VitroVivo Biotech
Make Tissues, Cells, Genes and Molecules Visible

MATERAL SAFETY DATA SHEET (MSDS)

Kit Name: Martius Scarlet Blue (MSB) Stain Kit
SKU #: VB-3036

Revision Date: 01-16-2022

Components:

VB-3036 -1	Bouin's solution
VB-3036-2	Weigert's Hematoxylin Solution A
VB-3036-3	Weigert's Hematoxylin Solution B
VB-3036 -4	Martius Yellow Solution
VB-3036 -5	Biebrich Scarlet-Acid Fuchsin Solution
VB-3036 -6	Phosphomolybdic-Phosphotungstic Acid Solution
VB-3036 -7	Aniline Blue Solution
VB-3036-8	1% Acetic Acid Solution

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name	Bouin's solution
Product number	VB-3036-1
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#
Formaldehyde	50-00-0
Acetic acid	64-19-7
Picric acid	88-89-1
Water	7731-18-5

3. Hazards Identification

Label Elements

Signal Word: Danger

Hazard Statements:
May be corrosive to metals
Harmful if swallowed
Causes severe skin burns and eye damage
May cause an allergic skin reaction
Harmful if inhaled
May cause cancer
Causes damage to organs
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

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 Wash face, hands and any exposed skin after handling.
Do not eat, drink or smoke when using this product Use only outdoors or in a well-ventilated.
Do not breathe dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves.
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 Wash

contaminated clothing before reuse If skin irritation or rash occurs: Get medical advice/attention.

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

Ingestion
Rinse mouth, Do NOT induce vomiting.

Spills
Absorb spillage to prevent material damage

Storage
Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant polypropylene container with a resistant inliner Store in a dry place.

Disposal
Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

Other hazards
WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

4. First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Inhalation:
Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

5. Fire and Explosion Data

Suitable Extinguishing Media
Water spray. Carbon dioxide (CO 2). Foam. Dry chemical. alcohol-resistant foam.

Unsuitable Extinguishing Media
No information available.

Flash Point	N/A
Method -	N/A
Autoignition Temperature	N/A
Explosion Limits	
Upper	N/A
Lower	N/A
Sensitivity to Mechanical Impact	N/A
Sensitivity to Static Discharge	N/A

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

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.

NFPA

Health: 3 Flammability: 1 Instability: 0 Physical hazard: N/A

6. Accidental Release Measures

Personal Precautions
Do not get in eyes, on skin, or on clothing.
Use personal protective equipment. Evacuate personnel to safe.
Keep people away from and upwind of spill/leak.

Environmental Precautions
See Section 12 for additional ecological information.
Do not flush into surface water or sanitary sewer system.
Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closedcontainers for disposal.

7. Handling and Storage

Handling:
away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label.

Storage:
Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

8. Exposure Controls / Personal Protection

Control parameters

Picric Acid, Wetted (88-89-1)

OSHA	OSHA PEL (TWA) (mg/m³)	0.1 mg/m³
IDLH	US IDLH (mg/m³)	75 mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	0.1 mg/m³
NIOSH	NIOSH REL (STEL) (mg/m³)	0.3 mg/m³

Formaldehyde, 37% w/w (50-00-0)

ACGIH	ACGIH Ceiling (mg/m³)	0.37 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	0.75 ppm
OSHA	OSHA PEL (STEL) (ppm)	2 ppm
IDLH	US IDLH (ppm)	20 ppm
NIOSH	NIOSH REL (TWA) (ppm)	0.016 ppm
NIOSH	NIOSH REL (ceiling) (ppm)	0.1 ppm 15 min

Acetic Acid (64-19-7)

ACGIH	ACGIH TWA (ppm)	10 ppm (Acetic acid; USA; Time-weighted Average exposure limit 8 h; TLV - Adopted Value)

ACGIH	ACGIH STEL (ppm)	15 ppm (Acetic acid; USA; Short time value; TLV - Adopted Value)
OSHA	OSHA PEL (TWA) (mg/m³)	25 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	10 ppm
IDLH	US IDLH (ppm)	50 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	25 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	10 ppm
NIOSH	NIOSH REL (STEL) (mg/m³) 37 mg/m³	
NIOSH	NIOSH REL (STEL) (ppm)	15 ppm

Water (7732-18-5) N/A

Methanol (67-56-1)

ACGIH	ACGIH TWA (ppm)	200 ppm (Methanol; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)
ACGIH	ACGIH STEL (ppm)	250 ppm (Methanol; USA; Short time value; TLV -Adopted Value)
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
IDLH	US IDLH (ppm)	6000 ppm
NIOSH (mg/m³)	NIOSH REL (TWA)	250 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	200 ppm
NIOSH (mg/m³)	NIOSH REL (STEL)	325 mg/m³
NIOSH	NIOSH REL (STEL) (ppm)	250 ppm
NIOSH		Skin

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH - The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Exposure controls

Appropriate engineering controls	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.
Personal protective equipment	Safety glasses. Gloves. Protective clothing. High gas/vapor concentration: gas mask with filter type B.
Hand protection	Wear protective gloves.
Eye protection	Chemical goggles or face shield.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

Other information	Do not eat, drink or smoke during use.

