



## Material Safety Data Sheet

Revision Date: 02-14-2017

Kit Name: In Situ Ki67 Detection Kit (50 Assays)  
SKU#: VB-4002

### Components:

|           |  |
|-----------|--|
| VB-4002-1 | 10×Antigen Retrieval Solution                          |
| VB-4002-2 | RTU Blocking buffer                                    |
| VB-4002-3 | RTU anti-Ki67 Antibody                                 |
| VB-4002-4 | RTU polymeric peroxidase conjugated secondary antibody |
| VB-4002-5 | BrdU positive control FFPE slides                      |

## VB-4002-1 10×Antigen Retrieval Solution MSDS

### 1. Identification of the Substance/Mixture and Company

**Product Name** 10×Antigen Retrieval Solution MSDS  
**Catalog#** VB-4002-1  
**Product Description** Component  
**Manufacturer/Supplier** VitroVivo Biotech, LLC. 405 E Gude Dr., Suite 214, Rockville, MD 20850  
**Tel/fax Number** Phone: 301-500-0499; Toll free: 1-800-260-9817 Fax: 844-248-6208

### 2. Hazards Identification

#### Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)  
Based on available data, the classification criteria are not met

#### Label Elements

None required

#### Hazards not otherwise classified (HNOC)

None identified

### 3. Composition/information on ingredients

**Mixtures Description:** Mixture of the substances listed below.

#### **Composition:**

| Component        | CAS#      |
|------------------|-----------|
| Citrate acid     | 77-92-9   |
| Sodium hydroxide | 1310-73-2 |

### 4. First Aid Measures

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

**Inhalation** Remove to fresh air. Get medical attention immediately if symptoms occur.

**Ingestion** Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects** None reasonably foreseeable.

**Notes to Physician** Treat symptomatically

### 5. Firefighting Measures

**Suitable Extinguishing Media** Not combustible.

**Unsuitable Extinguishing Media** No information available

**Flash Point** No information available

**Method -** No information available

**Autoignition Temperature** No information available

**Explosion Limits**

**Upper** No data available

**Lower** No data available

|   |                          |
|---|--------------------------|
| <b>Sensitivity to Mechanical Impact</b> | No information available |
| <b>Sensitivity to Static Discharge</b>  | No information available |

**Specific Hazards Arising from the Chemical**

Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Sodium oxides.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

|        |              |             |                  |
|--------|--------------|-------------|------------------|
| Health | Flammability | Instability | Physical hazards |
| 1      | 0            | 0           | -                |

**6. Accidental Release Measures**

|                                  |  |
|----------------------------------|--|
| <b>Personal Precautions</b>      | Ensure adequate ventilation. Use personal protective equipment as required.                        |
| <b>Environmental Precautions</b> | Should not be released into the environment. See Section 12 for additional Ecological Information. |

**Methods for Containment and Clean Up**      Sweep up and shovel into suitable containers for disposal.

**7. Handling and Storage**

|                 |   |
|-----------------|---|
| <b>Handling</b> | Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. |
|-----------------|---|

|                |                    |
|----------------|--------------------|
| <b>Storage</b> | Keep refrigerated. |
|----------------|--------------------|

**8. Exposure Controls/Personal Protection**

|                                   |   |
|-----------------------------------|---|
| <b><u>Exposure Guidelines</u></b> | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| <b>Engineering Measures</b>       | None under normal use conditions.   |

**Personal Protective Equipment**

|                            |   |
|----------------------------|---|
| <b>Eye/face Protection</b> | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
|----------------------------|---|

|                                 |   |
|---------------------------------|---|
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure. |
|---------------------------------|---|

|                               |  |
|-------------------------------|--|
| <b>Respiratory Protection</b> | No protective equipment is needed under normal use conditions. |
|-------------------------------|--|

|                         |  |
|-------------------------|--|
| <b>Hygiene Measures</b> | Handle in accordance with good industrial hygiene and safety practice. |
|-------------------------|--|

