



MATERIAL SAFETY DATA SHEET (MSDS)

Kit Name: VitroView™ Periodic Acid Silver Methenamin (PASM) Stain Kit

SKU #: VB-3033

Revision Date: 01-16-2024

Components:

VB-3033 -1	Periodic acid 1%
VB-3033-2	Silver Nitrate 5%
VB-3033-3	Methenamine 3%
VB-3033 -4	Sodium tetraborate 2%
VB-3033 -5	Gold chloride 0.25%
VB-3033 -6	Sodium thiosulfate 5%
VB-3033 -7	Mayer's Hemotoxylin Solution
VB-3033 -8	Eosin Solution

VB-3033-1 Periodic acid 1% MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Periodic acid 1%
Product number VB-3033-1
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition:

Component	CAS#	Weight (%)
Periodic Acid	10450-60-9	1-2
Water	7732-18-5	

3. Hazards Identification

Caution: May cause skin, eye, and respiratory tract irritation. The toxicological properties have not been fully investigated.

Potential Health Effects: The toxicology of this compound have not been completely examined. It is presumed that the toxicity of this item is similar to other weak oxidizers. Irritating to skin, eyes and mucous membranes. Ingestion will cause gastrointestinal distress.

Acute Effects

Principle Routes of Exposure:

Eyes: May cause irritation.

Skin: May cause irritation.

Inhalation: May be harmful and cause irritation of respiratory tract.

Ingestion: May be harmful and cause irritation. Chronic Effects None known.

4. First Aid Measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

Skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

Inhalation: move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Notes to Physician: Treat symptomatically.

5. Fire and Explosion Data

Unsuitable Extinguishing Media: N/A

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media: N/A

Specific Hazards: The decomposition can lead to release of irritating gases and vapors.

Precautions for Firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

Further information:

NFPA Health: 1 Flammability: 0 Instability: 0 Physical hazards: N/A

6. Accidental Release Measures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment.
Environmental precautions: Do not let product enter drains.
Methods for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers disposal.

7. Handling and Storage

Handling Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation.
Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure Controls / Personal Protection

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.

Exposure Guidelines

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

Exposure controls:

Handle in accordance with good industrial hygiene and safety practice.
 Wash hands before breaks and at the end of workday. Personal protective equipment

Eye/face protection:

Tightly fitting safety goggles. Faceshield (8-inch minimum).
 Use equipment for eye protection tested and approved under appropriate government standards.

Skin protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.
 Wash and dry hands.

Body Protection:

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance Form: White Light yellow liquid
Odor: Slight characteristic
Odor Threshold: N/A
pH: 1.8
Boiling Point/Range: 100°C / 212°F
Melting point/freezing point: 0°C / 32°F
Initial boiling point and boiling range: N/A
Flash point: N/A
Evaporation rate: N/A
Flammability (solid, gas): N/A
Vapour pressure: N/A
Vapour density: N/A
Relative density: N/A
Partition coefficient: noctanol/water: N/A
Decomposition temperature: N/A

10. Stability and Reactivity Data

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. May ignite or explode on contact with combustible materials.

Materials to Avoid

acids, anhydrides, aniline, bases, isocyanates, metals, oxidizing materials, phenols, reducing agents

Decomposition Products

Thermal decomposition or combustion products: oxides of carbon, oxides of nitrogen

Possibility of Hazardous Reactions

Will not polymerize

11. Toxicological Information

Acute toxicity	N/A	
Chronic Toxicity		
Germ cell mutagenicity	N/A	
Carcinogenicity	N/A	
IARC:	No component of this product presents at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.	
Reproductive toxicity	N/A	
Specific target organ toxicity - single exposure		N/A
Specific target organ toxicity - repeated exposure		N/A
Aspiration hazard	N/A	
Additional Information (RTECS)	N/A	

12. Ecological Information

Toxicity:	N/A
Persistence and degradability:	N/A
Bioaccumulative potential:	N/A
Mobility in soil:	N/A
Results of PBT and vPvB assessment:	N/A

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	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated

15. Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Safety and environmental regulations:	N/A
Chemical Safety Assessment	N/A

Full text of H-Statements referred to under sections 2 and 3.