9. Physical and Chemical Properties

Physical State	Liquid
Appearance	Yellow
Odor	pungent
Odor Threshold	No information available
pH	No information available
Melting Point/Range	> 0 °C
Boiling Point/Range	N/A
Flash Point	N/A
Evaporation Rate	N/A
Flammability (solid,gas)	N/A
Flammability or explosive limits	
Upper	N/A
Lower	N/A
Vapor Pressure	N/A
Vapor Density	> 1.0
Relative Density	> 1.000
Solubility	Soluble in water
Partition coefficient; n-octanol/water	N/A
Autoignition Temperature	N/A
Decomposition Temperature	N/A
Viscosity	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

Oral LD50	Category 4. ATE = 300 - 2000 mg/kg.
Dermal LD50	Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
Vapor LC50	Category 4. ATE = 10 - 20 mg/l.

Component information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Formaldehyde	500 mg/kg (Rat)	270 mg/kg (Rabbit)	0.578 mg/L (Rat) 4 h
Methyl alcohol	6200 mg/kg (Rat)	15800 mg/kg (Rabbit)	83.2 mg/L (Rat) 4 h
Acetic acid	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h

Picric acid	200 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products: N/A

Chronic effects from short and long-term exposure :

Irritation: Causes burns by all exposure routes

Sensitization: May cause sensitization by skin contact

Carcinogenicity: Possibly carcinogenic to human

Mutagenic Effects: Mutagenic effects have occurred in humans.

Reproductive Effects: Experiments have shown reproductive toxicity effects on laboratory.

Developmental Effects: Developmental effects have occurred in experimental animals.

Teratogenicity: Teratogenic effects have occurred in experimental animals.

STOT - single exposure: Respiratory system
STOT - repeated exposure: Kidney Liver spleen Blood

Aspiration hazard: N/A

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. Operforation: 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 N/A

Other Adverse Effects:
Tumorigenic effects have been reported in experimental animals.

12. Ecological Information

Ecotoxicity N/A
BOD5 and COD N/A

Products of Biodegradation
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
The products of degradation are more toxic.

13. Disposal Considerations

Disposal methords:
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.

Component Waste Numbers:
Formaldehyde - 50-00-0
Methyl alcohol - 67-56-1

14. Transport Information

Department of Transportation (DOT)

In accordance with DOT	
Transport document description	UN3265 Corrosive liquid, acidic, organic, n.o.s., 8, III
UN-No.(DOT)	UN3265
Proper Shipping Name (DOT)	Corrosive liquid, acidic, organic, n.o.s.
Transport hazard class(es) (DOT)	8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT)	III - Minor Danger
Hazard labels (DOT)	8 - Corrosive
DOT Packaging Non Bulk (49 CFR 173.xxx)	203
DOT Packaging Bulk (49 CFR 173.xxx)	241
DOT Symbols	G - Identifies PSN requiring a technical name
DOT Symbols	G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2);
DOT Packaging Exceptions (49 CFR 173.xxx)	154
DOT Vessel Stowage Location	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	40 - Stow ‘‘clear of living quarters’’
Other information	No supplementary information available.

15. Regulatory Information

US Federal regulations

Bouin's Fixative

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Picric Acid, Wetted	CAS No 88-89-1	1.3%
Methanol	CAS No 67-56-1	3.6%

Picric Acid, Wetted (88-89-1)

SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Reactive hazard Fire hazard
SARA Section 313 - Emission Reporting	1 %

Formaldehyde, 37% w/w (50-00-0)

RQ (Reportable quantity, section 304 of EPA's List of Lists)	100 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	0.1 %

Acetic Acid (64-19-7)

RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb

Methanol (67-56-1)

RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Fire hazard

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

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Weigert's Hematoxylin Solution A
Product number VB-3036-2
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 #
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 ma 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/m3 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

Persistance 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 cleanupfollow all provincial, local, state, and federal regulations..

