

# SAFETY DATA SHEET

according to Regulation (EC) No 1907/2006 (REACH) as amended

## Monoclonal antibody

|                  |              |              |                |
|------------------|--------------|--------------|----------------|
| Date of creation | 01 June 2015 | Document no. | MSDS_OAEE00553 |
| Date of revision | 03 May 2018  | Version      | 2              |

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1 Product identifier**  
 Substance / mixture: TNF Antibody (OAEE00553)  
 Catalog number: Monoclonal antibody mixture  
 Other names of the mixture: OAEE00553
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**  
 Intended use of the mixture: Single antibody, single antibody labeled with fluorochrome or cocktail of fluorescently labeled antibodies containing sodium azide as a preservative.

#### The use descriptors

SU 20 Health services  
 SU 24 Scientific research and development PC 21  
 Laboratory chemicals  
 PROC 15 Use as laboratory reagent C  
 Consumer use

Not recommended use of the mixture The product should not be used in ways other than those referred in Section 1.

### 1.3 Details of the supplier of the safety data sheet

#### Manufacturer

Name or trade name: Aviva Systems Biology Corporation  
 Address: 5754 Pacific Center Blvd, Ste 201, San Diego, CA 92121

Phone: 1-858-552-6979/ Fax: 1-858-552-6975

Email: info@avivasysbio.com  
 Web address: www.avivasysbio.com

#### Competent person responsible for the safety data sheet

Name: Aviva Systems Biology Corporation  
 Email: info@avivasysbio.com

### 1.4 Emergency telephone number

CHEMTREC (800-424-9300)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification of the mixture in accordance with Regulation (EC) No 1272/2008

The mixture is not classified as dangerous according to Regulation (EC) No 1272/2008

#### The most serious adverse physico-chemical effects

Unknown

#### The most serious adverse effects on human health and the environment

Unknown

### 2. 2 Label elements

none

### 2.3. Other hazards

Substance does not meet the criteria for PBT or vPvB in accordance with Annex XIII of Regulation (EC) No 1272/2008.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

##### Chemical characterization

Mixture of substances specified below and non-hazardous additives.

##### Mixture contains these hazardous substances and substances with the highest permissible concentration in the working environment

| Identification numbers                                 | Name of the substance | Content in % weight | Classification according to Regulation (EC) No 1272/2008                                                        | Note.. |
|--------------------------------------------------------|-----------------------|---------------------|-----------------------------------------------------------------------------------------------------------------|--------|
| Index:011-004-00-7<br>CAS: 26628-22-8<br>ES: 247-852-1 | Sodium azide          | <0,099              | Acute Tox. 2, H300<br>Acute Tox. 1, H310<br>STOT RE 2, H373<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410 |        |

Full text of all classifications and H-phrases is given in the section 16.

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

If any health problems are manifested or if in doubt, inform a doctor and show him information from this Safety Data Sheet. If unconscious, put the person in the stabilized (recovery) position on his side with his head slightly bent backwards and make sure that airways are free; never induce vomiting. If the person vomits by himself, make sure that the vomit is not inhaled. In life threatening conditions first of all provide resuscitation of the affected person and ensure medical assistance. Respiratory arrest - provide artificial respiration immediately. Cardiac arrest - provide indirect cardiac massage immediately.

##### Inhalation

In case of problems following the vapours/aerosols inhalation, remove the affected persons to a fresh air. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. Call immediately medical emergency.

##### Skin contact

Immediately remove all soiled or stained clothing. Wash the affected area immediately and repeatedly with soap and water. Use appropriate regenerating cream. Seek medical advice if the skin irritation persists.

##### Eye contact

Keep eyelids open and rinse immediately and repeatedly with copious amount of water for at least 10 - 15 minutes. Remove contact lenses, if present and easy to do. Seek medical advice if the eye irritation persists.

##### Ingestion

If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting! In case of spontaneous vomiting avoid aspiration of the vomits. Get medical attention immediately and show product package or label!

#### 4.2. Most important symptoms and effects, both acute and delayed

##### Inhalation

Possible irritation of airways, cough, headache.

##### Skin contact

Not expected.

##### Eye contact

Not expected.

##### Ingestion

Not expected.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

alcohol-resistant foam, carbon dioxide, powder, water spray jet, water mist

##### Unsuitable extinguishing media

water - full jet

##### Special hazards arising from the substance or mixture

#### 5.2.

Non-flammable - aqueous solution. After evaporation of water, harmful gases / smoke (carbon dioxide, aldehydes, carbon black, other decomposition products) can be produced during thermal decomposition at high temperatures or with insufficient combustion.