H272	May intensify fire; oxidiser.
H314	Causes severe skin burns and eye damage.
Ox. Sol.	Oxidizing solids
Skin Corr.	Skin corrosion

Full text of R-phrases referred to under sections 2 and 3

C	Corrosive
R 8	Contact with combustible material may cause fire.
R34	Causes burns.
R35	Causes severe burns.
O	Oxidising

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-3033-2 Silver Nitrate 5% MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Silver Nitrate 5%
Product number VB-3033-2
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition:

Name	CAS #	Weight (%)
Silver Nitrate	7761-88-8	5-6

3. Hazards Identification

GHS- Classification

Skin corrosion/irritation Category1
Serious eye damage/eye irritation Category1
Chronic aquatic toxicity Category2
Ozone Not applicable

GHSLabel elements, including precautionary statements

Signal Word

Danger

Hazard statements

H314 - Causes severe skin burns and eye damageH318-

Causes serious eye damage

H411- Toxic to aquatic life with long lasting effects

Precautionary Statements-EU(§28,1272/2008)

P280 - Wear protective gloves/ eye protection/ face protectionP260-

Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin thoroughly after handlingP363-

Wash contaminated clothing before reuse

P301+ P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.

Rinse skin with water/shower

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for

breathingP310 Immediately call a POISON CENTER or doctor/ physician

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy todo. Continue rinsing

P273 - Avoid release to the environmentP391- Collect spillage

P405- Store locked up

P501- Dispose of contents/ container to an approved waste disposal plant

Other information

No information available

4. First Aid Measures

General advice

Immediate medical attention is required.

Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Immediate medical attention is required.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.
Inhalation	Move to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Immediate medical attention is required.
Ingestion	Rinse mouth. Do NOT induce vomiting. Immediate medical attention is required.
Notes to physician	Treat symptomatically.
Protection of first-aiders	Use personal protective equipment. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	Not flammable.
Flash point	not determined
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Protective equipment and precautions for firefighters	ear self contained breathing apparatus for firefighting if necessary.

6. Accidental Release Measures

Personal precautions	Use personal protective equipment. Avoid contact with the skin and the eyes. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Try to prevent the material from entering drains or water courses.
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. After cleaning, flush away traces with water. Prevent product from entering drains. Dam up.

7. Handling and Storage

Advice on safe handling
Wear personal protective equipment. Ensure adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist.

Technical measures/Storage conditions
Keep container tightly closed. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

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.

Chemical Name	ACGIHTLV	OSHAPEL	NIOSHIDLH
Silver Nitrate	TWA:0.01 mg/m ³ Ag	TWA: 0.01 mg/m ³	IDLH: 10 mg/m ³
7761-88-8		Ag(vacated)TWA: 0.01 mg/m ³ Ag	AgTWA:0.01mg/ m ³ Ag

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962(11th Cir., 1992).
Showers, Eye wash stations, Ventilation systems

- Engineering measures**
- Personal protective equipment**
- Eye/face protection**
- Skin and body protection**
- Respiratory protection**

Tightly fitting safety goggles. Face-shield.
Long sleeved clothing. Protective gloves
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

When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

9. Physical and Chemical Properties

Physical State	Solid
Appearance	White
Odor	Odorless
Odor Threshold	No information available
pH	5.4-6.4 10% aq solution
Melting Point/Range	212 °C / 413.6 °F
Boiling Point/Range	444 °C / 831.2 °F @ 760 mmHg
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No information available
Vapor Pressure	No data available
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	> 444°C
Viscosity	Not applicable
Molecular Formula	Ag N O3
Molecular Weight	169.87

10. Stability and Reactivity

Reactive	Yes
Hazard Stability	Oxidizer: Contact with combustible/organic material may cause fire. Light sensitive.
Conditions to Avoid	Avoid dust formation. Incompatible products. Excess heat. Combustible material. Exposure to light.
Incompatible Materials	Strong oxidizing agents, Strong reducing agents, Combustible material, Metals, Amines
Hazardous Decomposition Products	Nitrogen oxides (NOx)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological Information

- Product Information**
- Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation			
Silver nitrate	> 2000 mg/kg (Rat)	LD50 > 2000 mg/kg (Rat)	LC50 > 750 µg/m3 (Rat) 4 h			
Toxicologically Synergistic	No information available					
Products						
Delayed and immediate effects as well as chronic effects from short and long-term exposure						
Irritation	Causes burns by all exposure routes					
Sensitization	No information available					
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.					
Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Silver nitrate	7761-88-8	Not listed	Not listed		Not listed	Not listed
Mutagenic Effects	No information available					
Reproductive Effects	No information available.					
Developmental Effects	No information available.					
Teratogenicity	No information available.					
STOT - single exposure	Respiratory system					
STOT - repeated exposure	Liver Kidney					
Aspiration hazard	No information available					
Symptoms / effects, both acute and delayed	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation					
Endocrine Disruptor Information	No information available					
Other Adverse Effects	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.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Silver nitrate	Not listed	Leuciscus idus: : LC500.029 mg/L/96h	Photobacterium phosphoreum: EC50: 0.038 mg/L/24h Photobacterium phosphoreum: EC50: 0.395 mg/l/15min Photobacterium phosphoreum: EC50: 0.44 mg/L/30 min as Ag ⁺⁺ Photobacterium phosphoreum: EC50: 0.86 mg/L/15 min as Ag ⁺⁺	EC50: 0.0006 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. Component log Pow Silver nitrate 0.19			