**9. Physical and Chemical Properties**

|                            |                          |
|----------------------------|--------------------------|
| <b>Physical State</b>      | Liquid                   |
| <b>Appearance</b>          | Colorless                |
| <b>Odor</b>                | Odorless                 |
| <b>Odor Threshold</b>      | No information available |
| <b>pH</b>                  | 4 - 6                    |
| <b>Melting Point/Range</b> | No data available        |
| <b>Boiling Point/Range</b> | No information available |
| <b>Flash Point</b>         | No information available |

|   |                          |
|---|--------------------------|
| <b>Evaporation Rate</b>                       | No information available |
| <b>Flammability (solid,gas)</b>               | Not applicable           |
| <b>Flammability or explosive limits</b>       |                          |
| <b>Upper</b>                                  | No data available        |
| <b>Lower</b>                                  | No data available        |
| <b>Vapor Pressure</b>                         | No information available |
| <b>Vapor Density</b>                          | No information available |
| <b>Specific Gravity</b>                       | No information available |
| <b>Solubility</b>                             | No information available |
| <b>Partition coefficient; n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No information available |
| <b>Decomposition Temperature</b>              | No information available |
| <b>Viscosity</b>                              | No information available |

#### 10 Stability and Reactivity

|                                 |  |
|---------------------------------|--|
| <b>Reactive Hazard</b>          | None known, based on information available |
| <b>Stability</b>                | Stable under normal conditions.            |
| <b>Conditions to Avoid</b>      | Incompatible products.                     |
| <b>Incompatible Materials</b>   | Oxidizing agent                            |
| <b>Hazardous Decomposition</b>  | Products Sodium oxides                     |
| <b>Hazardous Polymerization</b> | Hazardous polymerization does not occur.   |
| <b>Hazardous Reactions</b>      | None under normal processing.              |

#### 11. Toxicological Information

##### Acute Toxicity

##### **Product Information**

|                    |   |
|--------------------|---|
| <b>Oral LD50</b>   | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| <b>Dermal LD50</b> | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| <b>Vapor LC50</b>  | Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.    |

##### Component Information

| Component   | LD50 Oral  | LD50 Dermal     | LC50 Inhalation |
|-------------|--|-----------------|-----------------|
| Citric acid | LD50 = 3 g/kg ( Rat )<br>LD50 = 3000 mg/kg ( Rat ) | >2 g/kg ( Rat ) | Not listed      |

**Toxicologically Synergistic Products** No information available

##### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|  |   |
|--|---|
| <b>Irritation</b>                                | No information available                                      |
| <b>Sensitization</b>                             | No information available                                      |
| <b>Carcinogenicity</b>                           | No information available                                      |
| <b>Mutagenic Effects</b>                         | No information available                                      |
| <b>Reproductive Effects</b>                      | No information available                                      |
| <b>Developmental Effects</b>                     | No information available                                      |
| <b>Teratogenicity</b>                            | No information available                                      |
| <b>STOT - single exposure</b>                    | None known  |
| <b>STOT - repeated exposure</b>                  | None known  |
| <b>Aspiration hazard</b>                         | No information available                                      |
| <b>Symptoms / effects,both acute and delayed</b> | No information available                                      |
| <b>Endocrine Disruptor Information</b>           | No information available                                      |
| <b>Other Adverse Effects</b>                     | The toxicological properties have not been fully investigated |

## 12. Ecological Information

### Ecotoxicity

| Component   | Freshwater Algae | Freshwater Fish                         | Microtox  | Water Flea          |
|-------------|------------------|---|---|---------------------|
| Citric acid | Not listed       | Leuciscus idus: LC50 = 440-760 mg/L/96h | Photobacterium phosphoreum: EC50 = 14 mg/L/15 min | EC50 = 120 mg/L/72h |

**Persistence and Degradability** Miscible with water Persistence is unlikely based on information available.  
**Bioaccumulation/ Accumulation** No information available.  
**Mobility** Will likely be mobile in the environment due to its water solubility.  
**Component Citric acid** log Pow -1.72

## 13. Disposal Considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport Information

**DOT** Not regulated  
**TDG** Not regulated  
**IATA** Not regulated  
**IMDG/IMO** Not regulated

## 15. Regulatory Information

### United States of America Inventory

| Component        | CAS-No    | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags |
|------------------|-----------|------|---|-----------------------------|
| Citric acid      | 77-92-9   | X    | ACTIVE  | -                           |
| Sodium hydroxide | 1310-73-2 | -    | -   | -                           |

### Legend:

**TSCA** - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export Not applicable

### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

| Component   | CAS-No    | DSL | NDSL | EINECS    | PICCS | ENCS | AICS | IECSC | KECL     |
|-------------|-----------|-----|------|-----------|-------|------|------|-------|----------|
| Citric acid | 77-92-9   | X   | -    | 231-791-2 | X     | X    | X    | X     | KE-35400 |
| NaOH        | 1310-73-2 | -   | -    | -         | X     | -    | X    | X     | -        |