##### Advice for firefighters

#### 5.3.

Use a self-contained breathing apparatus and full-body protective clothing. Closed containers with the product near the fire should be cooled with water. Do not allow run-off of contaminated fire extinguishing material to enter drains or surface and ground water.

### SECTION 6: Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

#### 6.1.

The mixture is non-flammable. Provide sufficient ventilation. Use gloves in case of prolonged contact. Follow the instructions in Sections 7 and 8.

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### 6.2. Environmental precautions

Prevent contamination of the soil and entering surface or ground water. Do not allow to enter drains.

### 6.3. Methods and material for containment and cleaning up

Spilled product should be covered with suitable (non-flammable) absorbing material (sand, diatomaceous earth, earth and other suitable absorption materials); to be contained in well closed containers and removed as per Section 13. Collected material should be disposed of in accordance with locally valid regulations. Upon an escape of large quantities of the product, inform the Fire Department and the Environmental Department of the Municipal Authority with extended scope of competencies. After removal of the product, wash the contaminated site with plenty of water or another suitable cleaning material. Do not use solvents.

### 6.4. Reference to other sections

7., 8. and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Observe all user considerations, safety measures and exposure limits. Avoid contact with skin, eyes and mucous membranes. See Section 8 for advice on the minimum requirements for personal protective equipment. Avoid breathing decomposition products or mists/aerosols. Use only with adequate ventilation.

Keep away from contamination with heavy metals. Sodium azide has been reported to form lead or copper azide in laboratory plumbing (heavy metals) which may explode on percussion. Treatment of sodium azide with strong acids gives hydrazoic acid, which is also extremely toxic.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed containers in cold, dry and well ventilated areas designated for this purpose. Do not expose to sunlight.

Storage class

12 - Other non-combustible liquids

#### The specific requirements or rules relating to the substance/mixture

Solvent vapours are heavier than air and accumulate especially near the floor where they may form an explosive mixture with the air.

### 7.3. Specific end use(s)

not available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Czech Republic

| Name of the substance (komponent) | Type  | Time of exposure | Value                 | Note | Source |
|-----------------------------------|-------|------------------|-----------------------|------|--------|
| Sodium azide<br>(CAS:26628-22-8)  | PEL   |                  | 0,1 mg/m <sup>3</sup> |      | 9/2013 |
|                                   | PEL   |                  | 0,0376 ppm            |      |        |
|                                   | NPK-P |                  | 0,3 mg/m <sup>3</sup> |      |        |
|                                   | NPK-P |                  | 0,1128 ppm            |      |        |

#### European union

| Name of the substance (komponent) | Type | Time of exposure | Value                 | Note | Source    |
|-----------------------------------|------|------------------|-----------------------|------|-----------|
| Sodium azide<br>(CAS:26628-22-8)  | OEL  | 8 hours          | 0,1 mg/m <sup>3</sup> |      | EU limits |
|                                   | OEL  | Short-term       | 0,3 mg/m <sup>3</sup> |      |           |

### 8.2. Exposure controls

Follow usual measures for health protection at work and especially for good ventilation. This can be achieved only by local suction or efficient general ventilation. If exposure limits cannot be observed in this mode, suitable protection of airways must be used. Do not eat, drink and smoke during work. Wash your hands thoroughly with water and soap after work and before breaks for a meal and rest.

#### Eye/face protection

Protective goggles or face shield (based on the nature of the work performed).

#### Skin protection

Hand protection: Protective gloves resistant against the product. Observe recommendations of the particular manufacturer of the gloves in the choice of their appropriate thickness, material and permeability. Use barrier creams for skin protection, they should however not be applied once exposure has occurred. Observe other recommendations of the manufacturer. Other protection: Protective antistatic clothing made of natural fibres

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(cotton) or synthetic fibres resistant against elevated temperatures. Contaminated skin should be washed thoroughly.

### Respiratory protection

Mask with a filter against organic vapours or a self-contained breathing apparatus as appropriate if exposure limit values of toxic substances are exceeded or in a poorly ventilated environment.