13. Disposal Information

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
UN-No

UN1493

Proper Shipping Name SILVER NITRATE
Hazard Class 5.1
Subsidiary Hazard Class 8
Packing Group II

TDG

UN-No UN1493
Proper Shipping Name SILVER NITRATE
Hazard Class 5.1
Packing Group II

IATA

UN-No UN1493
Proper Shipping Name Silver nitrate
Hazard Class 5.1
Packing Group II

IMDG/IMO

UN-No UN1493
Proper Shipping Name Silver nitrate
Hazard Class 5.1
Packing Group II

15. Regulatory Information

United States of America Inventory

Component CAS TSCA TSCA Inventory notification Active-Inactive TSCA - EPA Regulatory Flags
Silver nitrate 7761-88-8 X ACTIVE -

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), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Silver nitrate	7761-88-8	X	-	231-853-9	X	X	X	X	X	KE-31281

U.S. Federal Regulations

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Silver nitrate	X	1lb	X	-

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Silver nitrate	1 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Silver nitrate	X	X	X	X	X

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.

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-3033-3 Methenamine 3% MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Methenamine 3%
Product number VB-3033-3
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
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 #.	Weight (%)
Methenamine	100-97-0	2-4

3. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable solids Category 2
Skin Sensitization Category 1
Combustible dust Yes

Label Elements

Signal Word

Warning

Hazard Statements

Flammable solid
May form combustible dust concentrations in air
May cause an allergic skin reaction

Precautionary Statements

Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Wear protective gloves/protective clothing/eye protection/face protection

Skin

IF ON SKIN: Wash with plenty of soap and water If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction
Storage 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)

None identified

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. May cause allergic skin reaction. 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
Notes to Physician	Treat symptomatically

5. Fire Fighting Measures

Suitable Extinguishing Media	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam.
Unsuitable Extinguishing Media	No information available
Flash Point	250 °C / 482 °F
Method	No information available
Autoignition Temperature	400 °C / 752 °F
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Containers may explode when heated. Dust can form an explosive mixture with air. Fine dust dispersed in air may ignite.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Ammonia. Formaldehyde.

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	2	1	N/A

6. Accidental Release Measures

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

7. Handling and Storage

Handling	Wear personal protective equipment/face protection. Avoid ingestion and inhalation. Avoid dust formation. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.
Storage.	Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents. Strong acids

8. Exposure Controls / Personal Protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Methenamine	TWA: 1 mg/m ³			

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment.

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

The absence of published exposure limits does not mean that a substance poses no inhalation hazard. If inhalation exposure is likely or if irritation or other symptoms are experienced, wear a NIOSH/MSHA or European Standard EN 149 approved respirator.

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
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Physical State	Solid
Appearance	White
Odor	Ammonia-like
Odor Threshold	No information available
pH	7 - 10 10% aq. solution
Melting Point/Range	No data available
Boiling Point/Range	No information available
Flash Point	250 °C / 482 °F
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	0.0035 hPa @ 20 °C
Vapor Density	Not applicable
Specific Gravity	1.330
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	400 °C / 752 °F
Decomposition Temperature	260 (sublimation) °C
Viscosity	Not applicable
Molecular Formula	C ₆ H ₁₂ N ₄
Molecular Weight	140.19

10. Stability and Reactivity Data
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Reactive Hazard	Yes
Stability	Stable under normal conditions. Moisture sensitive.
Conditions to Avoid	Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. Excess heat. Exposure to moisture.
Incompatible Materials	Strong oxidizing agents, Strong acids

Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂), Nitrogen oxides (NO _x), Ammonia, Formaldehyde
Hazardous Polymerization	No information available.
Hazardous Reactions	None under normal processing.

11. Toxicological Information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methenamine	9200 mg/kg (Rat)	>2000 mg/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

May cause sensitization by skin contact

Carcinogenicity

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

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Methenamine	100-97-0	Not listed	Not listed	Not listed	Not listed	Not listed

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 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

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
Methenamine	Not listed	Pimephales promelas: Not listed EC50=49.8 g/L/96h	Not listed	EC50 = 36 g/L/48h

Persistence and Degradability

Persistence is unlikely

Bioaccumulation/ Accumulation

No information available.