### U.S. Federal Regulations

**SARA 313** Not applicable  
**SARA 311/312 Hazard Categories** See section 2 for more information  
**CWA (Clean Water Act)** Not applicable  
**Clean Air Act** Not applicable  
**OSHA** - Occupational Safety and Health Administration Not applicable  
**CERCLA** Not applicable  
**California Proposition 65** This product does not contain any Proposition 65 chemicals

U.S. Department of Transportation  
 Reportable Quantity (RQ): N

DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security** This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** No information available

**16. Other Information**

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Abbreviations and acronyms:

**ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

**IMDG:** International Maritime Code for Dangerous Goods

**DOT:** US Department of Transportation

**IATA:** International Air Transport Association

**ACGIH:** American Conference of Governmental Industrial Hygienists

**NFPA:** National Fire Protection Association (USA)

**HMIS:** Hazardous Materials Identification System (USA)

**LC50:** Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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## VB-4002-2 RTU Blocking Buffer MSDS

### 1. Identification of the Substance/Mixture and Company

|                              |  |
|------------------------------|--|
| <b>Product Name</b>          | RTU blocking buffer  |
| <b>Catalog#</b>              | VB-4002-2  |
| <b>Product Description</b>   | Component  |
| <b>Manufacturer/Supplier</b> | VitroVivo Biotech, LLC. 405 E Gude Dr., Suite 214, Rockville, MD 20850 |
| <b>Tel/fax Number</b>        | Phone: 301-500-0499; Toll free: 1-800-260-9817 Fax: 844-248-6208       |

### 2. Hazards Identification

#### GHS Classification

|                              |                |
|------------------------------|----------------|
| <b>Signal Word</b>           | None           |
| <b>Hazard pictograms</b>     | None           |
| <b>Health hazards</b>        | Not Hazardous  |
| <b>Environmental hazards</b> | Not Hazardous  |
| <b>Hazard Statements</b>     | Not Applicable |

#### Precautionary Statements

|                      |                |
|----------------------|----------------|
| <b>Prevention</b>    | Not Applicable |
| <b>Response</b>      | Not Applicable |
| <b>Storage</b>       | Not Applicable |
| <b>Disposal</b>      | Not Applicable |
| <b>Other hazards</b> | Not Applicable |

### 3. Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution.

### 4. First Aid Measures

#### Description of first aid measures

|                           |   |
|---------------------------|---|
| <b>Skin contact</b>       | Rinse skin with water. Immediate medical attention is not required.   |
| <b>Eye contact</b>        | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.                        |
| <b>Ingestion</b>          | Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If you feel unwell, seek medical advice. |
| <b>Inhalation</b>         | Not expected to be an inhalation hazard under anticipated conditions of normal use of this material. Consult a physician if necessary.      |
| <b>Notes to Physician</b> | Treat symptomatically.  |

#### **Most important symptoms and effects, both acute and delayed**

Not Applicable

#### **Indication of any immediate medical attention and special treatment needed**

None.

### 5. Firefighting Measures

#### Extinguishing media

|                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | Water spray. Carbon dioxide (CO2). Foam. Dry chemical. |
| Unsuitable extinguishing media | No information available.                              |

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

Not known

#### **Protective equipment and precautions for firefighters**

Standard procedure for chemical fires.

## 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation  
Always wear recommended Personal Protective Equipment  
Use personal protection equipment  
See section 8 for more information

### Environmental precautions

No special environmental precautions required.

### Methods and material for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

## 7. Handling and Storage

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place.  
Keep in properly labeled containers.

### Specific end use(s)

For Laboratory Use

## 8. Exposure Controls/Personal Protection

### Control parameters

|                      |   |
|----------------------|---|
| Exposure Limits      | Contains no substances with occupational exposure limit values. |
| Engineering Measures | Ensure adequate ventilation, especially in confined areas.      |

### Exposure controls

#### Personal Protective Equipment

##### Respiratory protection

In case of insufficient ventilation wear respirators and components tested and approved under appropriate government standards.

##### Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### Eye protection

Tight sealing safety goggles.

