



## Material Safety Data Sheet

Revision Date: 06-6-2026

**Kit Name:** Tartrate-Resistant Acid Phosphatase (TRAP) Stain Kit for Osteoclast Detection (50-100 Slides)

**SKU#:** VB-3047

**Components:**

VB-3047-1	New Fuchsin Solution
VB-3047-2	Sodium Nitrite Solution
VB-3047-3	Naphthol AS-BI Solution
VB-3047-4	TRAP Buffer
VB-3047-5	Mayer's Hematoxylin Solution

## VB-3047-1 New Fuchsin Solution MSDS

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

<b>Product Name</b>	New Fuchsin Solution
<b>Catalog#</b>	VB-3047-1
<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

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 18
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Causes skin irritation  
Causes serious eye irritation  
May cause respiratory irritation  
May cause cancer

##### **Precautionary Statements**

###### **Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wash face, hands and any exposed skin thoroughly after handling  
Wear eye/face protection  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear protective gloves/protective clothing/eye protection/face protection

###### **Response**

IF exposed or concerned: Get medical attention/advice

###### **Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

###### **Skin**

IF ON SKIN: Wash with plenty of soap and water  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing

###### **Eyes**

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

###### **Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

###### **Disposal**

Dispose of contents/container to an approved waste disposal plant

###### **Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life with long lasting effects

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

**3. Composition/information on ingredients**

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

**Composition:**

Component	CAS#
New Fuchsin	3248-91-7

**4. First Aid Measures**

<b>General Advice</b>	If symptoms persist, call a physician.
<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. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Most important symptoms and effects</b>	None reasonably foreseeable.
<b>Notes to Physician.</b>	Treat symptomatically

**5. Firefighting Measures**

<b>Suitable Extinguishing Media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Alcohol resistant foam
<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**

Do not allow run-off from fire-fighting to enter drains or water courses

**Hazardous Combustion Products**

Nitrogen oxides (NO<sub>x</sub>). Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride gas.

**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
2	1	0	-

<b>6. Accidental Release Measures</b>
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<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment as required.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.
<b>Methods for Containment and Clean Up</b>	Sweep up and shovel into suitable containers for disposal.

<b>7. Handling and Storage</b>
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<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 in a dry, cool and well-ventilated place. Keep container tightly closed. Incompatible Materials. Oxidizing agent.

<b>8. Exposure Controls/Personal Protection</b>
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<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>	Ensure adequate ventilation, especially in confined areas. Ventilation systems. Ensure that eyewash stations and safety showers are close to the workstation location
<b><u>Personal Protective Equipment</u></b>	
<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>	Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice.

<b>9. Physical and Chemical Properties</b>
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<b>Physical State</b>	Solid
<b>Appearance</b>	Dark green
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<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
<b>Molecular Formula</b>	C22H23N3.HCl
<b>Molecular Weight</b>	365.89

#### 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>	Nitrogen oxides (NOx), Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO2), Hydrogen chloride gas
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

#### 11. Toxicological Information

##### Information on expected route of exposure

<b>Inhalation</b>	Not an expected route of exposure.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Eyes</b>	Avoid contact with eyes. Irritating to eyes.
<b>Skin</b>	Avoid contact with skin. May cause irritation.

##### Toxicology data for the components

<b>Toxicologically Synergistic Products</b>	No information available
<b>(b) skin corrosion/irritation;</b>	Category 2
<b>(c) serious eye damage/irritation;</b>	Category 2
<b>(d) respiratory or skin sensitization;</b>	
<b>Respiratory</b>	No data available
<b>Skin</b>	No data available
<b>(e) germ cell mutagenicity;</b>	No data available
<b>(f) carcinogenicity;</b>	Category 1B

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
New Fuchsin	3248-91-7	Group 2B	Not listed	Not listed	X	Not listed

##### **IARC (International Agency for Research on Cancer)**

IARC IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans (g) reproductive toxicity; No data available

<b>(g) reproductive toxicity;</b>	No data available
<b>(h) STOP-single exposure;</b>	Category 3

<b>Results/ Target organs</b>	Respiratory system
<b>(i) STOP-repeated exposure;</b>	No information available
<b>Target organs</b>	No information available
<b>(j) 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

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

<b>Persistence and Degradability</b>	No information available
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	No information available.