Mobility

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

Component

log Pow

Methenamine

-2.2

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

UN-No

UN1328

	Proper Shipping Name	HEXAMETHYLENETETRAMINE
	Hazard Class	4.1
	Packing Group	III
<u>TDG</u>	UN-No	UN1328
	Proper Shipping Name	Hexamethylenetetramine
	Hazard Class	4.1
	Packing Group	III
<u>IATA</u>	UN-No	UN1328
	Proper Shipping Name	HEXAMETHYLENETETRAMINE
	Hazard Class	4.1
	Packing Group	III
<u>IMDG/IMO</u>	UN-No	UN1328
	Proper Shipping Name	Hexamethylenetetramine
	Hazard Class	4.1
	Packing Group	III

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

Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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

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

Pennsylvania Right To Know Components

Hexamethylenetetramine

New Jersey Right To Know Components

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-3033-4 Sodium tetraborate 2% MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Sodium tetraborate 2%
Product number VB-3033-4
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Component	CAS NO.	Weight(%)
Sodium tetraborate	1330-43-4	>1<3

3. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Reproductive Toxicity Category 1B

Label Elements

Signal Word

Danger

Hazard Statements

May damage fertility. May damage the unborn child

Precautionary Statements

Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Response

IF exposed or concerned: Get medical attention/advice

Storage

Store locked up

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

4. First Aid Measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. 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.

Ingeson Do NOT induce vomiting. Call a physician or poison control center immediately.

Most important symptoms and effects None reasonably foreseeable.

Notes to Physician Treat symptomatically

5. Fire and Explosion Data

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

Unsuitable Extinguishing Media No information available

Flash Point No information available

Method No information available

Autoignition Temperature No information available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical None known.

Hazardous Combustion Products None known.

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
2	0	1	N/A

6. Accidental Release Measures

Personal Precautions Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

7. Handling and Storage

Handling Wear personal protective equipment/face protection. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe (dust, vapor, mist, gas). Do not ingest. If swallowed then seek immediate medical assistance.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Store under an inert atmosphere. Protect from moisture. Incompatible Materials. Strong reducing agents. Alkali metals

8. Exposure Controls / Personal Protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
Borates, tetra, sodium salts, anhydrous	TWA: 2 mg/m ³ STEL: 6 mg/m ³	(Vacated) TWA: 10 mg/m ³	TWA: 1 mg/m ³	TWA: 2 mg/m ³ STEL: 6 mg/m ³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures	Use only under a chemical fume hood. 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

Physical State	Solid
Appearance	White
Odor	Odorless
Odor Threshold	No information available
pH	9.3% aq. sol
Melting Point/Range	741 °C / 1365.8 °F
Boiling Point/Range	1575 °C / 2867 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	Not applicable
Vapor Pressure	No information available
Vapor Density	No data available
Specific Gravity	2.36
Solubility	Soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	B4 Na2 O7
Molecular Weight	201.22

10. Stability and Reactivity Data

Reactive Hazard	None known, based on information available
Stability	Hygroscopic.
Conditions to Avoid	Avoid dust formation. Excess heat. Exposure to moist air or water.
Incompatible Materials	Strong reducing agents, Alkali metals
Hazardous Decomposition Products	None known
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological Information

Acute Toxicity			
Product Information			
Component Information	LD50 Oral	LD50 Dermal	LC50 Inhalation
Component	LD50 = 2660 mg/kg (Rat)	LD50 > 2000 mg/kg (Rabbit)	LC50 > 2 mg/m3 (Rat) 4 h
Borates, tetra, sodium salts, anhydrous			

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

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Borates, tetra, sodium salts, anhydrous	1330-43-4	Not listed	Not listed	Not listed	Not listed	Not listed
Mutagenic Effects		Mutagenic effects have occurred in experimental animals.				
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		Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information.				

12. Ecological Information

Ecotoxicity .

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Borates, tetra, sodium salts, anhydrous	EC50: 2.6 - 21.8 mg/L, 96h static (Pseudokirchneriella subcapitata) EC50: = 158 mg/L, 96h (Desmodesmus subspicatus)	LC50: = 340 mg/L, (Limanda limanda)	Not listed	LC50: 1085 - 1402 mg/L, 48h (Daphnia magna)

Persistence and Degradability Persistence is unlikely
Bioaccumulation/ Accumulation No information available.
Mobility Will likely be mobile in the environment due to its water solubility.

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 (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

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.