##### Skin and Body Protection

Wear suitable protective clothing.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

### Environmental exposure controls

No special environmental precautions require

## 9. Physical and Chemical Properties

|                                  |                          |
|----------------------------------|--------------------------|
| Physical State                   | Liquid                   |
| Appearance                       | Colorless                |
| Odor                             | Odorless                 |
| Odor Threshold                   | No information available |
| pH                               | 6-8                      |
| Melting Point/Range              | No data available        |
| Boiling Point/Range              | No information available |
| Flash Point                      | No information available |
| Evaporation Rate                 | No information available |
| Flammability (solid,gas)         | Not applicable           |
| Flammability or explosive limits |                          |



|   |                          |
|---|--------------------------|
| <b>Upper</b>                                  | No data available        |
| <b>Lower</b>                                  | No data available        |
| <b>Vapor Pressure</b>                         | No information available |
| <b>Vapor Density</b>                          | No information available |
| <b>Specific Gravity</b>                       | No information available |
| <b>Solubility</b>                             | No information available |
| <b>Partition coefficient; n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No information available |
| <b>Decomposition Temperature</b>              | No information available |
| <b>Viscosity</b>                              | No information available |

#### 10 Stability and Reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | None known.   |
| <b>Chemical stability</b>                 | Stable under normal conditions.                             |
| <b>Possibility of hazardous reactions</b> | Hazardous reaction has not been reported.                   |
| <b>Conditions to avoid</b>                | No information available.                                   |
| <b>Incompatible materials</b>             | No dangerous reaction known under conditions of normal use. |
| <b>Hazardous decomposition products</b>   | No data available   |

#### 11. Toxicological Information

##### Information on toxicological effects

There is no evidence available indicating acute toxicity.

##### **Principal Routes of Exposure**

|  |  |
|--|--|
| <b>Acute toxicity</b>                    | Data are conclusive but insufficient for classification. |
| <b>Skin corrosion/irritation</b>         | Data are conclusive but insufficient for classification  |
| <b>Serious eye damage/irritation</b>     | Data are conclusive but insufficient for classification  |
| <b>Respiratory or skin sensitization</b> | Data are conclusive but insufficient for classification  |

##### **Specific target organ toxicity (STOT)–single exposure**

Data are conclusive but insufficient for classification

##### **Specific target organ toxicity (STOT)–repeated exposure**

Data are conclusive but insufficient for classification

|                               |   |
|-------------------------------|---|
| <b>Carcinogenicity</b>        | Data are conclusive but insufficient for classification |
| <b>Germ cell mutagenicity</b> | Data are conclusive but insufficient for classification |
| <b>Reproductive toxicity</b>  | Data are conclusive but insufficient for classification |
| <b>Aspiration hazard</b>      | Data are conclusive but insufficient for classification |

#### 12. Ecological Information

##### **Ecotoxicity**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

|                                      |                           |
|--------------------------------------|---------------------------|
| <b>Mobility in soil</b>              | No information available. |
| <b>Persistence and degradability</b> | No information available. |
| <b>Bioaccumulative potential</b>     | No information available. |

##### **Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

##### **Other adverse effects**

No information available

#### 13. Disposal Considerations

##### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved disposal technique.

Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations

#### 14. Transport Information

##### **IATA / ADR / DOT-US / IMDG**

Not regulated in the meaning of transport regulations

|                                     |                |
|-------------------------------------|----------------|
| <b>UN number</b>                    | Not Applicable |
| <b>UN proper shipping name</b>      | Not Applicable |
| <b>Transport hazard class(es)</b>   | Not Applicable |
| <b>Packing group</b>                | Not Applicable |
| <b>Environmental hazards</b>        | Not Applicable |
| <b>Special precautions for user</b> | Not Applicable |

##### **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not Applicable.

#### 15. Regulatory Information

##### **US Federal Regulations**

###### **SARA 313**

This product is not regulated by SARA.

###### **Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain HAPs

##### **US State Regulations**

###### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

##### **WHMIS Hazard Class**

Non-controlled

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

##### **National Regulations - Brazil**

Not regulated

#### 16. Other Information

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Abbreviations and acronyms:

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**DOT:** US Department of Transportation

**IATA:** International Air Transport Association

**ACGIH:** American Conference of Governmental Industrial Hygienists

**NFPA:** National Fire Protection Association (USA)

**HMIS:** Hazardous Materials Identification System (USA)

**LC50:** Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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**VB-4002-3 RTU ant-Ki67 antibody MSDS**

**1. Identification of the Substance/Mixture and Company**

**Product Name** RTU anti-Ki67 antibody  
**Catalog#** VB-4002-3  
**Product Description** Component  
**Manufacturer/Supplier** VitroVivo Biotech, LLC. 405 E Gude Dr., Suite 214, Rockville, MD 20850  
**Tel/fax Number** Phone: 301-500-0499; Toll free: 1-800-260-9817 Fax: 844-248-6208

**2. Hazards Identification**

**Classification of the substance or mixture**

Not a hazardous substance or mixture.