14. Transport Information

DOT Proper shipping name **:** Alcohols, N.O.S. UN1987 PG ll
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

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

VB-3036-3 Weigert's Hematoxylin Solution B MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Weigert's Hematoxylin Solution B
Product number VB-3036-3
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 #.
Ferric Chloride	10025-77-1
Acetic acid	64-19-7
Water	7732-18-5

3. Hazards Identification

GHS Classification Acute Oral Toxicity Category 5, Skin Irritation Category 3; Serious Eye Damage Category 2B

Signal Word Warning!

Hazard Phrases	
H303	May be harmful if swallowed.
H316	Causes mild skin irritation.
H320	Causes eye irritation.

Precautionary Phrases	
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.
P337+P315	If eye irritation persists, get immediate medical attention.
P312	Call a POISON CENTER/doctor/physician if you feel unwell

4. First Aid Measures

Eyes:
Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if irritation persists

Skin:
Immediately flush affected area with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. If irritation persists, get medical attention.

Ingestion:
Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhailation:
Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms worsen.

5. Fire Fighting Measures

Flammability of the Product:

Flash Point: Not available

Autoignition Temperature: Not available

NFPA Hazard Classification:
Health: 1 Flammability: 0 Reactivity: 0 Other:

HMIS Hazard Classification:
Health: 1 Flammability: 0 Reactivity: 0 Protection: B

Extinguishing Media:
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

Special Fire Fighting Procedures:
As with any fire, wear personal protection equipment, including a self-contained breathing apparatus (S.C.B.A.)

6. Accidental Release Measures

Small spill and leak:
Wear chemical resistant clothing, gloves and eye protection. 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:
Wear chemical resistant clothing, gloves and eye protection. Wear NIOSH/MSHA approved breathing apparatus. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container.

Section 6 Notes:
Keep material away from heat, flame, ignition sources, and reactive materials. Don't allow product to enter drains.

7. Handling and Storage

Handling:
Avoid contact with skin and eyes. Wash thoroughly after handling. Avoid breathing vapor.

Storage:
Store in well ventilated area. Keep container tightly closed. Store at 15-30°C

8. Exposure Controls / Personal Protection

Engineering Controls:
Working areas should be adequately large and well ventilated to prevent concentration of vapors. Provide mechanical exhaust ventilation or other engineering controls to keep airborne concentration of vapors below their respective threshold limits.

Respiratory Protection: Avoid breathing vapor.
Eye Protection:

Safety glasses or goggles are required

Skin Protection:
Chemical resistant gloves are required. Glove material must be resistant to the components of this product.

Other Protective Clothing or Equipment:
Protective clothing is required, lab coat or apron.

Work Hygienic practice:
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure guidelines:

Component	Source	Type	Value
Hydrochloric acid	OSHA PEL	TWA	5 ppm
	OSHA PEL	STEL	5 ppm
	ACGIH TLV	TWA	5 ppm
	ACGIH TLV	STEL	1 ppm
	NIOSH REL	TWA	1 ppm
	NIOSH REL	STEL	1 ppm
Ferric Chloride	OSHA PEL	TWA	1 mg(Fe)/m3
	ACGIH TLV	TWA	1 mg(Fe)/m3

9. Physical and Chemical Properties

Apperance: Clear yellow
Odor: pungent odor
Physical State: Liquid
pH AS Supplied: Unknown
Boiling Point: 100°C
Melting Point / Freezing Point: Unknown
Vapor Pressure (mmHg): 18 @ 20°C
Vapor Density (AIR = 1): 0.6
Evaporation Rate: (water=1) 1
Solubility in water: Soluble in water
Molecular Weight: Mixture
Viscosity: Not established

10. Stability and Reactivity Data

Stability: Product is stable under normal conditions of use.

Conditions to avoid (Stability): Excessive heat, direct sunlight

Incompatibility (Material to avoid): Strong alkalis

Hazardous decomposition or by-products: Hydrogen chloride, oxides of carbon.

Hazardous polymerization: No hazardous polymerization

11. Toxicological Information

Routes of entry: Skin/eye contact, inhalation, and ingestion.
Acute toxicity:

Oral LD50 N/A

Inhalation LC50	N/A
Dermal LD50	N/A
Other information on acute toxicity	N/A
Skin corrosion/irritation	Irritating to skin and mucous membranes
Serious eye damage/eye irritation	Irritating to eyes.
Respiratory or skin sensitization	N/A
Germ cell mutagenicity	N/A

Carcinogenicity:

IARC
Hydrochloric Acid is listed as Group 3 – Not classifiable as to carcinogenicity in humans

NTP
None of the components are listed.