## 13. Disposal Considerations

<b>Waste Disposal Methods</b>	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.
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## 14. Transport Information

### DOT

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

### TDG

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

### IATA

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

### IMDG/IMO

UN-No	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

## 15. Regulatory Information

### United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
New Fuchsin	3248-91-7	X	ACTIVE	-

### **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
New Fuchsin	3248-91-7	X	-	221-831-7	X	X	X	X	KE-01468

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

SARA 311/312 Hazard Categories Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**      Not applicable

**Clean Air Act**      Not applicable

**OSHA** - Occupational Safety and Health Administration Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**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

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) Annex XIV - Substances Subject to Authorization	(1907/2006) Annex XVII - Restrictions on Certain Dangerous Substances	REACH REACH Regulation (EC 1907/2006) article 59 Candidate List of Substances of Very High Concern (SVHC)
New Fuchsin	3248-91-7	-	Use restricted. See entry 75. (see link for restriction details)	-

**REACH links**

<https://echa.europa.eu/substances-restricted-under-reach>

**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-3047-2 Sodium Nitrite Solution MSDS

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

<b>Product Name</b>	Sodium Nitrite Solution
<b>Catalog#</b>	VB-3047-2
<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

#### Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Oxidizing solids	Category 3
Acute oral toxicity	Category 3
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Kidney, Liver, Blood, Cardiovascular system.	

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

May intensify fire; oxidizer  
Toxic if swallowed  
Causes serious eye irritation  
May cause damage to organs through prolonged or repeated exposure

##### **Precautionary Statements**

##### **Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear eye/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep away from clothing and other combustible materials  
Take any precaution to avoid mixing with combustibles  
Wear protective gloves/protective clothing/eye protection/face protection

##### **Response**

IF exposed or concerned: Get medical attention/advice

##### **Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing

If eye irritation persists: Get medical advice/attention

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor

Rinse mouth

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish

Storage

Store locked up Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

<b>3. Composition/information on ingredients</b>
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Component	CAS No
Sodium nitrite	7632-00-0

<b>4. First Aid Measures</b>
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**Description of first aid measures**

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

**Eye contact** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion** Do NOT induce vomiting. Call a physician or poison control center immediately. conditions of normal use. If you feel unwell, seek medical advice.

**Inhalation** Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

**Notes to Physician** Treat symptomatically.

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

Not Applicable

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

None.

<b>5. Firefighting Measures</b>
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<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>	510 °C / 950 °F
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Oxidizing Properties</b>	Oxidizer
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

**Specific Hazards Arising from the Chemical**

Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire-fighting to enter drains or water courses.

**Hazardous Combustion Products**

Nitrogen oxides (NOx). 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. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

Health	Flammability	Instability	Physical hazards
3	0	2	OX

**6. Accidental Release Measures**

<b>Personal Precautions</b>	Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained
<b>Methods for Containment and Clean Up</b>	Keep combustibles (wood, paper, oil, etc) away from spilled material. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Keep in suitable, closed containers for disposal.

**7. Handling and Storage**

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials. Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Store under an inert atmosphere. Incompatible Materials. Acids. Amines. Reducing Agent. Combustible material. Strong reducing agents. Oxidizing agent.

**8. Exposure Controls/Personal Protection**

<b>Exposure Guidelines</b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Personal Protective Equipment</b>	
<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>	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.
<b>Recommended Filter type:</b>	Particulates filter conforming to EN 143.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety Practice

**9. Physical and Chemical Properties**

<b>Physical State</b>	Solid
<b>Appearance</b>	Light yellow
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH</b>	8-9
<b>Melting Point/Range</b>	271 °C / 519.8 °F
<b>Boiling Point/Range</b>	320 °C / 608 °F
<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>	510 °C / 950 °F
<b>Decomposition Temperature</b>	> 320 °C
<b>Viscosity</b>	No information available
<b>Molecular Formula</b>	N Na O2
<b>Molecular Weight</b>	69
<b>Oxidizing Properties</b>	Oxidizer