**GHS Label elements, including precautionary statements**

Not a hazardous substance or mixture.

**Hazards not otherwise classified (HNOC) or not covered by GHS** – non

**3. Composition/information on ingredients**

**Mixtures**

No components need to be disclosed according to the applicable regulations.

**4. First Aid Measures**

**Description of first-aid measures**

**If inhaled** After inhalation: fresh air.  
**In case of skin contact** In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
**In case of eye contact** After eye contact: rinse out with plenty of water. Remove contact lenses.  
**If swallowed** After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

**Most important symptoms and effects, both acute and delayed**

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

**Indication of any immediate medical attention and special treatment needed**

No data available

**5. Firefighting Measures**

**Extinguishing media**

**Suitable extinguishing media**

Foam Carbon dioxide (CO2) Dry powder

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

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

Nature of decomposition products not known.  
Mixture with combustible ingredients.  
Development of hazardous combustion gases or vapours possible in the event of fire.

**Advice for firefighters**

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

**Further information**

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

## 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

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

### Reference to other sections

For disposal see section 13.

## 7. Handling and Storage

### Precautions for safe handling

For precautions see section

### Conditions for safe storage, including any incompatibilities

#### **Storage conditions**

Tightly closed.

#### **Storage stability**

Recommended storage temperature -20 °C

Storage class (TRGS 510): 10: Combustible liquids

### Specific end use(s)

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

## 8. Exposure Controls/Personal Protection

### Control parameters

#### **Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

### Exposure controls

#### **Appropriate engineering controls**

Change contaminated clothing. Wash hands after working with substance.

#### **Personal protective equipment**

##### **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.

##### **Full contact**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

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

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (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.

**Respiratory protection** Not required; except in case of aerosol formation.  
**Control of environmental exposure** Do not let product enter drains.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

**Physical State:** Liquid  
**Appearance:** clear  
**Odor:** odorless  
**pH:** Not available.  
**Vapor Pressure:** Not available.  
**Vapor Density:** Not available.  
**Evaporation Rate:** Not available.  
**Viscosity:** Not available.  
**Boiling Point:** Not available.  
**Freezing/Melting Point:** Not available.  
**Decomposition Temperature:** Not available.  
**Solubility:** Soluble.  
**Specific Gravity/Density:** Not available.  
**Molecular Formula:** Solution  
**Molecular Weight:** Not available.

## 10 Stability and Reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | No data available   |
| <b>Chemical stability</b>                 | The product is chemically stable under standard ambient conditions  |
| <b>Possibility of hazardous reactions</b> | No data available   |
| <b>Conditions to avoid</b>                | no information available  |
| <b>Incompatible materials</b>             | Halogenated hydrocarbon, Acids, Metals, Halogenated compounds, Acid chlorides, Dimethyl sulfate Strong oxidizing agents |
| <b>Hazardous decomposition products</b>   | In the event of fire: see section 5   |

## 11. Toxicological Information

### Information on toxicological effects

|                                   |  |
|-----------------------------------|--|
| Mixture                           |  |
| <b>Acute toxicity</b>             | No data available  |
| Inhalation:                       | No data available  |
| Dermal:                           | No data available  |
| Skin corrosion/irritation         | No data available  |
| Serious eye damage/eye irritation | No data available  |
| Respiratory or skin sensitization | No data available  |
| Germ cell mutagenicity            | No data available  |
| Carcinogenicity                   |  |
| IARC:                             | No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| NTP:                              | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.                 |
| OSHA:                             | No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.                                 |

**Reproductive toxicity** No data available  
**Specific target organ toxicity - single exposure** No data available  
**Specific target organ toxicity - repeated exposure** No data available  
**Aspiration hazard** No data available

**Additional Information** RTECS: Not available  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Hazardous properties cannot be excluded but are unlikely when the product is handled appropriately.

