coating antibody, standard, detection antibody and Streptavidin-HRP conjugate

A. Appearance (at 20 °C):	Solid, white (lyophilized).
B. Odor:	No data available.
C. Odor threshold:	No data available.
D. pH (at 20°C):	No data available.
E. Melting/freezing point:	No data available.
F. Initial boiling and boiling range:	No data available.
G. Flash point:	No data available.
H. Evaporation rate:	No data available.
I. Flammability (solid, gas):	No data available.
J. Upper/lower flammability or explosive limits:	No data available.
K. Vapor pressure:	No data available.
L. Vapor density:	No data available.
M. Relative density:	No data available.
N. Solubility(ies):	Soluble in water.
O. Partition coefficient: n-octanol/water:	No data available.
P. Auto-ignition temperature:	No data available.
Q. Decomposition temperature:	No data available.
R. Viscosity:	No data available.
S. Explosive properties:	No data available.
T. Oxidizing properties:	No data available.

9.2 Other information

No additional information relevant to safe use of the mixtures.

10 Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for these mixtures or their ingredients.

10.2 Chemical stability

The mixtures are chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

No hazardous reaction when handled and stored according to recommended conditions of storage, use and temperature.

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10.4 Conditions to avoid

No data available.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition products

Does not decompose when used for intended uses (section 1.2).

11 Toxicological information

11.1 Information on toxicological effects

Mixtures

Acute toxicity: No data available.
Skin corrosion/irritation: No data available.
Serous eye damage/irritation: No data available.
Respiratory/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 and repeated): No data available.
Aspiration hazard: No data available.

11.2 Additional information

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

Potential health effects other components:
Inhalation: May be harmful if inhaled and may cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin and may cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: May be harmful if swallowed.
Hazardous properties cannot be excluded but are unlikely when the product is handled with the care usual when dealing with chemicals.

(Hazardous) ingredients of coating antibody, standard, detection antibody and Streptavidin-HRP conjugate (section 16):

Proteins (antibodies, cytokines, and streptavidin- horseradish peroxidase polymer) and phosphate-buffered saline:
Acute toxicity: There is no evidence available indicating acute toxicity.
Skin corrosion/irritation: No data available.
Serous eye damage/irritation: No data available.
Respiratory/skin sensitization: No data available.
Germ cell mutagenicity: No data available.

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Carcinogenicity: No data available.
Reproductive toxicity: No data available.
Specific target organ toxicity (single and repeated): No data available.
Aspiration hazard: No data available.

Serum albumin *(this ingredient is no part of coating antibody)*:
Acute toxicity: No data available.
Skin corrosion/irritation: No data available.
Serous eye damage/irritation: No data available.
Respiratory/skin sensitization: No data available.
Germ cell mutagenicity: No data available.
Carcinogenicity: No component of this ingredient is present at levels higher 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 and repeated): No data available.
Aspiration hazard: No data available.

Trehalose, dihydrate:
Acute toxicity: LD50 oral - rat - male and female - >16,000 mg/kg.
Skin corrosion/irritation: Skin - rabbit: result: no skin irritation.
Serous eye damage/irritation: Eyes - rabbit: result: no eye irritation.
Respiratory/skin sensitization: Human - result: negative.
Germ cell mutagenicity: *In vitro* mammalian cell gene mutation test - Chinese hamster fibroblast - with and without metabolic activation - result: negative.
Mammalian bone marrow sister chromatid exchange - mouse - result: negative.
Carcinogenicity: No data available.
Reproductive toxicity: No data available.
Specific target organ toxicity (single and repeated): No data available.
Aspiration hazard: No data available.

12 Ecological information

Mixtures

12.1 Toxicity: No data available.
12.2 Persistence and degradability: No data available.
12.3 Bio-accumulative potential: No data available.
12.4 Mobility in soil: No data available.
12.5 Results of PBT and vPvB assessment: No data available.
12.6 Other adverse effects: No data available.

Toxicity ingredient Trehalose, dihydrate:
Static test EC50 - Daphnia magna (water flea) - >100 mg/l - 48h
Static test ErC50 - Desmodesmus sunspicatus (green algae) - 30.41 mg/l - 72h
Biodegradability ingredient Trehalose, dihydrate: Aerobic - exposure time 28d
Remarks: The 10 day time window criterion is not fulfilled. (anhydrous substance)

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13 Disposal considerations

13.1 Waste treatment methods

Products: The generation of waste should be avoided or minimized wherever possible. Waste material must be disposed in accordance with local, regional and national/federal regulations. Do not let products enter drains.

