

## BBC Biochemical

## MATERIAL SAFETY DATA SHEET

**Section 1. Chemical Product and Company Information**

<b>Common Name:</b> Davidson's Fixative	<b>Code:</b> 0230
<b>Supplier:</b> BBC Biochemical 8510 Cedarhome Dr. Stanwood, WA 98292	<b>MSDS#:</b> 0230
<b>Synonym:</b> None	<b>Validation Date:</b> 9-1-07
<b>Trade Name:</b> None	<b>Print Date:</b> 9-1-07
<b>Material Uses:</b> Tissue Fixation	<b>Responsible Name:</b> Dr. B
<b>Manufacturer:</b> BBC Biochemical 8510 Cedarhome Dr. NW Stanwood, WA 98292 1-800-635-4477	<b>In Case of Emergency: 1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477</b>

**Section 2. Composition and Information on Ingredients**

Name	CAS#	% by Weight	Exposure Limits
1) Ethyl Alcohol	64-17-5	Percentage composition is being withheld as a Trade Secret. The components listed above have been associated with one or more	The components listed above have been associated with one or more immediate and/or delayed (*) health hazards. Risk of damage and effects depends upon duration and level of exposure.
2) Methyl Alcohol	67-56-1		
3) Isopropyl Alcohol	67-63-0		
4) Methyl Isobutyl Ketone	108-10-1		
5) Formaldehyde 37%	50-00-0		
6) GAA	64-19-7		

**Section 3. Hazards Identification**

<b>Physical State and Appearance</b>	Clear colorless liquid.
<b>Emergency Overview</b>	Not available.
<b>Routes of Entry</b>	Harmful if inhaled. Can cause central nervous system depression. Causes chemical burns to eyes. Skin irritant. May be harmful if absorbed through skin. Alcohol exposure enhances toxicity hazards of other materials, such as chlorinated hydrocarbon solvents or drugs.
<b>Potential Acute Health Effects</b>	<p><b>Eyes</b> Methanol (67-56-1) causes chemical burns. Can cause central nervous system depression. Signs and symptoms may include headache, dizziness, nausea, vomiting, unconsciousness and asphyxiation. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.</p> <p><b>Skin</b> May be harmful if absorbed through skin.</p> <p><b>Inhalation</b> Harmful if inhaled. Can cause irritation of nose, throat and lungs. Can cause central nervous system depression.</p> <p><b>Ingestion</b> May be harmful if swallowed. If accidentally swallowed, burns to mucous membranes, esophagus or GI tract may result. Ingestion may cause blindness. Can cause central nervous system depression.</p>
<b>Potential Chronic Health Effects</b>	<p>Formaldehyde (50-00-0) POTENTIAL CANCER HAZARD Based on animal data and limited epidemiological evidence, NTP and IARC have listed formaldehyde as a probable human carcinogen. May cause allergic skin reaction. Some reports suggest that formaldehyde may cause respiratory sensitization, such as asthma, and that pre-existing respiratory and skin disorders may be aggravated by exposure. OSHA has identified 0.5ppm as the 'Action Level', 29 CFR 1910.1048. Please refer to the OSHA Standard for guidance applicable to your operations.</p> <p>Methanol (67-56-1) Possible reproductive disorders from prolonged exposure. May cause lung damage based on animal data. May cause liver and kidney damage based on animal data. May cause blindness if swallowed. As of the revision date, this material has not been listed by NTP, classified by IARC nor regulated by OSHA as a carcinogen.</p>
<b>Medical Conditions Aggravated by Overexposure/Overexposure/Signs/Symptoms</b>	Pre-existing respiratory disorders may be aggravated by exposure.

**Section 4. First Aid Measures**

<b>Eye Contact</b>	Immediately flush eyes with large amounts of water for at least 15 minutes. Eyelids should be held apart during irrigation to allow water to contact entire surface of eyes and lids. Get medical attention immediately.
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<b>Skin Contact</b>	Immediately remove all contaminated clothing, including shoes. Wash the affected area of the body with soap or mild detergent and large quantities of water for at least 20 minutes. Contact physician if irritation persists. If there are chemical burns, cover the area with sterile, dry dressings and get medical attention immediately.
<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Get medical attention immediately.
<b>Ingestion</b>	If accidentally swallowed, dilute by drinking large amounts of water. Immediately contact poison control center or hospital emergency room for any additional treatment directions.
<b>Notes to Physician</b>	Not available.

### Section 5. Fire Fighting Measures

<b>Flammability of the Product</b>	Not available.
<b>Auto-ignition Temperature</b>	Not available.
<b>Flash Points</b>	Not available.
<b>Flammable Limits</b>	Not available.
<b>Products of Combustion</b>	Not available.
<b>Fire Hazards in Presence Of Various Substances</b>	Not available.
<b>Explosion Hazards in Presence of Various Substances</b>	Not available.
<b>Fire Fighting Media and Instructions</b>	Dry-chemical, carbon dioxide, alcohol foam. Use water spray to cool fire-exposed metal containers, to dilute and flush spills, to suppress vapors, and to reduce fire intensity.
<b>Protective Clothing (Fire)</b>	
<b>Special Remarks on Fire Hazards</b>	
<b>Special Remarks on Explosion Hazards</b>	

### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Always wear appropriate protective equipment as listed in section VIII. Eliminate all ignition sources and ventilate the area to reduce the potential for exposure, fire and explosion. Recover as much material as possible. Follow all emergency notification and reporting regulations.
<b>Large Spill and Leak</b>	

### Section 7. Handling and Storage

<b>Handling</b>	Handle in accordance with good laboratory hygiene and safety practices. Wash thoroughly after handling. Do not breathe vapor. Use with adequate ventilation. Avoid contact with skin and clothing. Do not get in eyes.
<b>Storage</b>	Formaldehyde solutions will precipitate paraformaldehyde if stored below room temperature.

