



## Material Safety Data Sheet

Revision Date: 01-14-2023

**Kit Name: In Situ Autophagy LC3B IHC-DAB Kit (50 Assays)**  
**SKU#: VB-4004D**

**Components:**

<b>VB-4004D-1</b>	10×Antigen retrieval solution
<b>VB-4004D-2</b>	RTU Block buffer
<b>VB-4004D-3</b>	RTU anti-LC3B antibody
<b>VB-4004D-4</b>	RTU Polymeric Peroxidase Conjugated Secondary Antibody
<b>VB-4004D-5</b>	DAB Stock Solution (40×)
<b>VB-4004D-6</b>	Stable DAB Buffer
<b>VB-4004D-7</b>	LC3B positive control FFPE slides

## VB-4004D-1 10×Antigen Retrieval Solution MSDS

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

<b>Product Name</b>	10×Antigen Retrieval Solution MSDS
<b>Catalog#</b>	VB-4004D-1
<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

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:**

<b>Component</b>	<b>CAS#</b>
Citrate acid	77-92-9
Sodium hydroxide	1310-73-2

### 4. First Aid Measures

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
<b>Inhalation</b>	Remove to fresh air. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	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

<b>Suitable Extinguishing Media</b>	Not combustible.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	No information available
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	No information available
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	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.
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<b>Storage</b>	Keep refrigerated.
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**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.
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<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
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<b>Respiratory Protection</b>	No protective equipment is needed under normal use conditions.
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<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.
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**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

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

#### 10 Stability and Reactivity

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

#### 11. Toxicological Information

##### Acute Toxicity

##### Product Information

Oral LD50	Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
Dermal LD50	Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
Vapor LC50	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 ) 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

Irritation	No information available
Sensitization	No information available
Carcinogenicity	No information available
Mutagenic Effects	No information available
Reproductive Effects	No information available
Developmental Effects	No information available
Teratogenicity	No information available
STOT - single exposure	None known
STOT - repeated exposure	None known
Aspiration hazard	No information available
Symptoms / effects,both acute and delayed	No information available
Endocrine Disruptor Information	No information available
Other Adverse Effects	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-4004D-2 Block Buffer MSDS

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

<b>Product Name</b>	RTU block buffer
<b>Catalog#</b>	VB-4004D-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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**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-4004D-3 RTU anti-LC3B antibody MSDS

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

<b>Product Name</b>	RTU anti-LC3B antibody
<b>Catalog#</b>	VB-4004D-3
<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 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**

Synonyms : Anti-Microtubule-associated proteins 1A/B light chain 3B

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

### 4. First Aid Measures

#### Description of first-aid measures

<b>If inhaled</b>	After inhalation: fresh air.
<b>In case of skin contact</b>	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
<b>In case of eye contact</b>	After eye contact: rinse out with plenty of water. Remove contact lenses.
<b>If swallowed</b>	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  
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.

##### **Skin protection**

##### **Full contact**

Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm

Break through time: 480 min  
Material tested: 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  
Anti-GAPDH antibody, Mouse monoclonal –

**New Jersey Right To Know Components**

Anti-GAPDH antibody, Mouse monoclonal CAS-No. -

**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-4004D-4 RTU polymeric peroxidase conjugated secondary antibody MSDS

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

**Product Name** RTU polymeric peroxidase conjugated secondary antibody  
**Catalog#** VB-4004D-4  
**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

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

#### **Eye contact**

Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. Get medical attention immediately if irritation persists.

#### **Skin contact**

Wash skin with soap and water.

#### **Inhalation**

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.

#### **Ingestion**

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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**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-4004D-5 DAB Stock Solution (40×) MSDS**

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

**Product Name** DAB Stock Solution (40×)  
**Catalog#** VB-4004D-5  
**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**

Acute toxicity, Oral (Category 4), H302  
Eye irritation (Category 2A), H319  
Germ cell mutagenicity (Category 2), H341  
Carcinogenicity (Category 1B), H350

**GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302  
Eye irritation (Category 2A), H319  
Germ cell mutagenicity (Category 2), H341  
Carcinogenicity (Category 1B), H350

**Label elements and precautionary statements**

Pictogram :

Signal word : Danger

Hazard statement(s) :

H302 - Harmful if swallowed.  
H319 - Causes serious eye irritation.  
H341 - Suspected of causing genetic defects.  
H350 - May cause cancer

Precautionary statement(s) :

P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P264 - Wash skin thoroughly after handling. P270 - Do not eat, drink or smoke when using this product.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+312+330 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.  
P305+351+338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+313 - IF exposed or concerned: Get medical advice/attention.  
P337+313 - If eye irritation persists: Get medical advice/attention.  
P405 - Store locked up.  
P501 - Dispose of contents/container to an approved waste disposal plant.