Packaging: Dispose of as unused product.

14 Transport information

14.1 UN number (ADR, RID, ADN, IMDG, IATA): Not applicable.
14.2 UN proper shipping name (ADR, RID, ADN, IMDG, IATA): Not dangerous.
14.3 Transport hazard class(es) (ADR, RID, ADN, IMDG, IATA): Not applicable.
14.4 Packing group (ADR, RID, ADN, IMDG, IATA): Not applicable.
14.5 Environmental hazards: None.
14.6 Special precautions for user: Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable.

15 Regulatory information

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

German Water hazard class: No data available.

15.2 Chemical Safety Assessment

For these mixtures a chemical safety assessment has not been carried out.

16 Other information

Specific (hazardous) ingredients of the items in this product

- Coating antibody, standard, detection antibody and Streptavidin-HRP conjugate - items are lyophilized, when reconstituted:

Cas no.	EC no.	Index no.	Classification	Concentration
Proteins (antibodies, cytokines or streptavidin - horseradish peroxidase polymer respectively)				
-	-	-	-	< 1% (v/v)
Serum albumin (*this ingredient is no part of coating antibody*)				
9048-46-8	232-936-2	-	-	1% (w/v)
Trehalose, dihydrate ($C_{12}H_{22}O_{11} \bullet 2H_2O$)				
6138-23-4	202-739-6	-	-	< 5% (w/v)
Phosphate-buffered saline (PBS)				
-	-	-	-	> 90% (v/v)

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This SDS applies to the following U-CyTech T cell ELISPOT antibody pairs:

Note:
Antibody pairs are available in a 10-plate format (CTxxx-10) and 20-plate format (CTxxx-20).

Analyte	Human	Monkey	Marmoset	Mouse	Rat
IFN-γ	CT740	CT710	CT770	CT755	CT700
IL-1ß	CT576	CT708			
IL-2	CT741	CT711	CT774	CT762	
IL-4	CT742	CT712		CT767	CT702
IL-5	CT743	CT713		CT764	
IL-6	CT744	CT714	CT777	CT763	
IL-8 (CXCL8)	CT748	CT718			
IL-10	CT745	CT715		CT765	
IL-12/IL-23 p40	CT749	CT719	CT775		
IL-12p70	CT750				
IL-13	CT746	CT716	CT771		
IL-17A	CT564	CT557	CT773		
IL-17F	CT568	CT553			
IL-21	CT580				
IL-23	CT567	CT552			
IL-27p28	CT574				
IL-29	CT575				
IL-31	CT570				
IL-33	CT569				
CXCL10 (IP-10)	CT572	CT555			
Angiopoietin-2	CT577	CT556			
G-CSF	CT769	CT669			
GM-CSF	CT739	CT709			
Granzyme B	CT752				
Perforin	CT753	CT720			
TNF-α	CT747	CT717	CT772	CT761	CT704

Reason for revision: Layout change, adjustment in section 16.

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS: Chemical Abstract Service
CE: Conformité Européenne
CEN: European Committee for Standardization
EC: European Commission
EC50: Effective concentration, 50%
EC no: European Chemical number
EQ: Excepted quantities
ErC50: Concentration with 50% reduction in growth rate
EU: European Union
IARC: International Agency for Research on Cancer

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IATA:	International Air Transport Association
IBC code:	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in bulk
IMDG:	International Maritime Dangerous Goods
LD50:	Lethal dose, 50%
LQ:	Limited quantities
Marpol:	Marine Pollution
NIOSH:	National Institute for Occupational Safety & Health
No:	Number
PBS:	Phosphate-buffered saline
PBT:	Persistent, bio-accumulative and toxic
R&D:	Research & Development
REACH:	Registration, Evaluation, Authorization and restriction of Chemicals
RID:	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS:	Safety data sheet
UN:	United Nations
US:	United States
vPvB:	Very persistent and very bio-accumulative

Further information

The information provided in this SDS is to the best of our knowledge and present information. The information is described as a guidance for safe handling and is not considered a warranty or quality specification. The information is only applicable to the described products and may not be valid for such products used in combination with any other products, materials or in any process, unless specified in the text. U-CyTech B.V. shall not be held liable for any damage resulting from handling or from contact with the above products.