Specific target organ toxicity:	N/A
Aspiration hazard:	N/A

Potential health effects:

Inhalation: May be irritating to mucous membranes.

I**ngestion:** While the toxicity of this compound is low, large doses may cause nausea, vomiting, diarrhea.

Skin Contact: Mild skin irritation.

Eye Contact: May be irritating to eyes.

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

12. Ecological Information

TOXICITY:
Fish: No relevant studies identified
Crustacea: No relevant studies identified
Algae/Aquatic plants: No relevant studies identified
Other organisms: No relevant studies identified

PERSISTANCE AND DEGRADABILITY: Biodegradable
BIOACCUMULATIVE POTENTIAL: No relevant studies identified

MOBILITY IN SOIL: Miscible in water. May spread in water systems.
PBT and vPvB ASSESSMENT: Not required.

SECTION 12 NOTES: Iron salts are expected to be toxic to aquatic life.

13. Disposal Considerations

WASTE DISPOSAL METHOD:
Unused product: dispose as a regulated hazardous waste. Spent product spill cleanupfollow all provincial, local, state, and federal regulations.

RCRA HAZARD CLASS: Not classified

14. Transport Information

U.S. DEPARTMENT OF TRANSPORTATION
AIR TRANSPORTUON **:** Not Regulated
PROPER SHIPPING NAME:

HAZARD CLASS:
ID NUMBER:
PACKING GROUP:
LABEL STATEMENT:
ENVIRONMENTAL HAZARDS:

15. Regulatory Information

United States
HCS Classification: Irritant

U.S. Federal regulations:

TSCA (Toxic Substance Control Act): All of the components are listed on the TSCA Inventory.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: Hydrochloric acid RQ 5000
SARA 302/304/311/312 hazardous chemicals:
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Immediate (acute) health hazard, Delayed (chronic) health hazard
SARA 313 Listed: Ferric Chloride CAS 10025-77-1
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT):

DEA List I & II Chemicals
(Precursor Chemicals): Not listed

RTK STATES: Hydrochloric Acid CAS #7647-01-0 CA, FL, MA, MN, PA, NJ, RI, CT

CEPA DSL / CEPA NDSL:
All components are listed or exempted. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

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

2. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Martius Yellow Solution
Product number VB-3036-4
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.
Water	7732-18-5
Martius Yellow	605-69-6

3. Hazards Identification

GHS Classifixation: Skin Sensitization Category 1B, Skin Irritation Category 3
Signal Word: Warning!

Hazard Phrases	
H317	May cause an allergic skin reaction.
H315	Causes skin irritation.

Precautionary Phrases	
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P280	Wear protective gloves/ eye protection/ face protection.

4. First Aid Measures

Eyes:
Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin:
In case of contact, flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Ingestion:
Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation:
Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

5. Fire and Explosion Data

Conditions of flammability
Not flammable or combustible.

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

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

6. Accidental Release Measures

Personal precautions
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. Handling and Storage

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure Controls / Personal Protection

Personal protective equipment

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. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirator and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and 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.

Environmental Exposure Control:
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Work Hygiene Practice:

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash station and safety.

9. Physical and Chemical Properties

Appearance	Orange
Odor	Odorless
Physical state	liquid
pH as supplied	Not Available
Boiling point	Not Available
Melting point/freezing point	Not Available
Vapor pressure (mmHg)	Not Available
Vapor density	Not Available
Evaporation	Not Available
Solubility Water	Soluble in water
Molecular Weight	Mixture
Viscosity	Not established

10. Stability and Reactivity Data

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Oxidizing agents, Strong oxidizing agents, Metals, Amines, Alcohols, Peroxides, permanganates, e.g. potassium permanganate, Soluble carbonates and phosphates, Hydroxides

Hazardous decomposition products
formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. Toxicological Information

Acute toxicity

Oral LD50	no data available
Inhalation LC50	no data available
Dermal LD50	no data available
Skin corrosion/irritation	no data available
Serious eye damage	no data available
Germ cell mutagenicity	no data available
Carcinogenicity	no component of this product

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and

skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

12. Ecological Information

Toxicity	no data available
Persistence and degradability	no data available
Bioaccumulative potential	no data available
Mobility in soil	no data available
PBT and vPvB assessment	no data available
Other adverse effects	no data available

13. Disposal Considerations

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. Transport Information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. Regulatory Information

United States

OSHA/HCS Classification:
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

U.S. Federal regulations:

TSCA (Toxic Substance Control Act): All componenets are listed on the TSCA Inventory

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals:
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

CEPA DSL / CEPA NDSL : All components are listed or exempted.