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-3033-5 Gold chloride 0.25% MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Gold chloride 0.25%
Product number VB-3033-5
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Component	CAS NO.	Weight (%)
Gold chloride	1029-29-8	0.1-0.3

3. Hazards Identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals Category 1
Skin Corrosion/Irritation Category 1 B
Serious Eye Damage/Eye Irritation Category 1
Skin Sensitization Category 1
Combustible dust Yes

Label Elements

Signal Word

Danger

Hazard Statements

May form combustible dust concentrations in air
May be corrosive to metals
Causes severe skin burns and eye damage
May cause an allergic skin reaction

Precautionary Statements

Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Contaminated work clothing should not be allowed out of the workplace
Keep only in original container

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

IF ON SKIN: Wash with plenty of soap and water

Wash contaminated clothing before reuse

Immediately call a POISON CENTER or doctor/physician

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Spills

Absorb spillage to prevent material damage

Storage

Store locked up

Store in corrosive resistant polypropylene container with a resistant inliner

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)

None identified

4. First Aid Measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.
Inhalation	Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention
Ingestion	Clean mouth with water. Get medical attention.
Most important symptoms and effects	Causes burns by all exposure routes. May cause allergic skin reaction. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: 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
Notes to Physician	Treat symptomatically

5. Fire and Explosion Data

Suitable Extinguishing Media	Water spray. Carbon dioxide (CO 2). Dry chemical. Chemical foam.		
Unsuitable Extinguishing Media	No information available		
Flash Point	No information available		
Method	No information available		
Autoignition Temperature	No information available		
Explosion Limits			
Upper	No data available		
Lower	No data available		
Sensitivity to Mechanical Impact	No information available		
Sensitivity to Static Discharge	No information available		
Specific Hazards Arising from the Chemical			
Fine dust dispersed in air may ignite.			
Hazardous Combustion Products			
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
3	1	0	N/A

6. Accidental Release Measures

Personal Precautions	Environmental Precautions	Ensure adequate ventilation. Use personal protective equipment as required. See Section 12 for additional Ecological Information.
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Methods for Containment and Clean Up

Avoid dust formation. Sweep up and shovel into suitable containers for disposal. Do not let this chemical enter the environment.

7. Handling and Storage

Handling	Avoid contact with skin and eyes. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance.
Storage.	Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from light. Corrosives area. Incompatible Materials. Strong oxidizing agents. Reducing Agent. Finely powdered metals

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	Ensure adequate ventilation, especially in confined areas. 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.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice

9. Physical and Chemical Properties

Physical State	Powder Solid
Appearance	Yellow
Odor	No information available
Odor Threshold	No information available
pH	No information available
Melting Point/Range	289 °C / 552 °F
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Decomposes in contact with water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Au Cl
Molecular Weight	232.42

10. Stability and Reactivity Data

Reactive Hazard	None known, based on information available
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Stability	Stable under normal conditions
Conditions to Avoid	Incompatible products. Exposure to light.
Incompatible Materials	Strong oxidizing agents, Reducing Agent, Finely powdered metals
Hazardous Decomposition Products	Hydrogen chloride gas
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions	None under normal processing.

11. Toxicological Information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information	LD50 Oral	LD50 Dermal	LC50 Inhalation
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Toxicologically Synergistic Products No information available

Products

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

Irritation Causes burns by all exposure routes

Sensitization May cause sensitization by skin contact

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

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Gold chloride (AuCl)	1029-29-8	Not listed	Not listed	Not listed	Not listed	Not listed

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 Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: 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

Endocrine Disruptor Information No information available

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

12. Ecological Information

Ecotoxicity

Do not empty into drains.

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

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

	UN-No	UN3260
	Proper Shipping Name	Corrosive solid, acidic, inorganic, n.o.s.
	Hazard Class	8
	Packing Group	II
TDG	UN-No	UN3260
	Proper Shipping Name	Corrosive solid, acidic, inorganic, n.o.s.
	Hazard Class	8
	Packing Group	II
IATA	UN-No	UN3260
	Proper Shipping Name	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.*
	Hazard Class	8
	Packing Group	II
IMDG/IMO	UN-No Proper Shipping Name	UN3260 Corrosive solid, acidic, inorganic, n.o.s.
	Hazard Class	8
	Packing Group	II

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.

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-3033-6 Sodium thiosulfate 5% MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Sodium thiosulfate 5%
Product number VB-3033-6
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Component	CAS NO.	Weight (%)
Sodium thiosulfate	7772-98-7	0.1-0.3

3. Hazards Identification

Classification of the substance or mixture: The product is not classified according to the Globally Harmonized System (GHS).