## 12. Ecological Information

**Toxicity Mixture**  
No data available

**Persistence and degradability**  
No data available

**Bioaccumulative potential**  
No data available

**Mobility in soil**  
No data available

**Results of PBT and vPvB assessment**  
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**Other adverse effects**  
No data available

## 13. Disposal Considerations

### **Waste treatment methods**

#### **Product**

Waste material must be disposed of in accordance with the national and local No mixing with other waste. Handle uncleaned containers like the product See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## 14. Transport Information

**DOT (US)**  
Not dangerous goods

**IMDG**  
Not dangerous goods

**IATA**  
Not dangerous goods

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

## 15. Regulatory Information

**SARA 302 Components**  
This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

No SARA Hazards

**Massachusetts Right To Know Components**

sodium azide CAS-No. 26628-22-8  
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

sodium azide CAS-No. 26628-22-8

**16. Other Information**

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Abbreviations and acronyms:

**ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

**IMDG:** International Maritime Code for Dangerous Goods

**DOT:** US Department of Transportation

**IATA:** International Air Transport Association

**ACGIH:** American Conference of Governmental Industrial Hygienists

**NFPA:** National Fire Protection Association (USA)

**HMIS:** Hazardous Materials Identification System (USA)

**LC50:** Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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## VB-4002-4 RTU polymeric peroxidase conjugated secondary antibody MSDS

### 1. Identification of the Substance/Mixture and Company

|                              |  |
|------------------------------|--|
| <b>Product Name</b>          | RTU polymeric peroxidase conjugated secondary antibody                 |
| <b>Catalog#</b>              | VB-4002-4  |
| <b>Product Description</b>   | Component  |
| <b>Manufacturer/Supplier</b> | VitroVivo Biotech, LLC. 405 E Gude Dr., Suite 214, Rockville, MD 20850 |
| <b>Tel/fax Number</b>        | Phone: 301-500-0499; Toll free: 1-800-260-9817 Fax: 844-248-6208       |

### 2. Hazards Identification

#### Classification

This substance/mixture is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

#### GHS Label elements, including precautionary statements

**Signal Word**  
Not classified

**Hazard statement(s)**  
None.

**Precautionary Statement(s)**  
None.

#### Supplementary Hazard Information

May produce an allergic reaction

**Hazards not otherwise classified (HNOC)**  
Not applicable.

### 3. Composition/information on ingredients

**Substances**  
Not applicable

**Mixtures**  
This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

### 4. First Aid Measures

|                     |  |
|---------------------|--|
| <b>Eye contact</b>  | Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. Get medical attention immediately if irritation persists. |
| <b>Skin contact</b> | Wash skin with soap and water.   |
| <b>Inhalation</b>   | IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.             |
| <b>Ingestion</b>    | Clean mouth with water and afterwards drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.                |

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

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

**Indication of any immediate medical attention and special treatment needed**  
Treat symptomatically.

#### Advice for emergency responders

**General advice** For further assistance, contact your local Poison Control Center.

**Protection of first-aiders** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Firefighting Measures

#### Extinguishing media

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** CAUTION: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical** No information available.

#### Explosion Data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

### 6. Accidental Release Measures

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

**For non-emergency personnel** Avoid contact with skin, eyes and clothing. Use personal protective equipment. For personal protection see section 8.

**Other information** No information available

#### Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

### 7. Handling and Storage

#### Precautions for safe handling

Wear personal protective equipment. See section 8. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

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

**Technical measures/Storage conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Packaging material** No information available.

**Incompatible products** Strong oxidizing agents. Strong acids

### 8. Exposure Controls/Personal Protection

#### Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

#### Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

**Eye/face protection** If splashes are likely to occur, wear: Tightly fitting safety goggles

**Skin and body protection** Wear protective gloves/clothing.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA

approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene measures**

Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and Chemical Properties**

**Information on basic physical and chemical properties**

**Physical State:** Liquid

**Appearance:** clear

**Odor:** Not available.

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:** Not available.

**Decomposition Temperature:** Not available.

**Solubility:** Soluble.

**Specific Gravity/Density:** Not available.

**Molecular Formula:** Solution

**Molecular Weight:** Not available.

**10 Stability and Reactivity**

**Reactivity**

No information available.

**Chemical stability**

Stable under normal conditions.

**Possibility of hazardous reactions**

Hazardous reactions                                 None under normal processing.

Hazardous polymerization                         None under normal processing.

**Conditions to Avoid**

Extremes of temperature and direct sunlight. Over a period of time, sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the HIGHLY EXPLOSIVE compounds of lead azide & copper azide.

**Incompatible Materials**

No information available.