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

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

VB-3036-5 Biebrich Scarlet-Acid Fuchsin Solution MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Biebrich Scarlet-Acid Fuchsin Solution
Product number VB-3036-5
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.
Water	7732-18-5
Biebrich Scarlet	4196-99-0
Acid Fuchsin	123334-10-1
Acetic Acid	64-19-7

3. Hazards Identification

GHS Classifixation: Skin Sensitization Category 1B, Skin Irritation Category 3
Signal Word: Warning!

Hazard Phrases	
H317	May cause an allergic skin reaction.
H315	Causes skin irritation.

Precautionary Phrases	
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P280	Wear protective gloves/ eye protection/ face protection.

4. First Aid Measures

Eyes:
Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.

Skin:
In case of contact, flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Ingestion:
Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation:
Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.

5. Fire and Explosion Data

Conditions of flammability
Not flammable or combustible.

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

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

6. Accidental Release Measures

Personal precautions
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. Handling and Storage

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure Controls / Personal Protection

Personal protective equipment

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. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirator and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and 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.

Environmental Exposure Control:
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Work Hygiene Practice:
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash station and safety.

Exposure Guidelines:

Component	Source	Type	Value
Acetic Acid	OSHA PEL	TWA	10 ppm (25 mg/m3)
	NIOSH REL	TWA	10 ppm (25 mg/m3)
	ACGIH TLV	TWA	10 ppm

9. Physical and Chemical Properties

Appearance	Dark Red
Odor	**S**light vinegar odor
Physical state	liquid
pH as supplied	Not Available
Boiling point	Not Available
Melting point/freezing point	Not Available
Vapor pressure (mmHg)	Not Available
Vapor density	Not Available
Evaporation	Not Available
Solubility Water	Soluble in water
Molecular Weight	Mixture
Viscosity	Not established

10. Stability and Reactivity Data

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
no data available

Materials to avoid
Oxidizing agents, Strong oxidizing agents, Metals, Amines, Alcohols, Peroxides, permanganates, e.g. potassium permanganate, Soluble carbonates and phosphates, Hydroxides

Hazardous decomposition products
formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. Toxicological Information

Acute toxicity

Oral LD50 no data available

Inhalation LC50 no data available

Dermal LD50 no data available

Skin corrosion/irritation no data available

Serious eye damage no data available

Germ cell mutagenicity no data available

Carcinogenicity no component of this product

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

12. Ecological Information

Toxicity no data available

Persistence and degradability no data available

Bioaccumulative potential no data available

Mobility in soil no data available

PBT and vPvB assessment no data available

Other adverse effects no data available

13. Disposal Considerations

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. Transport Information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. Regulatory Information

United States

OSHA/HCS Classification:
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

U.S. Federal regulations:

TSCA (Toxic Substance Control Act): All componenets are listed on the TSCA Inventory

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals:
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:

CEPA DSL / CEPA NDSL : All components are listed or exempted.

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

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

VB-3036-6 Phosphomolybdic-Phosphotungstic Acid Solution MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Phosphomolybdic -Phosphotungstic Acid Solution
Product number VB-3036-6
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

Composition	CAS#
Phosphomolybdic Acid	51429-74-4 2.5
Phosphotungstic Acid v	12501-23-4
Water	7732-18-5

3. Hazards Identification

GHS Classifications

Health Hazards
H315-Skin Corrosion/Skin Irritation: 2
H318-Eye damage/Irritation: 1

Physical Hazards:
Not classified

Environmental Hazards:
Aquatic acute environmental Hazards: Not classified
Chronic environmental Hazards: 4

Pictograms or Hazard symbols and Hazard statement.
Warning: Causes skin irritation.
Danger: Causes serious eye damage

Precautionary Statement

H315
P264-Wash thoroughly after handling.
P280-Wear protective gloves.
P302+P352-IF ON SKIN: Wash with plenty of soap and water.
P332+P313-If skin irritation occurs: Get medical advice/attention.
P362-Take off contaminated clothing and wash before reuse

H318
P280-Wear eye protection and face protection
P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310-Immediately call a POISON CENTER or doctor/physician.

DANGER! Causes skin irritation! Causes serious eye damage! Corrosive!
Avoid contact with skin, eyes and clothing. Wash thoroughly after handling

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

Firefighters should wear proper protective clothing and self contained breathing apparatus with full piece operated in positive pressure mode to prevent contact with skin and eyes.

Extinguishing Media:
Use water spray, dry chemical powder, or appropriate foam.