Classification according to Directive 67/548/EEC or Directive 1999/45/EC:

Not applicable. Information concerning particular hazards for human and environment: The product does not need to be labelled due to the calculation procedure of international guidelines.

Classification system: The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Label elements

GHS label elements Void
Hazard pictograms Void
Signal word Void
Hazard statements Void

Classification system:

NFPA ratings (scale 0 - 4)

- Health = 1
- Fire = 0
- Reactivity = 0

HMIS-ratings (scale 0 - 4)

- Health = 1
- Fire = 0
- Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

4. First Aid Measures

Description of first aid measures

General information: No special measures required.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Generally the product does not irritate the skin.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: If symptoms persist consult doctor. Information for doctor: Most important symptoms and effects, both acute and delayed: No further relevant information available.

Indication of any immediate medical attention and special treatment needed:

No further relevant information available.

5. Fire and Explosion Data

General Information:

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

Extinguishing Media:

For small fires, use water spray, dry chemical, carbon dioxide or chemical foam. 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:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

7. Handling and Storage

Handling

Avoid prolonged or repeated contact with skin. Avoid ingestion and inhalation. Use with adequate ventilation.

Storage.

Store in a cool, dry place. Store in a tightly closed container.

8. Exposure Controls / Personal Protection

Engineering Controls:

Use adequate ventilation to keep airborne concentrations low.

OSHA Vacated PELs:

Water: No OSHA Vacated PELs are listed for this chemical. Sodium thiosulfate, pentahydrate: No OSHA Vacated PELs are listed for this chemical.

Personal Protection:

Eye Protection: Safety glasses or goggles.

Respiratory Protection: Normal room ventilation is adequate.

Skin Protection: Chemical resistant gloves.

9. Physical and Chemical Properties

Physical State	Powder Solid
Appearance	White
Odor	No information available
Odor Threshold	No information available
pH	6.0-8.5 5% aq. sol. 20°C
Melting Point/Range	>100 °C
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	negligible

Vapor Density	Not applicable
Specific Gravity	No information available
Solubility	Decomposes in contact with water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	Na ₂ O ₃ S ₂
Molecular Weight	158.1

10. Stability and Reactivity Data

Reactive Hazard	None known, based on information available
Stability	Hygroscopic.
Conditions to Avoid	Exposure to moist air or water. Incompatible products
Incompatible Materials	Strong oxidizing agents, Acids
Hazardous Decomposition Products	Sulfur oxides, Sodium oxides
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions	None under normal processing.

11. Toxicological Information

Acute Toxicity						
Product Information No acute toxicity information is available for this product						
Component Information	LD50 Oral	LD50 Dermal	LC50 Inhalation			
Sodium Thiosulfate	>8000 mg/kg (Rat)	not listed	not listed			
Toxicologically Synergistic Products						
Delayed and immediate effects as well as chronic effects from short and long-term exposure						
Irritation	No information available.					
Sensitization	No information available.					
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.					
Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Sodium Thiosulfate	7772-98-7	Not listed	Not listed	Not listed	Not listed	Not listed
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	
Do not empty into drains.	
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

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

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

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

16. Other Information

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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-3033-7 Mayer's Hemotoxylin Solution MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Mayer's Hemotoxylin Solution
Product number VB-3033-7
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition:

Name	CAS #
Hematoxylin	517-28-2
Ethyl alcohol	64-17-5
Water	7732-18-5

3. Hazards Identification

GHS CLASSIFICATION:

Flammable liquid Category 2; Acute toxicity, oral Category 5; Acute toxicity, dermal Category 5; Serious eye damage/eye irritation Category 2B

Signal Word: Danger!

Hazard Phrases	
H225	Highly flammable liquid and vapor.
H303+H313	May be harmful if swallowed or in contact with skin.
H320	Causes eye irritation.

Precautionary Phrases	
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P280	Wear protective gloves/ eye protection/ face protection.
P242	Use only non-sparking tools.
P233	Keep container tightly closed.
P243	Take precautionary measures against static discharge.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or physician.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353	IF ON SKIN: Remove/take off all contaminated clothing. Rinse skin with water shower

4. First Aid Measures

Eye Exposure: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Dermal Exposure: In case of skin contact, flush with copious amounts of water for at least

15 minutes. Remove contaminated clothing and shoes.

Oral Exposure: If Swallowing seek immediate medical advice.

Inhalation Exposure: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

5. Fire Fighting Measures

NFPA

Health: 2 Flammability: 4 Reactivity: 1

General Information:

Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water.

