VitroVivo Biotech
Make Tissues, Cells, Genes and Molecules Visible

Material Safety Data Sheet (MSDS)

Revision Date: Jan 11, 2017

1. IDENTIFICATION OF THE SUBSTRANCE/PREPARATION AND THE COMPANY/UNDERTAKING

SKU# VB-3000, VB-3000s
Product name VitroView™ H&E Stain Kit

Contact Manufacturer

VitroVivo Biotech, LLC
9605 Medical Center Drive, Suite 315
Rockville, MD 20850
USA

Phone: 301-500-0499
Toll free: 1-800-260-9817
Email: info@vitrovivo.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No
Aluminum potassium sulfate dodecahydrate (Hematoxylin solution only)	7784-24-9
Hematoxylin (Hematoxylin solution only)	517-28-2
Sodium iodate (Hematoxylin solution only)	7681-55-2
Glycerol (Hematoxylin solution only)	56-81-5
Eosin Y (Eosin solution only)	15086-94-9
Phloxine B (Eosin solution only)	18472-87-2
Ethanol (Eosin solution only)	64-17-5

3. HAZARDS IDENTIFICATION

GHS – Classification

Signal Word
DANGER

HealthHazards

Acute oral toxicity	Category 4
Skin irritation	Category 2

Eye irritation	Category 2 A
Specific target organ toxicity (single exposure) Respiratory system	Category 3

Physical hazards
Not hazardous

Hazard Statements
H225 – Highly flammable liquid and vapor
H272 – May intensify fire; oxidizer
H302 - Harmful if swallowed
H315 - Causes skin irritation
H317–May cause an allergic skin reaction
H319 - Causes serious eye irritation
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation

Precautionary Statements
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P220 - Keep/Store away from clothing/ combustible materials.
P221 - Take any precaution to avoid mixing with combustibles.
P233 - Keep container tightly closed
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P264 - Wash skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/ eye protection/ face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing
P285 - In case of inadequate ventilation wear respiratory protection.
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304 + P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/ physician if you feel unwell
P321 - Specific treatment (see supplemental first aid instructions on this label)
P330 - Rinse mouth
P332 + P313 - If skin irritation occurs: Get medical advice/ attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P362 - Take off contaminated clothing and wash before reuse
P363 - Wash contaminated clothing before reuse.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P403 + P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Principle Routes of Exposure

Potential Health Effects

Eyes	Causes irritation
Skin	Causes irritation. Avoid contact with skin.
Inhalation	Harmful by inhalation.

Ingestion Harmful if swallowed.

Specific effects

Carcinogenic effects Not Applicable
Mutagenic effects Not Applicable
Reproductive toxicity Not Applicable
Sensitization Not Applicable

Target Organ Effects Skin
Lungs

HMIS

Health	2
Flammability	2
Reactivity	0
Physical	2

4. FIRST AID MEASURES

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plentyof water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Ingestion Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air. Call a physician or poison control center immediately.

Notes to physician Treat symptomatically

5. FIRE-FIGHTING MEASURES

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

Special protective equipment for firefighters Wear self-contained breathing apparatus and protective suit.

Special hazards arising from the substance or mixture Carbon oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use personal protection equipment. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Beware of vapoursaccumulating to form explosive concentrations. Vapours can accumulate in low areas.

Methods for cleaning up Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not allow material to contaminate ground water system. See Section 12 for more information

7. HANDLING AND STORAGE

Handling Always wear recommended Personal Protective Equipment. Avoid contact withskin, eyes or clothing. Remove all sources of ignition

Storage Keep containers tightly closed in a cool, well-ventilated place. Keep away fromheat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Protect from sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

Chemical Name	OSHA PEL	OSH PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Ethanol	1,000 ppm 1,900 mg/m3	1,000 ppm 1,900 mg/m3	1,000.000000 ppm	1,000.000000 ppm
Glycerol	5 mg/m3	15 mg/m3	10 mg/m3	No information available

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

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

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment

Respirator Recommendations, National Institute of Occupational Safety and Health, U.S.

Up to 50 ppm

(APF = 10) Any air-purifying half-mask respirator with organic vapor cartridge(s) incombination with an N95, R95, or P95 filter. The following filters may also be used:
N99, R99, P99, N100, R100, P100.
(APF = 10) Any supplied-air respirator
Up to 125 ppm:
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
(APF = 25) Any powered air-purifying respirator with an organic vapor cartridge incombination with a high-efficiency particulate filter.
Up to 250 ppm:
(APF = 50) Any air-purifying full-facepiece respirator equipped with organic vaporcartridge(s) in combination with an N100, R100, or P100 filter.
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style,front- or back-mounted organic vapor canister having an N100, R100, or P100 filter.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece andorganic vapor cartridge(s) in combination with a high-efficiency particulate filter
(APF = 50) Any self-contained breathing apparatus with a full facepiece
(APF = 50) Any supplied-air respirator with a full facepieceEmergency or planned entry into unknown concentrations or IDLH conditions:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepieceand is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and isoperated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style,front- or back-mounted organic vapor canister having an N100, R100, or P100filter. /Any appropriate escape-type, self-contained breathing apparatus.filter.

