

# SAFETY DATA SHEET

## BioRes-Medical/Wearable White & Red

### 1. Identification

<b>Product identifier</b>	<b>B9R-BIO (OOR, OOW)</b>	
<b>Other means of identification</b>		
<b>Product code</b>	RES-B9R-BIO	
<b>Recommended use</b>	Photopolymerizable ink	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	B9Creations	
<b>Address</b>	2828 Plant Street, Suite 2 Rapid City, SD 57702 United States	
<b>Telephone</b>	Phone	+1-605-716-3200
<b>Website</b>	<a href="https://www.b9c.com/">https://www.b9c.com/</a>	
<b>E-mail</b>	info@b9c.com	
<b>Emergency phone number</b>	3E Company Online	+1-866-519-4752
	+1 760-476-3962 Contract Number: 334262: (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)	

### 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Germ cell mutagenicity	Category 1B
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 2
<b>OSHA defined hazards</b>	Not classified.	

#### Label elements



<b>Signal word</b>	Danger	
<b>Hazard statement</b>	May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child.	
<b>Precautionary statement</b>		
<b>Prevention</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.	
<b>Response</b>	If exposed or concerned: Get medical advice/attention. In case of fire: Use Dry chemical, CO2, water spray or regular foam. for extinction.	
<b>Storage</b>	Store locked up.	
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.	
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.	
<b>Supplemental information</b>	46.63% of the mixture consists of component(s) of unknown acute oral toxicity. 46.63% of the mixture consists of component(s) of unknown acute dermal toxicity. 96.24% of the mixture consists of component(s) of unknown acute inhalation toxicity.	

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
2-Propenoic acid, 2-methyl-, 2-ethyl-2-[[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester		3290-92-4	5 - < 10
TRADE SECRET*		Proprietary*	1 - < 3
2-methoxy-1-methylethyl Acetate		108-65-6	< 0.2
Petroleum Solvent		64742-95-6	< 0.2
Titanium Dioxide		13463-67-7	< 0.2
Aluminium Hydroxide		21645-51-2	< 0.1
Carbon Black		1333-86-4	< 0.1
Phosphorous acid		7664-38-2	< 0.1
Stearic Acid		57-11-4	< 0.1
Other components below reportable levels			90 - 100

#### Impurities

Chemical name	Common name and synonyms	CAS number	%
Toluene		108-88-3	

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

**Composition comments** Occupational Exposure Limits for impurities are listed in Section 8.

#### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Direct contact with eyes may cause temporary irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
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**Methods and materials for containment and cleaning up**

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

**Environmental precautions**

Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage****Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection****Occupational exposure limits**

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
Carbon Black (CAS 1333-86-4)	PEL	3.5 mg/m <sup>3</sup>	
Petroleum Solvent (CAS 64742-95-6)	PEL	400 mg/m <sup>3</sup>	
		100 ppm	
Phosphorous acid (CAS 7664-38-2)	PEL	1 mg/m <sup>3</sup>	
Titanium Dioxide (CAS 13463-67-7)	PEL	15 mg/m <sup>3</sup>	Total dust.

**US. OSHA Table Z-2 (29 CFR 1910.1000)**

Impurities	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

**US. OSHA Table Z-3 (29 CFR 1910.1000)**

Components	Type	Value	Form
Aluminium Hydroxide (CAS 21645-51-2)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Aluminium Hydroxide (CAS 21645-51-2)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.
Carbon Black (CAS 1333-86-4)	TWA	3 mg/m <sup>3</sup>	Inhalable fraction.

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Phosphorous acid (CAS 7664-38-2)	STEL	3 mg/m3	
	TWA	1 mg/m3	
Stearic Acid (CAS 57-11-4)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Inhalable fraction.
Titanium Dioxide (CAS 13463-67-7)	TWA	10 mg/m3	
<b>Impurities</b>	<b>Type</b>	<b>Value</b>	
Toluene (CAS 108-88-3)	TWA	20 ppm	

**US. NIOSH: Pocket Guide to Chemical Hazards**

Components	Type	Value
Carbon Black (CAS 1333-86-4)	TWA	0.1 mg/m3
Petroleum Solvent (CAS 64742-95-6)	TWA	400 mg/m3
		100 ppm
Phosphorous acid (CAS 7664-38-2)	STEL	3 mg/m3
	TWA	1 mg/m3
<b>Impurities</b>	<b>Type</b>	<b>Value</b>
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

**US. Workplace Environmental Exposure Level (WEEL) Guides**

Components	Type	Value
2-methoxy-1-methylethyl Acetate (CAS 108-65-6)	TWA	50 ppm
2-Propenoic acid, 2-methyl-, 2-ethyl-2-[[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (CAS 3290-92-4)	TWA	1 mg/m3

**Biological limit values****ACGIH Biological Exposure Indices**

Impurities	Value	Determinant	Specimen	Sampling Time
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

\* - For sampling details, please see the source document.

**Exposure guidelines****US - California OELs: Skin designation**

2-methoxy-1-methylethyl Acetate (CAS 108-65-6)  
Toluene (CAS 108-88-3)

Can be absorbed through the skin.  
Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**

Toluene (CAS 108-88-3)

Skin designation applies.

**US WEEL Guides: Skin designation**

2-Propenoic acid, 2-methyl-, 2-ethyl-2-[[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (CAS 3290-92-4)

Can be absorbed through the skin.