Flash Point: 16.6 deg C (61.88 deg F)

Autoignition Temperature: 363 deg C (685.40 deg F)

Explosion Limits: Upper: 19.0 vol %
Lower: 3.3 vol %

6. Accidental Release Measures

Small spill and leak:

Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8). Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container.

Large spill and leak:

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

7. Handling and Storage

Handling:

Do not get in eyes, on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use empty containers to retain product, residue can be hazardous. Do not reuse container.

Storage:

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container, protected from direct sunlight. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure Controls, Personal Protection

Engineering Controls:

Use explosion-proof ventilation equipment.

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethanol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m ³ TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m ³ TWA

OSHA Vacated PELs: Ethanol: 1000 ppm TWA; 1900 mg/m³ TWA

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 prevent skin exposure.

Respirators:

Respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Engineering Controls: Mechanical exhaust

Personal Protective:

Other: Wear appropriate government approved respirator, chemical-resistant gloves.

Equipment:

safety goggles, other protective clothing.

9. Physical and Chemical Properties

Physical State:	Liquid
Appearance:	Amber. Darkens with age.
Odor:	Alcohol-like
pH:	N/A
Vapor Pressure (mmHg):	40 @ 19°C
Vapor Density(AIR = 1):	1.6
Evaporation Rate:	N/A
Viscosity:	N/A
Boiling Point:	N/A
Solubility:	Soluble in water.

10. Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, ignition sources, excess heat, oxidizers.

Incompatibilities with Other Materials:

Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide.

Hazardous Decomposition Products:

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide

Hazardous Polymerization:

Will not occur.

11. Toxicological Information

Hematoxylin RTECS: MH7875000
LD50/LC50: N/A

Ethyl Alcohol RTECS: KQ6300000
Oral (LD50): Acute mg/kg [Rat]. 3450 mg/kg [Mouse].

Routes of Entry: Multiple routes: May be harmful by inhalation, ingestion, or skin absorption.

Conditions aggravated by exposure: The toxicological properties have not been thoroughly investigated.

Solution Carcinogenicity: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:

Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome".

Teratogenicity:

Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

Reproductive Effects:

Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).

Mutagenicity:

DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

Other Studies:

Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test: Administration into the eye (rabbit) = 500 mg (Severe).

12. Ecological Information

Toxicity:

Acute fish Toxicity (Ethanol)

LC50 Oncorhynchus mykiss (rainbow trout) >10,000 mg/l 96hr

LC50 Pimephales promelas (fathead minnow) >13,400 mg/l 96hr

Persistence and Degradability

Biodegradation is expected

Bioaccumulative Potential

Bioaccumulation is unlikely

Mobility in Soil

N/A

PBT and vPvB Assessment

Not required

13. Disposal Information

Waste Disposal Method:

Unused product: dispose as a regulated hazardous waste. Spent product or spill cleanup follow all provincial, local, state, and federal regulations..

14. Transport Information

DOT Proper shipping name : Alcohols, N.O.S. UN1987 PG II
Hazard class 3 (flammable)

15. Regulatory Information

U.S. Department of Transportation:

DOT Classification: F

Risk Phrases:

R11 Highly flammable.

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed

R36/38 Irritating to eyes and skin

R42/43 May cause sensitization by inhalation and skin contact

R61 May cause harm to the unborn child

R48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.

Safety Phrases:

S37/39 Wear suitable gloves and eye/face protection

S20/21 When using do not eat, drink or smoke

S2 Keep out of the reach of children

S16 Keep away from sources of ignition - No smoking

S33 Take precautionary measures against static discharges

S7 Keep container tightly closed.

S9 Keep container in a well-ventilated place

S24/25 Avoid contact with skin and eyes

16. Other Information

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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-3033-8 Eosin Solution MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Eosin Solution
Product number VB-3033-8
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 20850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Hazards Identification

Classification of the substance or mixture

GHS02 Flame Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Label elements

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms

GHS02 Signal word Danger

Hazard statements Highly flammable liquid and vapor.

Precautionary statements Keep away from heat/sparks/open flames/hot surfaces. No smoking. Use explosion-proof electrical/ventilating/lighting/equipment. Wear protective gloves / eye protection / face protection. Ground/bond container and receiving equipment. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of fire: Use for extinction: CO₂, powder or water spray.

Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)

Health = 1 Fire = 3 Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 1 Fire = 3 Reactivity = 0

Other hazards Results of PBT and vPvB assessment PBT: Not applicable.

vPvB: Not applicable.