#### 10 Stability and Reactivity

<b>Reactivity</b>	Yes
<b>Chemical stability</b>	Oxidizer: Contact with combustible/organic material may cause fire.
<b>Possibility of hazardous reactions</b>	Hazardous reaction has not been reported.
<b>Conditions to avoid</b>	Incompatible products. Excess heat. Combustible material. Avoid dust formation. Exposure to moist air or water.
<b>Incompatible materials</b>	Acids, Amines, Reducing Agent, Combustible material, Strong reducing agents, Oxidizing agent
<b>Hazardous decomposition products</b>	Nitrogen oxides (NOx), Sodium oxides
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

#### 11. Toxicological Information

##### Information on expected route of exposure

<b>Inhalation</b>	May cause irritation of respiratory tract. May be harmful if inhaled.
<b>Ingestion</b>	Toxic if swallowed. May cause central nervous system effects. May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). May cause methemoglobinemia. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
<b>Eyes</b>	May cause irritation.
<b>Skin</b>	May cause irritation. May be harmful in contact with skin.

##### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium nitrite	LD50 = 85 mg/kg ( Rat )		LC50 = 5.5 mg/L ( Rat ) 4 h

<b>Toxicologically Synergistic Products</b>	No information available
<b>(b) skin corrosion/irritation;</b>	Based on available data, the classification criteria are not met

- (c) serious eye damage/irritation; Category 2  
 (d) respiratory or skin sensitization;  
     Respiratory Based on available data, the classification criteria are not met  
     Skin Based on available data, the classification criteria are not met  
 (e) germ cell mutagenicity; Based on available data, the classification criteria are not met  
 (f) carcinogenicity; Based on available data, the classification criteria are not met

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Sodium Nitrite	7632-00-0	Not listed	Not listed	Not listed	Not listed	Not listed

**IARC (International Agency for Research on Cancer)**

IARC IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans (g) reproductive toxicity; No data available

- (g) reproductive toxicity; No data available  
 (h) STOP-single exposure; No data available  
 Results/ Target organs Respiratory system  
 (i) STOP-repeated exposure; No information available  
 Target organs No information available  
 (j) 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  
 Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

**12. Ecological Information**

**Ecotoxicity**

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium nitrite	-	Oncorhynchus mykiss: LC50 = 0.09-0.13 mg/L 96h	-	12.5-100 mg/L 48h

- Persistence and Degradability** Soluble in 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.

<b>Component</b>	<b>log Pow</b>
Sodium nitrite	-3.7

**13. Disposal Considerations**

**Waste treatment 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**

UN-No	UN1500
Proper Shipping Name	Sodium Nitrite

Hazard Class	5.1
Subsidiary Hazard Class	6.1
Packing Group	III
<b><u>TDG</u></b>	
UN-No	UN1500
Proper Shipping Name	Sodium Nitrite
Hazard Class	5.1
Subsidiary Hazard Class	6.1
Packing Group	III
<b><u>IATA</u></b>	
UN-No	UN1500
Proper Shipping Name	Sodium Nitrite
Hazard Class	5.1
Subsidiary Hazard Class	6.1
Packing Group	III
<b><u>IMDG/IMO</u></b>	
UN-No	UN1500
Proper Shipping Name	Sodium Nitrite
Hazard Class	5.1
Subsidiary Hazard Class	6.1
Packing Group	III

## 15. Regulatory Information

### United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Sodium Nitrite	7632-00-0	X	ACTIVE	S

#### **Legend:**

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

X - Listed

'-' - Not Listed

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule.