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

No unclassified hazards known.

**NFPA Rating**

Health hazard : 2  
Fire hazard : 0  
Reactivity hazard : 0

**HMIS Rating**

Health hazard : 2  
Chronic health hazard : \*

Reactivity hazard : 0  
Flammability : 0  
Physical hazard : 0

### 3. Composition/information on ingredients

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

**Composition:**

Component	CAS#
Propylene glycol	57-55-6
DAB	91-95-2

### 4. First Aid Measures

**Description of first aid measures**

**General advice**

Consult a physician if symptoms are severe or persistent. Provide this data sheet to medical personnel. If product is spilled or leaked, evacuate area.

**In case of inhalation**

If inhaled, move person to fresh air and monitor breathing. If not breathing, give artificial ventilation. Consult a physician if symptoms are severe or persistent.

**In case of skin contact**

Immediately wash with excess soap and water. If spilled on clothing, remove all affected clothing. Consult a physician if symptoms are severe or persistent.

**In case of eye contact**

Flush eyes with water or eye wash solution as a precaution for 15 minutes. Consult a physician if symptoms are severe or persistent.

**In case of ingestion**

Only induce vomiting if recommended by medical personnel. If subject is unconscious, do not give anything by mouth. If conscious, rinse mouth with water. Consult a physician if symptoms are severe or persistent.

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

All known important symptoms are described in Section 2 and/or Section 11. No other important symptoms to report.

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

No special treatment indicated. Provide treatment in accordance with exhibited systems.

### 5. Firefighting Measures

**Suitable extinguishing media**

Water spray, alcohol-resistant foam, dry chemical, and carbon dioxide extinguishers are suitable.

**Unsuitable extinguishing media**

No known unsuitable extinguishing media.

**Special hazards arising from the substance**

Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

**Advice for firefighters**

Wear protective gear, such as self-contained breathing apparatus, if necessary

### 6. Accidental Release Measures

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

Provide suitable ventilation. Use any necessary personal protective equipment. Avoid contact with skin and eyes, and avoid creation and inhalation of vapor or dust. Keep all unnecessary personnel away.

**For personal protection see section 8**

**Environmental precautions**

Prevent product from entering public sewers and waterways.

**Methods and material for containment and cleaning up**

Use inert absorbent material to absorb any spilled or leaked product. Keep in suitable, closed containers for disposal.

**For proper disposal see section 13**

**7. Handling and Storage**

**Precautions for safe handling**

Provide suitable ventilation. Wear any necessary personal protective equipment.

**For precautions see section 2**

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

Storage conditions : Store upright, closed container in arid, ventilated environment. Storage Temperature: 2-8°C Product is sensitive to light.

Incompatible materials : Strong oxidizing agents are incompatible with this product.

**8. Exposure Controls/Personal Protection**

**Control parameters**

This product is not known to contain any substances with occupational exposure limit values.

**Engineering controls**

Follow good industrial hygiene and safety practices when handling product.

**Personal protective equipment**

Eye/face protection : Use only government-approved safety glasses with side-shields.

Skin protection : Use gloves when handling product. Inspect gloves before use to ensure suitability for use. Remove without exposing skin to the gloves outer surface. Discard used gloves according to all pertinent laws and/or current good practices (cGXP). Wash hands with soap and water.

Body protection : Wear appropriate clothing. Ensure clothing is in good condition, with no holes or tears. When selecting clothing, consider the concentration and amount of substance to be handled.

Respiratory protection : Use only approved respirators and components which comply with CDC and NIOSH (US) or CEN (EU) regulations. Required only when vapors or aerosols are created.

Control of environmental exposure : Prevent product from entering the environment, especially through public sewers or waterways.

General hygiene considerations : Comply with general industrial hygiene practice guidelines.

**9. Physical and Chemical Properties**

**Information on basic physical and chemical properties**

**Physical State:** Liquid

**Appearance:** brown

**Odor:** weak odor

**pH:** Not available.

**Vapor Pressure:** Not available.

**Vapor Density:** >1.0

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** > 100 deg C



**Freezing/Melting Point:** > 0 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Soluble.  
**Specific Gravity/Density:** Not available.  
**Molecular Formula:** Solution  
**Molecular Weight:** Not available.