### Thermal hazard

not available

### Environmental exposure controls

Observe usual measures for protection of the environment, see Section 6.2.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                              |                         |
|----------------------------------------------|-------------------------|
| Appearance                                   | liquid at 20°C          |
| Physical state                               | liquid                  |
| Color                                        | clear / colourless      |
| odour                                        | no odour                |
| odour treshold                               | data not available      |
| pH                                           | data not available      |
| Melting point/freezing point                 | data not available      |
| Initial boiling point and boiling range      | 100°C                   |
| Flash point                                  | data not available      |
| Evaporation rate                             | data not available      |
| Flammability (solid, gas)                    | data not available      |
| Upper/lower flammability or explosive limits | data not available      |
| flammability limits                          | data not available      |
| explosive limits                             | data not available      |
| Vapour pressure                              | data not available      |
| Vapour density                               | data not available      |
| Relative density                             | cca 1 g/cm <sup>3</sup> |
| Solubility(ies)                              | data not available      |
| solubility in water                          | data not available      |
| solubility in fats                           | data not available      |
| Partition coefficient: n-octanol/water       | data not available      |
| Auto-ignition temperature                    | data not available      |
| Decomposition temperature                    | data not available      |
| Viscosity                                    | data not available      |
| Explosive properties                         | data not available      |
| Oxidising properties                         | data not available      |

### 9.2. Další informace

|                           |                    |
|---------------------------|--------------------|
| Density                   | data not available |
| auto-ignition temperature | data not available |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Not reactive under normal conditions of storage and manipulation. Sodium azide has been reported to form lead or copper azide in laboratory plumbing (heavy metals) which may explode on percussion. Treatment of sodium azide with strong acids gives hydrazoic acid, which is also extremely toxic.

### 10.2. Chemical stability

The product is stable under normal conditions.

### 10.3. Possibility of hazardous reactions

Sodium azide has been reported to form lead or copper azide in laboratory plumbing (heavy metals) which may explode on percussion.

### 10.4. Conditions to avoid

The product is stable and no degradation occurs under normal use. Protect against flames, sparks, overheating and against frost.

### 10.5. Incompatible materials

Protect against strong acids, bases and oxidizing agents. Thereby a dangerous exothermic reaction will be prevented.

### 10.6. Hazardous decomposition products

Not developed under normal uses. Dangerous products are formed at high temperature and in fire, such as carbon monoxide and carbon dioxide, heavy smoke and nitrogen oxides.

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### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

No toxicological data is available for the mixture

##### Acute toxicity - Sodium azide

| Route of exposure | Parameter | Value                | Time of exposure | Species                 | Sex |
|-------------------|-----------|----------------------|------------------|-------------------------|-----|
| Inhalation        | LD50      | 37 mg/m <sup>3</sup> |                  | Rat (Rattus norvegicus) |     |
| Oral              | LD50      | 27 mg/kg             |                  | Rat                     |     |
| Dermal            | LD50      | 20 mg/kg             |                  | Rabbit                  |     |

Based on available data the classification criteria are not met.

##### Skin corrosion/irritation

Based on available data the classification criteria are not met.

##### Serious eye damage/irritation

Based on available data the classification criteria are not met.

##### Respiratory or skin sensitisation

Based on available data the classification criteria are not met.

##### Germ cell mutagenicity

Based on available data the classification criteria are not met.

##### Carcinogenicity

Based on available data the classification criteria are not met.

##### Reproductive toxicity

Based on available data the classification criteria are not met.

##### Toxicity for specific target organ - single exposure

Based on available data the classification criteria are not met.

##### Toxicity for specific target organ - repeated exposure

Based on available data the classification criteria are not met.

##### Aspiration hazard

Based on available data the classification criteria are not met.

### SECTION 12: Ecological

#### information 12.1. Toxicity

##### Acute toxicity - Sodium azide

| Parameter | Value    | Time of exposure | Species               | Environment |
|-----------|----------|------------------|-----------------------|-------------|
| EC50      | 4,2 mg/l | 48 hod           | aquatic invertebrates |             |

#### 12.2. Persistence and degradability

Methods for determining biodegradability do not apply to inorganic substances .

#### 12.3. Bioaccumulative potential

Insignificant.

#### 12.4. Mobility in soil

The product is soluble and mobile in water and soil. Contamination of water courses may occur in case of rain.

#### 12.5. Results of PBT and vPvB assessment

The product is not classified as PBT or vPvB.

#### 12.6. Other adverse effects

not available

### SECTION 13: Disposal considerations

Hazard of environmental contamination; remove waste in accordance with local and/or national regulations.

#### 13.1. Waste treatment methods

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Proceed in accordance with valid regulations on waste disposal. Any unused product and contaminated packaging should be put in labelled containers for waste collection and submitted for disposal to an authorised person for waste removal (specialized company) authorised for such activity. Do not empty unused product in drainage systems. The product must not be disposed of with municipal waste. Empty containers may be used at waste incinerators to produce energy or deposited in a dump with appropriate classification. Perfectly cleaned containers can be submitted for recycling.