#### **TSCA 12(b) - Notices of Export**

Component	CAS-No	TSCA 12(b) - Notices of Export
Sodium Nitrite	7632-00-0	Section 5(a)(2) Section 5

#### **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
Sodium Nitrite	7632-00-0	X	-	231-555-9	X	X	X	X	KE-31546

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

### **U.S. Federal Regulations**

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Sodium Nitrite	X	100 lb	-	-

**Clean Air Act** Not applicable**OSHA** - Occupational Safety and Health Administration Not applicable**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

**California Proposition 65** This product does not contain any Proposition 65 chemicals**U.S. Department of Transportation**

Reportable Quantity (RQ): Y

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**Authorisation/Restrictions according to EU REACH**

Component	CAS No	REACH (1907/2006) Annex XIV - Substances Subject to Authorization	(1907/2006) Annex XVII - Restrictions on Certain Dangerous Substances	REACH REACH Regulation (EC 1907/2006) article 59 Candidate List of Substances of Very High Concern (SVHC)
Sodium Nitrite	7632-00-0	-	Use restricted. See entry 75. (see link for restriction details)	-

**REACH links**<https://echa.europa.eu/substances-restricted-under-reach>**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Sodium nitrite	7632-00-0	Listed	Not applicable	Not applicable	Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

Component	CAS No	Seveso III Directive (2012/18/EC) Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Sodium nitrite	7632-00-0	Not applicable	Not applicable	Not applicable	Not applicable

**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-3047-3 Naphthol AS-BI Solution MSDS**

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

<b>Product Name</b>	Naphthol AS-BI Solution
<b>Catalog#</b>	VB-3047-3
<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**

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

<b>Skin Corrosion/Irritation</b>	Category 2
<b>Serious Eye Damage/Eye Irritation</b>	Category 2
<b>Specific target organ toxicity (single exposure)</b>	Category 3
<b>Target Organs - Respiratory system.</b>	

##### **Label Elements**

###### **Signal Word**

Danger

###### **Hazard Statements**

Causes skin irritation

Causes serious eye irritation

May cause respiratory irritation

###### **Precautionary Statements**

**Prevention**

Prevention Wash face, hands and any exposed skin thoroughly after handling  
 Wear protective gloves/protective clothing/eye protection/face protection  
 Avoid breathing dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Skin**

IF ON SKIN: Wash with plenty of soap and water If skin irritation occurs: Get medical advice/attention Take off contaminated clothing

**Eyes**

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

If eye irritation persists: Get medical advice/attention

**Storage**

Store in a well-ventilated place. Keep container tightly closed Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200**

No information available

<b>3. Composition/information on ingredients</b>
--

Component	CAS No
naphthol AS-BI phosphate disodium salt	207569-04-8

<b>4. First Aid Measures</b>
------------------------------

<b>General Advice</b>	If symptoms persist, call a physician
<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. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Most important symptoms and effects</b>	None reasonably foreseeable.
<b>Notes to Physician</b>	Treat symptomatically

<b>5. Firefighting Measures</b>
---------------------------------

**Extinguishing media**

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

**Unsuitable extinguishing media**

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

<b>Flash Point</b>	No information available
<b>Lower</b>	No information available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

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

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

**Hazardous Combustion Products**

Thermal decomposition can lead to release of irritating gases and vapors.

### 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
2	1	0	N/A

## 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

### Environmental precautions

Should not be released into the environment.

### Methods and materials for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

## 7. Handling and Storage

### Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation

### Conditions for safe storage, including any incompatibilities

#### Storage conditions

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. To maintain product quality: Keep refrigerated. Incompatible Materials. Oxidizing agent.

## 8. Exposure Controls/Personal Protection

### Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

### Engineering Measures

Ventilation systems. Ensure that eyewash stations and safety showers are close to the workstation location

### Personal Protective Equipment

#### Eye/face Protection

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 and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

#### Respiratory Protection

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.

#### Recommended Filter type:

Particulates filter conforming to EN 143.

#### 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:** Powder Solid

**Appearance:** light yellow

**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:** C<sub>18</sub>H<sub>13</sub>BrNNa<sub>2</sub>O<sub>6</sub>P.xH<sub>2</sub>O  
**Molecular Weight:** 496.16

### 10 Stability and Reactivity

<b>Reactivity</b>	No data available
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No data available
<b>Conditions to avoid</b>	Incompatible products.
<b>Incompatible materials</b>	Oxidizing agent
<b>Hazardous decomposition products</b>	Thermal decomposition can lead to release of irritating gases and Vapors
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

### 11. Toxicological Information

#### Information on expected route of exposure

<b>Inhalation</b>	Avoid breathing dust or spray mist. May be harmful if inhaled.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Eyes</b>	May cause irritation.
<b>Skin</b>	May cause irritation. May be harmful in contact with skin.