## 10 Stability and Reactivity

### **Reactivity**

No special reactivity is known.

### **Chemical stability**

Product is stable when stored and used as recommended.

### **Stability note(s)**

Avoid exposing the product to light.

### **Polymerization**

No known polymerization.

### **Possibility of hazardous reactions**

No hazardous reactions are known.

### **Incompatible materials**

Strong oxidizing agents are incompatible with this product.

### **Hazardous decomposition products**

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

## 11. Toxicological Information

### **Acute toxicity**

LD50 Oral : Mouse - 1834 mg/kg LD50 Dermal : No toxicity data available.

LC50 Inhalation : No toxicity data available.

### **Skin corrosion/irritation**

No skin/corrosion irritation data available.

### **Serious eye damage/eye irritation**

No eye damage/irritation data available.

### **Respiratory or skin sensitization**

No sensitization data available.

### **Germ cell mutagenicity**

In vitro tests have shown that this product causes unscheduled DNA synthesis and other mutagenic effects.

### **Carcinogenicity**

IARC : Product and components are not regulated by the IARC.

ACGIH : Product and components are not regulated by the ACGIH.

NTP : Product and components are not regulated by the NTP.

OSHA : Product and components are not regulated by OSHA.

### **Reproductive toxicity**

No reproductive toxicity data available.

### **Specific target organ toxicity – single exposure**

No specific organ toxicity data available.

**Specific target organ toxicity – repeated exposure**

No specific organ toxicity data available.

**Aspiration hazard**

No aspiration hazard data available.

**Additional Information**

RTECS: DV8750000.

**12. Ecological Information**

**Toxicity**

No ecological toxicity data available.

**Aquatic toxicity**

No aquatic toxicity data available.

**Persistence and degradability**

No persistence/degradability data available.

**Bioaccumulative potential**

No bioaccumulation data available.

**Mobility in soil**

No soil mobility data available.

**Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment is not required/was not conducted.

**Other adverse effect**

No other adverse effect data available.

**13. Disposal Considerations**

**Product**

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

**Packaging**

Packaging should be disposed of in the same manner as unused product.

**Recommendation**

Disposal must be made according to official regulations.

**14. Transport Information**

**DOT (US)**

Not a dangerous good under DOT(US) regulations.

**IMDG**

Not a dangerous good under IMDG regulations.

**IATA**

Not a dangerous good under IATA regulations.

**15. Regulatory Information**

**SARA**

SARA 302: This product and components are not subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This product does not contain any components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

SARA 311/312: Acute Health Hazard, Chronic Health Hazard 15.2 Clean water act (CWA) No chemicals are present in this product that are subject to regulation under the Clean Water Act.

**Right to know components**

Massachusetts : No chemicals are present which require disclosure under the Massachusetts Right to Know Act.

Pennsylvania : Biphenyl-3,3',4,4'-tetrayltetraamine CAS No.: 91-95-2

New Jersey : Biphenyl-3,3',4,4'-tetrayltetraamine CAS No.: 91-95-2

California proposition 65 components : This product contains no chemicals which are known to the State of California to cause cancer, or birth defects or other reproductive harm.

**16. Other Information**

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Abbreviations and acronyms:

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**IATA:** International Air Transport Association

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**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-4004D-7 Stable DAB buffer MSDS

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

**Product Name** Stable DAB buffer  
**Catalog#** VB-4004D-6  
**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

**Appearance:** clear, colorless liquid

**Caution!** May cause eye, skin, and respiratory tract irritation. This is expected to be a low hazard for usual handling.

**Target Organs:** none

#### **Potential Health Effects**

**Eye:** May cause eye irritation.

**Skin:** May cause skin irritation.

**Ingestion:** May cause respiratory of the digestive. Low hazard for usual industrial handling.

**Chronic:** No information found.

### 3. Composition/information on ingredients

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

#### **Composition:**

Component	CAS#
Sodium pyrophosphate	13472-36-1
Tris, Hydrochloride	1185-53-1
H <sub>2</sub> O <sub>2</sub>	7722-84-1

### 4. First Aid Measures

#### Description of first aid measures

**Inhalation** Move affected person to fresh air at once. Keep affected person warm and at rest. Get medical attention immediately.