### Legislation of waste

Council Directive 75/442/EEC on waste, as amended. Council Directive 91/689/EEC on hazardous waste, as amended. Decision 94/3/EC establishing a list of wastes, as amended.

## SECTION 14: Transport information

The mixture **is not** classified as dangerous for transport according to ADR/RID/IMDG/ICAO/IATA.

### 14.1. UN number

Not subject to ADR.

### 14.2. UN proper shipping name

not available

### 14.3. Transport hazard class(es)

not available

### 14.4. Packing group

not available

### 14.5. Environmental hazards

not available

### 14.6. Special precautions for user

Reference in Sections 4 to 8.

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not available

## SECTION 15: Regulatory information

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

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, as amended. 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, as amended.

### 15.2. Chemical safety assessment

not available

## SECTION 16: Other information

### Changes made to the previous version of the safety data sheet

- H300** Fatal if swallowed
- H310** Fatal in contact with skin
- H373** May cause damage to organs through prolonged or repeated exposure.
- H400** Very toxic to aquatic life.
- H410** Very toxic to aquatic life with long lasting effects.

### Other important information about human health protection

The product must not be - unless specifically approved by the manufacturer/importer - used for purposes other than as per Section 1. The user is responsible for adherence to all related health protection regulations.

### Key to abbreviations and acronyms used in the safety data sheet

- ADR** European agreement concerning the international carriage of dangerous goods by road
- BCF** Bioconcentration Factor
- CAS** Chemical Abstract Service

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CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substance and mixtures

DNEL Derived no-effect level

EC50 Concentration of a substance when it is affected 50% of the population

EINECS European Inventory of Existing Commercial Chemical Substances

EMS Emergency plan

ES Identification code for each substance listed in EINECS

EU European Union

IATA International Air Transport Association

IBC International Code For The Construction And Equipment of Ships Carrying Dangerous Chemicals

IC50 Concentration causing 50 % blockade

ICAO International Civil Aviation Organization

IMDG International Maritime Dangerous Goods Transport

INCI International Nomenclature of Cosmetic Ingredients

ISO International Organization for Standardization

IUPAC International Union of Pure and Applied Chemistry

LC50 Lethal concentration of a substance in which it can be expected death of 50% of the population

LD50 Lethal dose of a substance in which it can be expected death of 50% of the population

LOAEC Lowest observed adverse effect concentration

LOAEL Lowest observed adverse effect level

Log Kow Octanol -water partition coefficient

MARPOL International Convention for the Prevention of Pollution From Ships

MFAG First Aid Manual

NOAEC No observed adverse effect concentration

NOAEL No observed adverse effect level

NOEC No observed effect concentration

NOEL No observed effect level

OEL Occupational Exposure Limits

PBT Persistent, Bioaccumulative and Toxic

PEL Permissible Exposure Limit

PNEC Predicted no-effect concentration

PPM Parts per million

REACH Registration, Evaluation, Authorisation and Restriction of chemicals (EP and Council Regulation (EC) No 1907/2006)

RID Agreement on the transport of dangerous goods by rail

UN Four-figure identification number of the substance or article taken from the UN Model Regulations

UVCB Substances of unknown or variable composition, complex reaction products or biological materials

VOC Volatile organic compounds

vPvB Very Persistent and very Bioaccumulative

W/W Weight by weight

Acute. Tox. Acute toxicity

Aquatic Chronic Hazardous to the aquatic environment

STOT RE Specific target organ toxicity - repeated exposure

### Training guidelines

Inform the personnel about the recommended ways of use, mandatory protective equipment, first aid and prohibited ways of handling the product.

### Recommended restrictions of use

not available

### Information about data sources used to compile the Safety Data Sheet

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (REACH) as amended.  
REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL as amended.  
Publication of "Zásady pro poskytování první pomoci při expozici chemickým látkám" (doc. MUDr. Daniela

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Pelclová, CSc., MUDr. Alexandr Fuchs, CSc., MUDr. Miroslava Hornyčová, CSc., MUDr. Zdeňka Trávníčková, CSc., Jiřina Fridrichovská, prom. chem.). Data from the manufacturer of the substance / mixture, if available - information from registration dossiers.

**Statement**

The safety data sheet provides information aimed at ensuring safety and health protection at work and environmental protection. The provided information corresponds to the current status of knowledge and experience and complies with valid legal regulations. The information should not be understood as guaranteeing the suitability and usability of the product for a particular application.