



**MATERIAL SAFETY DATA SHEET (MSDS)**

**Kit Name:** VitroView™ Permanent Mounting Medium  
**SKU #:** VB-8003

**Revision Date:** 10-16-2023

**Components:**

VB-8003	Permanent Mounting Medium
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## Permanent Mounting Medium MSDS

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

#### Identification of the substance or mixture

**Product Name** Permanent Mounting Medium  
**Product number**  
**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 #
Toluene	108-88-3

### 3. Hazards Identification

#### Classification

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

Flammable liquids	Category 2
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Neurological effects, Eyes, Ears.	
Aspiration Toxicity	Category 1

#### Label Elements

Signal Word  
Danger

#### Hazard Statements

Highly flammable liquid and vapor  
May be fatal if swallowed and enters airways  
Causes skin irritation  
Causes serious eye irritation  
May cause drowsiness or dizziness  
Suspected of damaging the unborn child  
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 thoroughly after handling  
Wear eye/face protection  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Keep cool

**Response**

IF exposed or concerned: Get medical attention/advice

**Inhalation**

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

**Skin**

If skin irritation occurs: Get medical advice/attention

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

Wash contaminated clothing before reuse

**Eyes**

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

If eye irritation persists: Get medical advice/attention

**Ingestion**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Do NOT induce vomiting

**Fire**

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

**Storage**

Store locked up

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

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

WARNING. Reproductive Harm

**4. First Aid Measures**

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur. Risk of serious damage to the lungs (by aspiration).
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.
<b>Most important symptoms and effects</b>	None reasonably foreseeable. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

**5. Fire Fighting Measures**

<b>Suitable Extinguishing Media</b>	Water spray, carbon dioxide (CO <sub>2</sub> ), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
<b>Unsuitable Extinguishing Media</b>	Do not use a solid water stream as it may scatter and spread fire
<b>Flash Point</b>	4 °C / 39.2 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	480 °C / 896 °F
<b>Explosion Limits</b>	
<b>Upper</b>	7.1%
<b>Lower</b>	1.2%
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

### Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition. Runoff to sewer may create fire or explosion hazard. Do not allow run-off from fire-fighting to enter drains or water courses. Vapors may travel to source of ignition and flash back. Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars, etc.). Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air.

### Hazardous Combustion Products

Carbon oxides.

### Protective Equipment and Precautions for Firefighters

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

### NFPA

<b>Health</b>	<b>Flammability</b>	<b>Instability</b>	<b>Physical hazards</b>
3	3	0	N/A

## 6. Accidental Release Measures

**Personal Precautions** Ensure adequate ventilation. Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

**Environmental Precautions** Do not flush into surface water or sanitary sewer system.  
**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## 7. Handling and Storage

**Handling** Ensure adequate ventilation. Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Take precautionary measures against static discharges.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents.

## 8. Exposure Controls, Personal Protection

### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Toluene	TWA: 20 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 375 mg/m <sup>3</sup> Ceiling: 300 ppm (Vacated) STEL: 150 ppm (Vacated) STEL: 560 mg/m <sup>3</sup> TWA: 200 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>	TWA: 20 ppm

### Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

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

**Personal Protective Equipment**  
**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as

<b>Skin and body protection</b>	described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
<b>Hygiene Measures</b>	Handle in accordance with good industrial hygiene and safety Practice.

**9. Physical and Chemical Properties**

<b>Physical State</b>	liquid
<b>Appearance</b>	Yellow
<b>Odor</b>	aromatic
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	No information available
<b>Boiling Point/Range</b>	111 °C / 231.8 °F @ 760 mmHg
<b>Flash Point</b>	4 °C / 39.2 °F
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid,gas)</b>	No information available
<b>Flammability or explosive limits</b>	
Upper	7.1%
Lower	1.2%
<b>Vapor Pressure</b>	No information available
<b>Vapor Density</b>	Not applicable
<b>Specific Gravity</b>	3.1
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	480 °C/ 896 °F
<b>Decomposition Temperature</b>	No data available
<b>Viscosity</b>	Not applicable
<b>VOC Content (%)</b>	55%

**10. Stability and Reactivity**

<b>Reactivity Hazard:</b>	No
<b>Stability :</b>	Stable under normal conditions
<b>Conditions to avoid :</b>	Keep away from open flames, hot surfaces and sources of ignition
<b>Incompatible materials :</b>	Strong oxidizing agents
<b>Hazardous decomposition products :</b>	Carbon oxides
<b>Hazardous Polymerization :</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions :</b>	None under normal processing

**11. Toxicological Information**

**Acute Toxicity**

**Product Information**

**Oral LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Dermal LD50** Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

**Vapor LC50** Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

**Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Toluene	> 5000 mg/kg ( Rat )	LD50 = 12000 mg/kg ( Rabbit )	26700 ppm ( Rat ) 1 h

**Toxicologically Synergistic** No information available

**Products**

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

<b>Irritation</b>	Irritating to eyes and skin
<b>Sensitization</b>	No information available

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

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Toluene	108-88-3	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available  
**Reproductive Effects** No information available.  
**Developmental Effects** Possible risk of harm to the unborn child.  
**Teratogenicity** No information available.  
**STOT - single exposure** Central nervous system (CNS)  
**STOT - repeated exposure** Neurological effects Eyes Ears

**Aspiration hazard** No information available  
**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting  
**Endocrine Disruptor Information** No information available  
**Other Adverse Effects** The toxicological properties have not been fully investigated

## 12. Ecological Information

### Ecotoxicity

The product contains following substances which are hazardous for the environment. Contains a substance which is: Toxic to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Toluene	EC50: = 12.5 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: > 433 mg/L, 96h (Pseudokirchneriella subcapitata)	50-70 mg/L LC50 96 h 5-7 mg/L LC50 96 h 15-19 mg/L LC50 96 h 28 mg/L LC50 96 h 12 mg/L LC50 96 h	EC50 = 19.7 mg/L 30 min	EC50: =11.5 mg/L, 48h (Daphnia magna) EC50: 5.46 - 9.83 mg/L, 48h Static (Daphnia magna)

**Persistence and Degradability** Insoluble in water Persistence is unlikely based on information available.  
**Bioaccumulation/ Accumulation** No information available.  
**Mobility** Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its volatility.

Component	log Pow
Toluene	2.7

## 13. Disposal Information

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

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Toluene - 108-88-3	U220	-

## 14. Transport Information

DOT		
UN-No		UN1294
Proper Shipping Name		TOLUENE SOLUTION
Hazard Class		3
Packing Group		II
TDG		
UN-No		UN1294
Proper Shipping Name		TOLUENE SOLUTION
Hazard Class		3

<b>IATA</b>	Packing Group	II
	UN-No	UN1294
	Proper Shipping Name	TOLUENE SOLUTION
	Hazard Class	3
	Packing Group	II
<b>IMDG/IMO</b>		
	UN-No	UN1294
	Proper Shipping Name	TOLUENE SOLUTION
	Hazard Class	3
	Packing Group	II

## 15. Regulatory Information

### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Toluene	108-88-3	X	ACTIVE	-

### Legend:

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

X - Listed

'-' - Not Listed

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B))

TSCA 12(b) - Notices of Export      Not applicable

### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

### U.S. Federal Regulations

#### SARA 313

Component	CAS No	SARA 313 - Threshold Values %
Toluene	108-88-3	1.0

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

#### CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Toluene	X	1000 lb	X	X

#### Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Toluene	X		-

## 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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