**Ingestion** Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water. Get medical aid if irritation or symptoms occur.

**Skin contact** Rinse immediately with plenty of water. Remove contaminated clothing. Get medical attention promptly if symptoms occur after washing.

**Eye contact** Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

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

**Notes for the doctor** Treat symptomatically and supportively.

### 5. Firefighting Measures

#### General Information

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Non-combustible, substance itself does not burn but may decompose upon heating to produce irritating, corrosive and/or toxic fumes.

#### Extinguishing Media

Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

**Flash Point:** Not applicable.  
**Autoignition Temperature:** Not applicable.  
**Explosion Limits, Lower:** Not available.  
**Upper:** Not available.  
**NFPA Rating:** (estimated) Health: 1; Flammability: 0; Instability: 0

## 6. Accidental Release Measures

### General Information

Use proper personal protective equipment as indicated in Section 8.

### Spills/Leaks

Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Provide ventilation.

## 7. Handling and Storage

### Handling

Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation.

### Storage

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. No special precautions indicated.

## 8. Exposure Controls/Personal Protection

### Engineering Controls

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium pyrophosphate	none listed	none listed	none listed
Tris, Hydrochloride	none listed	none listed	none listed
H <sub>2</sub> O <sub>2</sub>	none listed	none listed	none listed

### Personal Protective Equipment

**Eyes:** 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.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to minimize contact with skin.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

**Physical State:** Liquid

**Appearance:** clear, colorless

**Odor:** weak odor

**pH:** 7.5

**Vapor Pressure:** Not available.

**Vapor Density:** >1.0

**Evaporation Rate:** Not available.

**Viscosity:** Not available.  
**Boiling Point:** > 100 deg C  
**Freezing/Melting Point:** > 0 deg C  
**Decomposition Temperature:** Not available.  
**Solubility:** Soluble.  
**Specific Gravity/Density:** Not available.  
**Molecular Formula:** Solution  
**Molecular Weight:** Not available.

## 10 Stability and Reactivity

**Chemical Stability:** Stable.  
**Conditions to Avoid:** Incompatible materials, excess heat.  
**Incompatibilities with Other Materials:** Strong acids, strong bases.  
**Hazardous Decomposition Products:** Carbon monoxide, carbon monoxide, carbon dioxide.  
**Hazardous Polymerization:** Has not been reported

## 11. Toxicological Information

### Information on toxicological effects

Toxicological effects	No information available.
Skin corrosion/irritation	
Extreme pH	
Serious eye damage/irritation	Not determined.
Germ cell mutagenicity	
Genotoxicity - in vitro	Not determined.
Genotoxicity - in vivo	Not determined.
Carcinogenicity	Not determined.
Reproductive toxicity - fertility	Not determined.
Specific target organ toxicity - single exposure	
STOT - single exposure	Not determined.
Specific target organ toxicity - repeated exposure	
STOT - repeated exposure	Not determined.
Aspiration hazard	Not determined.
General information	No specific health hazards known.
Epidemiology:	No information found

## 12. Ecological Information

### Toxicity

Acute toxicity - fish Not determined.

### Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

### Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

### Mobility in soil

Mobility The product is soluble in water.

### Results of PBT and vPvB assessment

Results of PBT and vPvB assessment No information available

### Other adverse effects

Other adverse effects Not determined.

### 13. Disposal Considerations

#### Waste treatment methods

**General information** When handling waste, the safety precautions applying to handling of the product should be considered.  
**Disposal methods** Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

### 14. Transport Information

**General** The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).  
**Road transport notes** Not classified.  
**Rail transport notes** Not classified.  
**Sea transport notes** Not classified.  
**Air transport notes** Not classified.

**UN number** Not applicable.

**UN proper shipping name** Not applicable.

**Transport hazard class(es)** Not applicable.

**Packing group** Not applicable.

#### Environmental hazards

Environmentally hazardous substance/marine pollutant No.

**Special precautions for user** Not applicable.

#### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

### 15. Regulatory Information

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

**EU legislation** 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) (as amended).

**Guidance** Workplace Exposure Limits EH40. Approved Classification and Labelling Guide (Sixth edition) L131. Safety Data Sheets for Substances and Preparations.

**Chemical safety assessment** No chemical safety assessment has been carried out.

### 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-4004D-9 LC3B positive control FFPE slides MSDS

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

<b>Product Name</b>	LC3B positive control FFPE slides
<b>Catalog#</b>	VB-4004D-7
<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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