<b>Appropriate engineering controls</b>	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	If contact is likely, safety glasses with side shields are recommended.
<b>Skin protection</b>	
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Other</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	Red or White, Translucent to opaque

**Odor** Acrylic

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** > 203.0 °F (> 95.0 °C) Closed Cup

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not applicable.

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** Not available.

### Solubility(ies)

**Solubility (water)** Not available.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** 1680 cP

**Viscosity temperature** 77 °F (25 °C)

### Other information

**Density** 1.13 g/cm<sup>3</sup> estimated

**Explosive properties** Not explosive.

**Flammability class** Combustible IIIB estimated

**Oxidizing properties** Not oxidizing.

Specific gravity 1.116  
 VOC 9.31 lb/gal

## 10. Stability and reactivity

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.  
**Chemical stability** Material is stable under normal conditions.  
**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.  
**Conditions to avoid** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.  
**Incompatible materials** Strong oxidizing agents.  
**Hazardous decomposition products** No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

**Inhalation** Prolonged inhalation may be harmful.  
**Skin contact** No adverse effects due to skin contact are expected.  
**Eye contact** Direct contact with eyes may cause temporary irritation.  
**Ingestion** Expected to be a low ingestion hazard.

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

**Acute toxicity** Not known.

Components	Species	Test Results
Aluminium Hydroxide (CAS 21645-51-2)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	> 5000 mg/kg
Carbon Black (CAS 1333-86-4)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	> 8000 mg/kg
Petroleum Solvent (CAS 64742-95-6)		
<b>Acute</b>		
<b>Inhalation</b>		
LC50	Rat	61 mg/l, 4 Hours
Phosphorous acid (CAS 7664-38-2)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	2740 mg/kg
<b>Oral</b>		
LD50	Rat	1530 mg/kg
Stearic Acid (CAS 57-11-4)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	4.6 g/kg
Impurities	Species	Test Results
Toluene (CAS 108-88-3)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	Rabbit	12120 mg/kg

Impurities	Species	Test Results
<b>Oral</b> LD50	Rat	2.6 g/kg
<b>Skin corrosion/irritation</b>	Prolonged skin contact may cause temporary irritation.	
<b>Serious eye damage/eye irritation</b>	Direct contact with eyes may cause temporary irritation.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.	
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>Germ cell mutagenicity</b>	May cause genetic defects.	
<b>Carcinogenicity</b>	May cause cancer.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Carbon Black (CAS 1333-86-4)	2B Possibly carcinogenic to humans.	
Titanium Dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.	
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.	
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)</b>		
Not regulated.		
<b>US. National Toxicology Program (NTP) Report on Carcinogens</b>		
Not listed.		
<b>Reproductive toxicity</b>	Suspected of damaging fertility or the unborn child.	
<b>Specific target organ toxicity - single exposure</b>	Not classified.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	
<b>Chronic effects</b>	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.	

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Petroleum Solvent (CAS 64742-95-6)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Daphnia pulex)
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		8.8 mg/l, 96 hours
		8.8 mg/l, 96 hours
Titanium Dioxide (CAS 13463-67-7)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Daphnia magna)
Fish	LC50	Mummichog (Fundulus heteroclitus)
		> 1000 mg/l, 48 hours
		> 1000 mg/l, 96 hours
Impurities	Species	Test Results
Toluene (CAS 108-88-3)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Daphnia magna)
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)
		5.46 - 9.83 mg/l, 48 hours
		8.11 mg/l, 96 hours

**Persistence and degradability** No data is available on the degradability of any ingredients in the mixture.

### Bioaccumulative potential

#### Partition coefficient n-octanol / water (log Kow)

Stearic Acid 8.23

**Mobility in soil** No data available.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

#### US RCRA Hazardous Waste U List: Reference

Toluene (CAS 108-88-3) U220

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

#### DOT

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

### 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

Phosphorous acid (CAS 7664-38-2) Listed.

Toluene (CAS 108-88-3) Listed.

#### SARA 304 Emergency release notification

Not regulated.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

##### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Acute toxicity (any route of exposure)  
Germ cell mutagenicity  
Carcinogenicity  
Reproductive toxicity

##### SARA 313 (TRI reporting)

Not regulated.

#### Other federal regulations

##### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Toluene (CAS 108-88-3)

##### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.



**Safe Drinking Water Act (SDWA)** Not regulated.

**Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number**

Toluene (CAS 108-88-3) 6594

**Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))**

Toluene (CAS 108-88-3) 35 %WV

**DEA Exempt Chemical Mixtures Code Number**

Toluene (CAS 108-88-3) 594

**FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace**

Phosphorous acid (CAS 7664-38-2) High priority

**US state regulations**

**California Proposition 65**



**WARNING:** This product can expose you to chemicals including Titanium Dioxide, which is known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Carbon Black (CAS 1333-86-4) Listed: February 21, 2003

Titanium Dioxide (CAS 13463-67-7) Listed: September 2, 2011

**California Proposition 65 - CRT: Listed date/Developmental toxin**

Toluene (CAS 108-88-3) Listed: January 1, 1991

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Carbon Black (CAS 1333-86-4)

Petroleum Solvent (CAS 64742-95-6)

Phosphorous acid (CAS 7664-38-2)

Titanium Dioxide (CAS 13463-67-7)

Toluene (CAS 108-88-3)

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

**Issue date** 08-29-2019

**Version #** 01

**NFPA ratings** Health: 1  
Flammability: 0  
Instability: 0

**Disclaimer** Not available.