3. Composition

Chemical characterization:

Mixtures Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:		
CAS: 64-17-5 EINECS: 200-578-6	ethanol	50-100%
CAS: 17372-87-1 EINECS: 241-409-6	disodium 2-(2,4,5,7-tetrabromo-6-oxido-3-oxoxanthen-9-yl)benzoate	0.1-≤2.5%
CAS: 18472-87-2 EINECS: 242-355-6	2',4',5',7'-Tetrabromo-4,5,6,7-tetrachlorofluorescein disodium salt	0.01-≤0.1%
CAS: 1936-15-8 EINECS: 217-705-6	7-Hydroxy-8-phenylazo-1,3-naphthalenedisulfonic acid Wool Orange 2G	0.01-≤0.1%

2. First Aid Measures

Description of first aid measures

General information: Immediately remove any clothing soiled by the product.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately rinse with water.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: If symptoms persist consult doctor.

Information for doctor: Most important symptoms and effects, both acute and delayed: No further relevant information available.

Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5. Firefighting Measures

Extinguishing media Suitable extinguishing agents: CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture: No further relevant information available.

Advice for firefighters

Protective equipment: No special measures required.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away.

Environmental precautions: Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation. **Reference to other sections**

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7. Handling and Storage

Handling:

Precautions for safe handling: No special precautions are necessary if used correctly. **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke. Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities Storage: Requirements to be met by storerooms and receptacles: Store in a cool location.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep receptacle tightly sealed. Store in cool, dry conditions in well sealed receptacles.

Specific end use(s): No further relevant information available.

8. Exposure Controls/Personal Protection

Additional information about design of technical systems: No further data; see item 7.

Control parameters

64-17-5 ethanol	PEL	Long-term value: 1900 mg/m ³ , 1000 ppm
	REL	Long-term value: 1900 mg/m ³ , 1000 ppm
	TLV	Short-term value: 1880 mg/m ³ , 1000 ppm

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls:

Personal protective equipment:

General protective and hygienic measures: Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work.

Breathing equipment: Not required.

Protection of hands:

Protective gloves The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation Material of gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a

preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Tightly sealed goggles

9. Physical and Chemical Properties

General Information	
Appearance	
Form:	Fluid
Color:	Reddish-orange
Odor:	Characteristic
Odor threshold	Not determined
pH-value	Not determined
Change in condition	
Melting point/Melting range:	Undetermined
Boiling point/Boiling range:	78 °C (172 °F)
Flash point:	13 °C (55 °F)
Flammability (solid, gaseous)	Not applicable
Ignition temperature:	425 °C (797 °F)
Decomposition temperature:	Not determined.
Auto igniting:	Product is not self igniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower	3.5 Vol %
Upper	15.0 Vol %
Vapor pressure at 20°C (68 °F)	59 hPa (44 mm Hg)
Density at 20°C (68 °F):	Not determined.
Relative density:	Not determined.
Vapour density:	Not determined.
Evaporation rate:	Not determined.
Solubility in / Miscibility with Water:	Fully miscible.
Segregation coefficient (n-octanol/water)	Not determined
Dynamic:	Not determined
Kinematic:	Not determined
Other information	No further relevant information available.

10 Stability and Reactivity

Reactivity: No further relevant information available.

Chemical stability:

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions: No dangerous reactions known.

Conditions to avoid: No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: No dangerous decomposition products known.

11. Toxicology Information

Information on toxicological effects Acute toxicity:

Primary irritant effect:

- On the skin: No irritant effect.
- On the eye: No irritating effect.
- Sensitization: No sensitizing effects known.

Carcinogenic categories IARC (International Agency for Research on Cancer): None of the ingredients are listed.

NTP (National Toxicology Program): None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

12. Ecological Information

Toxicity:

Aquatic toxicity: No further relevant information available.

Persistence and degradability: No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Additional ecological information:

General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects: No further relevant information available.

13. Disposal Considerations

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations. **Recommended cleansing**

agent: Water, if necessary with cleansing agents.

14. Transport Information

UN proper shipping name DOT, ADR, AND, IMDG, IATA	Void
UN proper shipping name DOT, ADR, ADN, IMDG, IATA	Void
Transport hazard class DOT, ADR, IMDG, IATA	Void
Packing group DOT, ADR, IMDG, IATA	Void
Environmental hazards Marine pollutant	Not applicable.
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
UN "Model Regulation"	-

15. Regulatory Information

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

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

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Specific toxic chemical listings): None of the ingredients is listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: 64-17-5 ethanol.

Carcinogenic categories EPA (Environmental Protection Agency) None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH) 64-17-5 ethanol

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. Other Information

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