**Hazardous Decomposition Products**

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**11. Toxicological Information**

**Information on likely routes of exposure**

**Inhalation**   Avoid breathing vapors or mists. May cause irritation of respiratory tract.

**Eye contact**   Avoid contact with eyes. May cause slight irritation.

**Skin contact**   Avoid contact with skin.

**Ingestion**   Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Information on toxicological effects**

This product is for experimental uses only. The product has not been completely analyzed and all of the hazards may not be known. Please use caution while handling this product.

|                                 |                           |
|---------------------------------|---------------------------|
| <b>Sensitization</b>            | No information available. |
| <b>Mutagenic effects</b>        | No information available. |
| <b>Carcinogenicity</b>          | No information available. |
| <b>Reproductive toxicity</b>    | No information available. |
| <b>STOT - single exposure</b>   | No information available. |
| <b>STOT - repeated exposure</b> | No information available. |
| <b>Neurological effects</b>     | No information available. |
| <b>Aspiration Hazard</b>        | No information available. |

## 12. Ecological Information

### Toxicity

**Ecology-general** The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment

**Persistence and degradability** No information available.

**Bioaccumulation** No information available.

**Mobility** No information available

### Other adverse effects

No information available

## 13. Disposal Considerations

### Waste Disposal Methods

Dispose of in accordance with all applicable national environmental laws and regulations.

### Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way

## 14. Transport Information

This material is not subject to regulation as a hazardous material for shipping

## 15. Regulatory Information

### US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

### International regulations

No additional information available

### US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.

## 16. Other Information

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Abbreviations and acronyms:

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**IMDG:** International Maritime Code for Dangerous Goods

**DOT:** US Department of Transportation

**IATA:** International Air Transport Association  
**ACGIH:** American Conference of Governmental Industrial Hygienists  
**NFPA:** National Fire Protection Association (USA)  
**HMIS:** Hazardous Materials Identification System (USA)  
**LC50:** Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

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## VB-4002-5 Ki67 Positive Control FFPE Slides MSDS

### 1. Identification of the Substance/Mixture and Company

|                              |  |
|------------------------------|--|
| <b>Product Name</b>          | Ki67 Positive Control FFPE Slides                                      |
| <b>Catalog#</b>              | VB-4002-5  |
| <b>Product Description</b>   | Component  |
| <b>Manufacturer/Supplier</b> | VitroVivo Biotech, LLC. 405 E Gude Dr., Suite 214, Rockville, MD 20850 |
| <b>Tel/fax Number</b>        | Phone: 301-500-0499; Toll free: 1-800-260-9817 Fax: 844-248-6208       |

### 2. Hazards Identification

#### GHS-Classification

#### Signal Word

Not Hazardous

#### Health Hazard

Not Hazardous

#### Physical Hazards

Not Hazardous

#### Principle Routes of Exposure/Potential Health Effects

|            |   |
|------------|---|
| Eyes       | May be harmful if exposed to eyes. May cause eye irritation, watering eyes, stinging or burning sensation.  |
| Skin       | May be harmful if exposed to skin. May cause skin irritation, itching, redness or inflammation.             |
| Inhalation | May be harmful if inhaled. May cause respiratory tract irritation, headache, dizziness, nausea or coughing. |
| Ingestion  | May be harmful if swallowed. May cause irritation of gastrointestinal tract, nausea, or vomiting.           |

#### Specific Effects

|                       |   |
|-----------------------|---|
| Carcinogenic Effects  | None  |
| Mutagenic Effects     | None  |
| Reproductive Toxicity | None  |
| Sensitization         | None  |
| Target Organ Effects  | No known effects under normal use conditions. |

#### WHMIS

|              |   |
|--------------|---|
| Health       | 0 |
| Flammability | 0 |
| Reactivity   | 0 |

### 3. Composition/information on ingredients

The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution.

### 4. First Aid Measures

|              |   |
|--------------|---|
| Eye Contact  | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.                        |
| Skin Contact | Wash off with soap and plenty of water. Consult a physician.  |
| Inhalation   | If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician. |
| Ingestion    | Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.           |

### 5. Firefighting Measures

|                                     |  |
|-------------------------------------|--|
| <b>Suitable Extinguishing Media</b> | Use water spray, alcohol- resistant foam, dry chemical or carbon dioxide.                              |
| <b>Special Protective</b>           | Wear self-contained breathing apparatus and protective clothing to prevent contact with eyes and skin. |
| <b>Equipment for Fire-fighters</b>  |  |
| <b>Unusual Fire</b>                 | N/A  |
| <b>Explosions Hazard(s)</b>         | N/A  |
| <b>Flash Point</b>                  | N/A  |
| <b>Autoignition Temp</b>            | N/A  |
| <b>Flammability</b>                 | N/A  |