#### Toxicology data for the components

<b>Toxicologically Synergistic Products</b>	No information available
<b>(b) skin corrosion/irritation;</b>	Category 2
<b>(c) serious eye damage/irritation;</b>	Category 2
<b>(d) respiratory or skin sensitization;</b>	
<b>Respiratory</b>	No information available
<b>Skin</b>	No information available
<b>(e) germ cell mutagenicity;</b>	No information available
<b>(f) carcinogenicity;</b>	No information available

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
naphthol AS-BI phosphate disodium salt	207569-04-8	Not listed	Not listed	Not listed	Not listed	Not listed

<b>(g) reproductive toxicity;</b>	No data available
<b>(h) STOP-single exposure;</b>	Category 3
<b>Results/ Target organs</b>	Respiratory system
<b>(i) STOP-repeated exposure;</b>	No information available
<b>Target organs</b>	No information available
<b>(j) Aspiration hazard;</b>	No information available
<b>Symptoms / effects,both acute and delayed</b>	No information available

**Endocrine Disruptor Information** No information available  
**Other Adverse Effects** The toxicological properties have not been fully investigated  
**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

**12. Ecological Information**

**Ecotoxicity**  
 Do not empty into drains.

**Persistence and Degradability** No information available  
**Bioaccumulation/ Accumulation** No information available.  
**Mobility** No information available.

**13. Disposal Considerations**

**Waste treatment methods**

**Product**  
 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
naphthol AS-BI phosphate disodium salt	207569-04-8	X	ACTIVE	-

**Legend:**  
**TSCA** - Toxic Substances Control Act, (40 CFR Part 710)  
 X - Listed  
 '-' - Not Listed

TSCA- Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

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
naphthol AS-BI phosphate disodium salt	207569-04-8	-	X	217-645-0	-	-	-	-	-

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations**

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA - Occupational Safety and Health Administration** Not applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**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

**Authorisation/Restrictions according to EU REACH** Not applicable

Component	CAS No	REACH (1907/2006) Annex XIV - Substances Subject to Authorization	(1907/2006) Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 Candidate List of Substances of Very High Concern (SVHC)
naphthol AS-BI phosphate disodium salt	207569-04-8	-	-	-

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
naphthol AS-BI phosphate disodium salt	207569-04-8	Not applicable	Not applicable	Not applicable	Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

Component	CAS No	Seveso III Directive (2012/18/EC) Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
naphthol AS-BI phosphate disodium salt	207569-04-8	Not applicable	Not applicable	Not applicable	Not applicable

## 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-3047-4 TRAP Buffer MSDS

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

<b>Product Name</b>	TRAP Buffer
<b>Catalog#</b>	VB-3047-4
<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

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

Not a hazardous substance or mixture.

**Other hazards**

None known.

**GHS label elements**

Not a hazardous substance or mixture.

**3. Composition/information on ingredients**

**Substance / Mixture :** Substance  
**Components** No hazardous ingredients

**4. 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  
**Protection of first-aiders :** For personal protection see section 8.  
**Notes to physician :** No data available

**5. Firefighting Measures**

**Suitable extinguishing media :** Water Foam Carbon dioxide (CO2) Dry powder  
**Unsuitable extinguishing media :** For this substance/mixture no limitations of extinguishing agents are given.  
**Specific hazards during fire fighting :** Combustible. Development of hazardous combustion gases or vapours possible in the event of fire.  
**Hazardous combustion products** Carbon oxides Sodium oxides  
**Specific extinguishing methods** No data available  
**Further information** Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.  
**Special protective equipment for fire fighters :** In the event of fire, wear self-contained breathing apparatus.