Flash Point: N/A

NFPA Rating: (estimated)

Health: 2; Flammability: 0; Instability: 0

6. Accidental Release Measures

Procedure of Personal Precaution:
Wear protective gear.

Methods for Cleaning up:
Absorb with sand, earth or vermiculite. Carefully sweep up and containerize for proper disposal.

7. Handling and Storage

Use care when handling. Wash thoroughly after handling. Store capped at room temperature.
Keep away from incompatible materials.

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.

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:
A 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.

9. Physical and Chemical Properties

Physical State:	Liquid
Appearance:	Yellow
Odor:	none
Solubility:	Soluble in water
pH:	1.0-1.4 water.
Vapor Pressure:	2.3 kPa @ 20^{o}C
Vapor Density:	0.62 (Air=1)
Evaporation Rate:	N/A
Viscosity:	N/A
Boiling Point:	100 ^{o} C

10. Stability and Reactivity Data

Chemical Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: N/A

Incompatibilities with Other Materials: N/A

Hazardous Decomposition Products: N/A

Hazardous Polymerization: Will not occur.

11. Toxicological Information

RTECS#:

LD50/LC50:

CAS# 12501-23-4:	N/A
CAS# 51429-74-4:	N/A

Carcinogenicity:

CAS# 12501-23-4:	Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 51429-74-4:	Not listed by ACGIH, IARC, NTP, or CA Prop 65.

12. Ecological Information

Ecotoxicity:

CAS# 12501-23-4:	N/A
CAS# 51429-74-4:	N/A
Environmental:	N/A
Physical:	N/A
Other:	N/A

13. Disposal Considerations

Disposal method:

Handled as hazardous waste and sent to an RCRA approved incinerator or disposed in an RCRA approved wasted facility.

14. Transport Information

DOT

Non-Regulated

15. Regulatory Information

Risk Phrases:

R22 Harmful if swallowed.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.

Safety Phrases:

S26/28 In case of contact with eyes or skin, rinse immediately with plenty of water and seek medical advice.
S36 Wear suitable protective clothing.

16. Other Information

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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

VB-3036-7 Aniline Blue Solution MSDS

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name	Aniline Blue Solution
Product number	VB-3036-7
Product Description	Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 29850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition	CAS #
Aniline Blue	28631-66-5
Glacial Acetic Acid	64-19-7
Water	7732-18-5

3. Hazards Identification

GHS Classifications
Health Hazards

H315 -Skin Corrosion/Skin Irritation: 2
H320-Eye damage/Irritation: 2B
H317-Skin Dermal Sensitization-1

Physical hazards

H290-Corrosive to Metals: 1

Environmental Hazards

Aquatic acute environmental Hazards: Not classified
Chronic environmental Hazards: Not classified

Precautionary Statement

H315
P264-Wash thoroughly after handling.
P280-Wear protective gloves.
P302+P352-IF ON SKIN: Wash with plenty of soap and water.
P332+P313-If skin irritation occurs: Get medical advice/attention.
P362-Take off contaminated clothing and wash before reuse

H320
P305+P351+P338-IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313-If eye irritation persists: Get medical advice/attention.

H317
P272 Contaminated work clothing should not be allowed out of the work place.
P333+P313 IF ON SKIN: Wash with plenty of soap and water.
P363 Wash contaminated clothing before reuse.

H290
P234-Keep only in original container.

P390-Absorb spillage to prevent material damage.
P406-Store in corrosive resistant/container with a resistant inner liner.

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

Firefighters should wear proper protective clothing and self contained breathing apparatus with full piece operated in positive pressure mode to prevent contact with skin and eyes.

Extinguishing Media:
Use water spray, dry chemical powder, or appropriate foam. Flash Point: N/A

NFPA Rating:
Health: 1; Flammability: 0; Instability: 0

6. Accidental Release Measures

Procedure(s) of Personal Precaution(s):
Wear protective gear.

Methods for Cleaning up:
Absorb with sand, earth or vermiculite. Carefully sweep up and containerize for proper disposal.

7. Handling and Storage

Use care when handling. Wash thoroughly after handling.
Store capped at Room temperature.
Keep away from incompatible materials.

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.

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:
A 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.

9. Physical and Chemical Properties

Physical State:	Liquid
Appearance:	Blue
Odor:	Acetic Acid
pH:	N/A
Vapor Pressure:	N/A
Vapor Density:	N/A
Evaporation Rate:	N/A
Viscosity:	N/A
Boiling Point:	N/A
Freezing/Melting Point:	N/A
Decomposition Temperature:	N/A
Solubility: Soluble. Specific Gravity/Density:	N/A

10. Stability and Reactivity Data

Chemical Stability:
Stable under ordinary conditions of use and storage. Heat and sunlight can contribute to instability.