## 6. Accidental Release Measures

|                                  |   |
|----------------------------------|---|
| <b>Personal Precautions</b>      | Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of vapors. Wear disposable coveralls and discard them after use. |
| <b>Methods for Cleaning-up</b>   | Soak up with inert absorbing materials and place in a closed container for disposal. Ventilate area and wash spill site after material pickup is complete.            |
| <b>Environmental Precautions</b> | Prevent further leakage or spillage if safe to do so. See Section 12 for additional information.  |

## 7. Handling and Storage

|                 |  |
|-----------------|--|
| <b>Handling</b> | Always wear recommended Personal Protective Equipment. Avoid contact with eyes, skin and clothing. Do not ingest. Wash hands thoroughly after use. |
| <b>Storage</b>  | Keep cap tightly closed. Keep container in a cool, well-ventilated area.   |

## 8. Exposure Controls/Personal Protection

**Exposure Limits**  
No known exposure limits.

**Engineering Measures**  
Ensure adequate ventilation, especially in confined areas.

### Personal Protective Equipment

Personal Protective Equipment Person protective Equipment requirements are dependent of the user institution's risk assessment, and are specific to the risk assessment for each laboratory where this material may be used.

|                          |  |
|--------------------------|--|
| Respiratory Protection   | Wear Suitable respiratory equipment if ventilation is insufficient.    |
| Hand                     | Compatible chemical-resistant gloves.                                  |
| Eye                      | Compatible safety goggles.   |
| Skin and Body Protection | Lightweight protective clothing.                                       |
| Hygiene Measures         | Handle in accordance with good industrial hygiene and safety practice. |

**Environmental Exposure Controls**  
No special environmental precautions required.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

**Physical State:** Solid

**Appearance:** clear

**Odor:** odorless

**pH:** Not available.

**Vapor Pressure:** Not available.  
**Vapor Density:** Not available.  
**Evaporation Rate:** Not available.  
**Viscosity:** Not available.  
**Boiling Point:** Not available.  
**Freezing/Melting Point:** Not available.  
**Decomposition Temperature:** Not available.  
**Solubility:** Soluble.  
**Specific Gravity/Density:** Not available.  
**Molecular Formula:** Not available.  
**Molecular Weight:** Not available.

## 10 Stability and Reactivity

### General Physical Properties

|                                 |  |
|---------------------------------|--|
| <b>Stability</b>                | Stable under recommended storage conditions. |
| <b>Materials to Avoid</b>       | No information available                     |
| <b>Hazardous Decomposition</b>  | No information available                     |
| <b>Hazardous Polymerization</b> | Does not occur                               |

## 11. Toxicological Information

### Acute Toxicity

Not Hazardous

### Principle Route of Exposure/Potential Health Effects

|                              |   |
|------------------------------|---|
| <b>Eye</b>                   | No information available                      |
| <b>Skin</b>                  | No information available                      |
| <b>Inhalation</b>            | No information available                      |
| <b>Ingestion</b>             | No information available                      |
| <b>Carcinogenic Effects</b>  | None  |
| <b>Mutagenic Effects</b>     | No information available                      |
| <b>Reproductive Toxicity</b> | No information available                      |
| <b>Sensitization</b>         | No information available                      |
| <b>Target Organ Effects</b>  | No known effects under normal use conditions. |

## 12. Ecological Information

|                            |                           |
|----------------------------|---------------------------|
| <b>Ecotoxicity Effects</b> | No information available  |
| <b>Mobility</b>            | No information available. |
| <b>Biodegradation</b>      | Inherently biodegradable. |
| <b>Bioaccumulation</b>     | Does not bioaccumulate.   |

## 13. Disposal Considerations

Dispose of in accordance with local regulations.

## 14. Transport Information

### IATA

|                          |  |
|--------------------------|--|
| <b>Proper Shipping</b>   | Not classified as dangerous under the transport regulations. |
| <b>Name Hazard Class</b> | None   |
| <b>Subsidiary Class</b>  | None   |
| <b>Packing Group</b>     | None   |
| <b>Un-No</b>             | None   |

## 15. Regulatory Information

### U.S. Federal Regulations

#### SARA 313

Not Regulated by SARA.



**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs)**

Contains no HAPs.

**U.S. State Regulations**

**California Proposition 65**

Contains no chemical listed under Proposition 65.

**Canadian Regulations**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by CPR.

**WHMIS Hazard Class**

Not controlled.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

**16. Other Information**

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