**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\_** Do not let product enter drains.  
**Methods and material for containment and cleaning up**  
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

**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.

<b>Eye/face protection</b>	If splashes are likely to occur, wear: Tightly fitting safety goggles
<b>Skin and body protection</b>	Wear protective gloves/clothing.
<b>Respiratory protection</b>	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.
<b>Hygiene measures</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

**Physical State:** Solid

**Odor:** Not available.

**pH:** 7.0-9 (68 ° / 20 ° C) concentration: 50g/l

**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.

**Water Solubility:** Not available.

**Density:** 1.820 g/cm<sup>3</sup> (68 °F / 20 °C)

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

**Molecular Weight:** 230.08 g/mol

**Particle characteristics Particle size :** No data available

## 10 Stability and Reactivity

<b>Reactivity :</b>	The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
<b>Chemical stability :</b>	The product is chemically stable under standard ambient conditions (room temperature) .
<b>Possibility of hazardous reactions :</b>	no information available Conditions to avoid : no information available
<b>Incompatible materials :</b>	No data available
<b>Hazardous decomposition products :</b>	In the event of fire: see section 5

## 11. Toxicological Information

### Information on toxicological effects

#### **Acute toxicity**

Acute toxicity estimate Oral - 2,500 mg/kg (Calculation method)

LD50 Oral - Rat - male - > 3,100 mg/kg

Remarks: (in analogy to similar products)

Symptoms: In high doses:, Diarrhea

Inhalation: No data available  
Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit  
Result: No skin irritation - 4 h  
(Regulation (EC) No. 440/2008, Annex, B.4)  
Remarks: (in analogy to similar products)

**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: No eye irritation - 1 h  
(Regulation (EC) No. 440/2008, Annex, B.5)  
Remarks: (in analogy to similar products)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse  
Result: negative  
(OECD Test Guideline 429)  
Remarks: (in analogy to similar products)

**Germ cell mutagenicity**

Test Type: Ames test  
Test system: Escherichia coli/Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: (in analogy to similar products)

**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**

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

**12. Ecological Information**

**Toxicity**

**Ecology-general** No information available.

**Persistence and degradability** No information available.

**Bioaccumulation** No information available.

**Mobility**

No information available

**Other adverse effects**

No information available

**13. Disposal Considerations****Disposal Methods**

Waste from residues: Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

**14. Transport Information****International Regulations****IATA-DGR**

Not regulated as a dangerous good

**IMDG-Code**

Not regulated as a dangerous good

**Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

**National regulation****49 CFR Road**

Not regulated as a dangerous good

Poison Inhalation Hazard : No

**Special precautions for user**

Remarks Not classified as dangerous in the meaning of transport regulations.

**15. Regulatory Information****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

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

**SARA 311/312 Hazards**

No SARA Hazards

**SARA 313**

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.

**US State Regulations :****Massachusetts Right To Know**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know**

Disodium tartrate dihydrate

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**New Jersey Right To Know**

Disodium tartrate dihydrate

**The ingredients of this product are reported in the following inventories:**

TSCA: All substances listed as active on the TSCA inventory

**TSCA list :**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

**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-3047-5 Mayer's Hematoxylin Solution MSDS**

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

<b>Product Name</b>	Mayer's Hematoxylin Solution
<b>Catalog#</b>	VB-3047-5
<b>Product Description</b>	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. Composition/information on ingredients

**Chemical Description:** An aqueous solution of ferric chloride and hydrochloric acid.

Name	CAS #.
Hematoxylin	517-28-2

## 3. Hazards Identification

### Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Serious Eye Damage/Eye Irritation Category 2

### Label Elements

#### Signal Word

Warning

### Hazard Statements

Causes serious eye irritation

### Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling Wear eye/face protection

#### Eyes

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

### Hazards not otherwise classified (HNOC)

None identified

### Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available

## 4. First Aid Measures

### General Advice

If symptoms persist, call a physician.

### 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. If skin irritation persists, call a physician.

### Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention 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. Fire Fighting Measures

### Suitable Extinguishing Media

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

<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>	Not applicable

<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**

Carbon monoxide (CO). Carbon dioxide (CO2).

**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**

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
2	1	1	N/A

**6. Accidental Release Measures**

<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.
<b>Environmental Precautions</b>	Should not be released into the environment.
<b>Methods for Containment and Clean Up</b>	Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

**7. Handling and Storage**

<b>Handling</b>	Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.
<b>Storage.</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from direct sunlight. Incompatible Materials. Strong oxidizing agents.