Conditions to Avoid:
Heat, freezing.

Incompatibilities with Other Materials:
Chromic Acid, ethylene glycol, perchloric acid, phosphorous trichloride, oxidizers, sodium peroxide, strong caustics, most metals (except aluminum), carbonates, hydroxides, oxides, and phosphates.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

RTECS#:

LD50/LC50:
CAS# 64-19-7:
Oral rat LD50: 3310 mg/kg.
Skin: rabbit LD50: 1.06 g/kg
Inhalation mouse LC50: 5620 ppm/1-hr; investigated as a mutagen, reproductive effector.

Carcinogenicity:

CAS# 64-19-7: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 28631-66-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
LD50/LC50: CAS# 28631-66-5 not available

Epidemiology: No data available.

Teratogenicity: No data available.

Reproductive Effects: No data available.

Neurotoxicity: Not data available.

Mutagenicity: No data available.

12. Ecological Information

Ecotoxicity:

CAS# 64-19-7.
This material is expected to be slightly toxic to aquatic life. The LC50/96- hour values for fish are between 10 and 100 mg/l.

Environmental:
When released into the air, this material may be moderately degraded by reaction with photochemically produced hydroxyl radicals.

Physical: No information available.
Other: No information available.

13. Disposal Considerations

Appropriate method of disposal of substance or preparation:
Handled as hazardous waste and sent to an RCRA approved incinerator or disposed in an RCRA approved wasted facility.

14. Transport Information

DOT
Non-Regulated

15. Regulatory Information

Risk Phrases:

R22 Harmful by inhalation, in contact with skin and if swallowed
R36/38 Irritating to eyes and skin

Safety Phrases:
S20/21 When using do not eat, drink or smoke
S2 Keep out of the reach of children.
S 7 Keep container tightly closed.
S 9 Keep container in a well-ventilated place

16. Other Information

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DOT: US Department of Transportation
IATA: International Air Transport Association

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

1. Identification of the Substance/Mixture and Company

Identification of the substance or mixture

Product Name Acetic Acid Solution
Product number VB-3036-8
Product Description Kit Component

Manufacturer/Supplier

VitroVivo Biotech, LLC. 405 E Gude Dr. Suite 214, Rockville, MD 29850
Phone: 301-500-0499 Toll free: 1-800-260-9817 Fax: 844-248-6208

2. Composition/information on ingredients

Composition:

Composition	CAS #	Weight %
Glacial Acetic acid	64-19-7	1
Water	7732-18-5	99

Toxicological Data on Ingredients:
Acetic acid: ORAL (LD50): Acute: 3310 mg/kg [Rat]. 4960 mg/kg [Mouse]. 3530 mg/kg [Rat].

3. Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant). Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation (lung sensitizer). Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs.

Potential Chronic Health Effects:
Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

4. First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get

medical attention immediately.

Serious Ingestion: Not available.

5. Fire Fighting Measures

Flammability of the Product: N/A
Auto-Ignition Temperature: N/A
Flash Points: N/A
Flammable Limits: N/A
Products of Combustion: N/A

Fire Hazards in Presence of Various Substances: N/A
Explosion Hazards in Presence of Various Substances:
Non-explosive in presence of open flames and sparks, of shocks.
Fire Fighting Media and Instructions: N/A
Special Remarks on Fire Hazards: N/A

Special Remarks on Explosion Hazards:
Acetic acid vapors may form explosive mixtures with air. Reactions between acetic acid and the following materials are potentially explosive: 5-azidotetrazole, bromine pentafluoride, chromium trioxide, hydrogen peroxide, potassium permanganate, sodium peroxide, and phorphorus trichloride. Dilute acetic acid and dilute hydrogen can undergo an exothermic reaction if heated, forming peracetic acid which is explosive at 110 degrees C. Reaction between chlorine trifluoride and acetic acid is very violent, sometimes explosive. (Acetic acid)

6. Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Poisonous liquid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Finish p. 3 cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. Handling and Storage

Precautions:
Keep locked up.. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage:
Keep container tightly closed. Keep container in a cool, well-ventilated area.
Do not store above 23°C (73.4°F).