Hand protection Impervious gloves. S24 - Avoid contact with skin. S36 – Wear suitable protectiveclothing.

Eye protection Tight sealing safety goggles.

Skin and body protection Impervious clothing.

Hygeine measures Contaminated work clothing should not be allowed out of the workplace. Avoidcontact with skin, eyes or clothing. Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure Controls Prevent product from entering drains

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Form	Liquid	
Appearance		
Odor	Alcohol	
Boiling point/range	No data available	No data available
Melting point/range	No data available	No data available
Flash point	No data available	No data available
Autoignition temperature	No data available	No data available
Oxidizing properties	No information available	
Water solubility	Soluble	

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions

Materials to avoid Alkali metals, Oxidizing agents, Peroxides, Strong reducing agents, Powdered metals, Incompatibility: mixtures of iodates with finely divided aluminum, arsenic,copper, carbon, phosphorous (red or white) sulfur; hydrides of alkali and alkaline earth metals; sulfides of antimony,arsenic, copper or tin, metal cyanides, thiocyanates or impure manganese dioxide may react violently or explosively,either spontaneously (especially in the presence of moisture) or on initiation by heat, friction impact, sparks, or addition of sulfuric acid

Hazardous decomposition Products No data available

Polymerization No data available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	**LD50 (oral,rat/mouse)**	**LD50 (dermal,rat/rabbit)**	**LC50 (inhalation,rat/mouse)**
Ethanol	= 30,000 mg/kg (Rat)/No data available	No data available	=30,000 mg/m3(Rat)/No data available
Glycerol	= 12,800 mg/kg (Rat)No data available	No data available	No data available
Phloxine B	= 8,400 mg/kg (Rat)No data available	No data available	No data available
Sodium iodide	= 505 mg/kg (mouse)	No data available	No data available

Principle Routes of Exposure

Potential Health Effects

Eyes	Causes irritation
Skin	Causes irritation
Inhalation	Harmful by inhalation
Ingestion	Harmful if swallowed
Carcinogenic effects	No information available.
Mutagenic effects	Phloxine B: Lungs, mutation in mammalian somatic cells.
Reproductive toxicity	Ethanol: Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn:Drug dependence. Phloxine B: Developmental Toxicity-rat-Oral Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Newborn: Growth statistics (e.g., reduced weight gain). Developmental Toxicity-mouse-Oral Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Developmental Toxicity-mouse-Oral Specific Developmental Abnormalities: Musculoskeletal system
Sensitization	No information available**.**
Additional Information	Phloxine B: RTECS: LM5900000 Sodium iodide: RTECS: NN1400000
Target organ effects	Stomach (ethanol, sodium iodide); Kidney (glycerol; RTECS: MA8050000)

12. ECOLOGICAL INFORMATION

Ecotoxicity	Ethanol: Toxicity to fish. LC50 - Pimephalespromelas (fathead minnow) - 14,200 mg/l –96 h Toxicity to daphnia and other aquatic invertebrates. LC50 - Ceriodaphniadubia (water flea) - 5,012 mg/l - 48 h. NOEC - Daphnia magna (Water flea) - 9.6 mg/l - 9 d Toxicity to algae. EC50 - Chlorella vulgaris (Fresh water algae) - 275 mg/l - 72 h Phloxine B: Toxicity to fish LC50 - Gambusiaaffinis (Mosquito fish) - 97.7 mg/l - 96 h Sodium iodide: Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 220 mg/l - 96 h
Chronic aquatic toxicity (Ethanol)	Category 3.
Mobility	See log POW.
Biodegradation	Inherently biodegradable.
Bioaccumulation	No information available.

13. DISPOSALCONSIDERATIONS

Dispose of in accordance with local regulations

14. TRANSPORT INFORMATION

Not determined

15. REGULATORY INFORMATION

UNITED STATES:
TSCA:
This product is solely for research and development purposes only and may not be used, processed or distributed for a commercial purpose. It may only be handled by technically qualified individuals.
Prop 65 Listed Chemicals: No Prop 65 Chemicals.
No 313 Chemicals

CANADA:

DSL/NDSL: Not determined.

COMPONENT ETHANOL
WHMIS Classification D2B

EUROPEAN UNION:
PRODUCT RISK PHRASES: None assigned.
PRODUCT SAFETY PHRASES: Not applicable.
PRODUCT CLASSIFICATION: Not classified

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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