**8. Exposure Controls / Personal Protection**

<b>Exposure Guidelines</b>	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
<b>Personal Protective Equipment</b>	
<b>Eye/face Protection</b>	Tight sealing safety goggles.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	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.
<b>Recommended Filter type:</b>	Particulates filter conforming to EN 143.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety practice

## 9. Physical and Chemical Properties

<b>Physical State:</b>	Powder Soild
<b>Appearance:</b>	Beige
<b>Odor:</b>	Characteristic
<b>Odor Threshold</b>	N/A
<b>Melting Point/Range</b>	100 - 120 °C / 212 - 248 °F
<b>Softening Point</b>	No data available
<b>Boiling Point/Range</b>	No information available
<b>Flash Point</b>	No information available
<b>Flammability (liquid)</b>	Not applicable
<b>Flammability (solid,gas)</b>	No information available
<b>Explosion Limits</b>	No data available
<b>Autoignition Temperature</b>	Not applicable
<b>Decomposition Temperature</b>	267 °C
<b>pH</b>	No information available
<b>Viscosity</b>	Not applicable
<b>Water Solubility</b>	Soluble in water
<b>Solubility in other solvents</b>	No information available
<b>Partition Coefficient (n-octanol/water)</b>	
<b>Vapor Pressure</b>	negligible
<b>Density / Specific Gravity</b>	No data available
<b>Bulk Density</b>	No data available
<b>Vapor Density</b>	Not applicable
<b>Particle characteristics</b>	No data available
<b>Other Information</b>	
<b>Molecular Formula</b>	C16 H14 O6
<b>Molecular Weight</b>	302.27
<b>Evaporation Rate</b>	Not applicable

## 10. Stability and Reactivity Data

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions. Light sensitive.
<b>Conditions to Avoid</b>	Incompatible products. Excess heat. Avoid dust formation. Exposure to light.
<b>Incompatible Materials</b>	Strong oxidizing agents
<b>Hazardous Decomposition Products</b>	Carbon monoxide (CO), Carbon dioxide (CO2)
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological Information

### Information on expected route of exposure

<b>Inhalation</b>	Avoid breathing dust or spray mist. May be harmful if inhaled.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Eyes</b>	Avoid contact with eyes. Irritating to eyes.
<b>Skin</b>	Avoid contact with skin. May cause irritation.

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hematoxylin	LD50 > 2000 mg/kg (Rat)	-	-

**Toxicologically Synergistic Products** No information available

**(b) skin corrosion/irritation;** Based on available data, the classification criteria are not met

<b>Test method</b>	OECD Test Guideline 439
<b>Test species</b>	in vitro
<b>Observational endpoint</b>	No skin irritation

(c) **serious eye damage/irritation;** Category 2  
**Test method** OECD 405  
**Test species** rabbit  
**Observation end point** Irritating to eyes

(d) **respiratory or skin sensitization;**  
**Respiratory** No data available  
**Skin** Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Hematoxylin 517-28-2 (>80)	OECD Test Guideline 442D	in vitro	non-sensitising

(e) **germ cell mutagenicity;** Based on available data, the classification criteria are not met

Component	Test method	Test species	Study result
Hematoxylin 517-28-2 (>80)	OECD Test Guideline 471 Bacterial Reverse Mutation Test	Bacteria	negative

(f) **carcinogenicity;** The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Hematoxylin 517-28-2		Not listed	Not listed	Not listed	Not listed	Not listed

(g) **reproductive toxicity;** No data available

(h) **STOT-single exposure;** No data available

(i) **STOT-repeated exposure;** No data available  
**Target Organs** None known.

(j) **aspiration hazard;** Not applicable

**Symptoms / effects, both acute and delayed** No information available.

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological Information

### Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hematoxylin	EC50 > 100 mg/L (7d) Lemna minor	LC50 > 35 mg/L (96h) Oncorhynchus mykiss	Not listed	Component EC50 = 29.7 mg/L (48h) Daphnia magna

**Persistence and Degradability** based on information available. May persist

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Hematoxylin	0.3

## 13. Disposal Considerations

### Waste Disposal Method:

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

<b>DOT</b>	Not regulated
<b>TDG</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG/IMO</b>	Not regulated

#### 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**

Acute Health Hazard

##### **Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

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