8. Exposure Controls / Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Personal Protection:
Splash goggles. Lab coat. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
Acetic acid TWA: 10 STEL: 15 (ppm) [Australia] TWA: 25 STEL: 27 (mg/m3) [Australia] TWA: 10 STEL: 15 (ppm) from NIOSH TWA: 25 STEL: 37 (mg/m3) from NIOSH TWA: 10 STEL: 15 (ppm) [Canada] TWA: 26 STEL: 39 (mg/m3) [Canada] TWA: 25 STEL: 37 (mg/m3) TWA: 10 STEL: 15 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 10 (ppm) from OSHA (PEL) [United States] TWA: 25 (mg/m3) from OSHA (PEL) [United States]3Consult local authorities for acceptable exposure limits.

9. Physical and Chemical Properties

Physical state and appearance:	Liquid.
Odor:	Vinegar-like. Sour
Taste:	Vinegar-like. Sour
Molecular Weight:	N/A
Color:	N/A
pH (1% soln/water):	5 [Acidic.]
Boiling Point:	The lowest known value is 100°C (212°F) (Water).
Melting Point:	May start to solidify at 16.6°C (61.9°F) , (Acidic acid)
Critical Temperature:	The lowest known value is 321.67°C, 611°F (Acetic acid)
Specific Gravity:	Weighted average: 1 (Water = 1)
Vapor Pressure:	The highest known value is 2.3 kPa (@ 20°C) (Water).
Vapor Density:	The highest known value is 2.07 (Air = 1) (Acetic acid).
Volatility:	N/A
Odor Threshold:	The highest known value is 0.48 ppm (Acetic acid)
Water/Oil Dist. Coeff.:	The product is more soluble in water.
Ionicity (in Water):	N/A
Dispersion Properties:	Partially dispersed in methanol, diethyl ether, n-octanol.
Solubility:	Easily soluble in water, methanol, acetone, n-octanol.

10. Stability and Reactivity Data

Stability: The product is stable.

Incompatibility with various substances:
Non-reactive with oxidizing agents, reducing agents, metals, acids, alkalis

Corrosivity:
Corrosive in presence of zinc. Slightly corrosive in presence of steel, of aluminum, of copper.
Non-corrosive in presence of glass, of stainless steel(304), of stainless steel(316).

Special Remarks on Reactivity:
Reacts violently with strong oxidizing agents, acetaldehyde, and acetic anhydride. Material can react with metals, strong bases, amines, carbonates, hydroxides, phosphates, many oxides,cyanides, sulfides, chromic acid, nitric acid, hydrogen peroxide, carbonates. ammonium nitrate, ammonium thiosulfate, chlorine trifluoride, chlorosulfonic acid, perchloric acid, permanganates, xylene, oleum, potassium hydroxide, sodium hydroxide, phosphorus isocyanate, ethylenediamine, ethylene imine. (Acetic acid).

Special Remarks on Corrosivity: N/A

Polymerization: Will not occur.

11. Toxicological Information

Routes of Entry:
Absorbed through skin. Eye contact.

Toxicity to Animals:
Acute oral toxicity (LD50): 331000 mg/kg (Rat) (Calculated value for the mixture).
Acute dermal toxicity (LD50): 106000 mg/kg (Rabbit) (Calculated value for the mixture).

Chronic Effects on Humans:
MUTAGENIC EFFECTS: Mutagenic for bacteria and/or yeast. [Acetic acid].

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant). Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation (lung sensitizer). Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs.

Special Remarks on Toxicity to Animals: N/A

Special Remarks on Chronic Effects on Humans:
May affect genetic material and may cause reproductive effects based on animal data.
No human data found. (Acetic acid)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: causes skin irritation Eyes: causes eye irritation. Inhalation: causes respiratory tract irritation. Irritates mucous membranes. Ingestion: may cause gastrointestinal tract irritation

12. Ecological Information

Ecotoxicity: N/A

BOD5 and COD: N/A

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks of Biodegradation: N/A

13. Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: N/A

Special Provisions for Transport: N/A

15. Regulatory Information

Federal and State Regulations:
New York release reporting list: Acetic acid Rhode Island RTK hazardous substances: Acetic acid Pennsylvania RTK: Acetic acid Florida: Acetic acid Minnesota: Acetic acid Massachusetts RTK: Acetic acid New Jersey: Acetic acid TSCA 8(b) inventory: Acetic acid; Water
Other Classifications:

DSCL (EEC):

R25- Toxic if swallowed. R36/38- Irritating to eyes and skin. S1/2- Keep locked up and out of the reach of children. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 2 Fire Hazard: 0 Reactivity: 0 Personal Protection: J

National Fire Protection Association (U.S.A.):
Health: 1 Flammability: 0 Reactivity: 0

Protective Equipment: Gloves. Lab coat. Splash goggles.

16. Other Information

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