### Section 8. Exposure Controls / Personal Protection

<b>Engineering Controls</b>	The following exposure controls may be used to effectively minimize employee exposure: local exhaust ventilation, enclosed system design, process isolation, personal protective equipment and prudent work practices. These may not necessarily address all issues pertaining to your operation. Consult the experts of your choice to determine if your programs are adequate.
<b>Personal Protection</b>	
<b>Eyes</b>	Safety glasses with side shields.
<b>Body</b>	Impervious clothing.
<b>Respiratory</b>	Where air contaminants can exceed acceptable criteria, use NIOSH/MSHA approved full-face respirator or equivalent.
<b>Hands</b>	Latex, Nitrile or equivalent gloves.
<b>Feet</b>	Impervious footwear.
<b>Personal Protection in Case of a Large Spill</b>	Safety glasses with side shields, impervious clothing and shoes, gloves and full-face respirator when necessary.
<b>Product Name</b>	<b>Exposure Limits</b>
1) Formaldehyde 50-00-0	ACGIH TLV: 0.3ppm (0.37mg/m <sup>3</sup> ) Ceiling OSHA PEL: 0.75ppm (0.9mg/m <sup>3</sup> ) TWA; 2ppm (2.5mg/m <sup>3</sup> ) 15 min STEL
2) Methanol 67-56-1	ACGIH TLV: Skin 200ppm (262mg/m <sup>3</sup> ) TWA; 250ppm (328mg/m <sup>3</sup> ) STEL OSHA PEL: 200ppm (260mg/m <sup>3</sup> ) TWA REMANDED PEL: Skin 200ppm (260mg/m <sup>3</sup> ) TWA; 250ppm (310mg/m <sup>3</sup> ) STEL OSHA 1989 PEL remanded, but in effect in some states.
<b>Consult Local authorities before acceptable exposure limits.</b>	

### Section 9. Physical and Chemical Properties

<b>Physical State and Appearance</b>	Clear colorless liquid.	<b>Odor:</b>	Pungent, alcoholic.
<b>Molecular Weight</b>	Not applicable.	<b>Taste:</b>	Not available.
<b>Molecular Formula</b>	Not applicable.	<b>Color:</b>	Clear colorless.
<b>pH (1%/Water)</b>	Not applicable.		
<b>Boiling/Condensation Point</b>	Not applicable.		
<b>Melting/Freezing Point</b>	Not applicable.		
<b>Critical Temperature</b>	Not applicable.		
<b>Specific Gravity</b>	Not applicable.		
<b>Vapor Pressure</b>	Not applicable.		
<b>Vapor Density</b>	Not applicable.		
<b>Volatility</b>	Not applicable.		
<b>Odor Threshold</b>	Not applicable.		
<b>Evaporation Rate</b>	Not applicable.		
<b>VOC</b>	Not available.		
<b>Viscosity</b>	Not available.		
<b>Ionicity (in water)</b>	Not available.		
<b>Dispersion Properties</b>	Not available.		
<b>Solubility</b>	Not available.		
<b>Physical Chemical Comments</b>	Not available.		

### Section 10. Stability and Reactivity

<b>Stability and Reactivity</b>	Normally stable, but may further react at high temperatures to form methanol, formic acid or methylals. Low temperatures causes polymerization of formaldehyde to paraformaldehyde. Reacts with many compounds.
<b>Conditions of Instability</b>	Not available.
<b>Incompatibility with Various Substances</b>	Reactions with phenol, strong acids or alkalis may be violent. Reaction with hydrochloric acid may form bis-chloromethyl ether, and OSHA regulated carcinogen. Decomposition products may include CO, CO <sub>2</sub> . Hazardous polymerization will not occur.
<b>Hazardous Decomposition Products</b>	Not available.
<b>Hazardous Polymerization</b>	Not available.

### Section 11. Toxicological Information

<b>Toxicity to Animals</b>	Formaldehyde 50-00-0 LD50: orl-rat=0.8g/kg (Merck) LC50: rat=203mg/m <sup>3</sup> (RTECS) Methanol 67-56-1 LD50: orl-rat=5628mg/kg; skn-rbt=20g/kg (Sax) LC50: rat=64000ppm/4H (Sax)
<b>Chronic Effects on Humans</b>	
<b>Other Toxic Effects on Humans</b>	
<b>Special Remarks on Toxicity to Animals</b>	Not available.
<b>Special Remarks on Chronic Effects on Humans</b>	Not available.
<b>Special Remarks on Other Toxic Effects on Humans</b>	Not available.

### Section 12. Ecological Information

<b>Ecotoxicity</b>	Formaldehyde is highly toxic to algae, protozoa and other unicellular organisms and slightly toxic to fish. In the atmosphere the material is rapidly degraded by photolysis and photooxidation. Formaldehyde is mobile in the soil. In water or soil, formaldehyde is biodegraded in a few days. Experiments performed on a variety of fish and shrimp show no bioconcentration of formaldehyde.
<b>BODS and COD</b>	Not available.

**Biodegradable/OEDC Mobility** Not available.  
Not available.

**Toxicity of the Products of Biodegradation** Not available.

**Special Remarks on The Products of Biodegradation** Not available.

### Section 13. Disposal Considerations

**Waste Information** Dispose of according to local, state/provincial, and federal requirements.

**Waste Stream**

Consult your local or regional authorities.

### Section 14. Transport Information

**DOT Classification** Ethanol solutions; 3; UN 1170; III; Flammable Liquid

**Marine Pollutant** Not available.

**Hazardous Substances Reportable Quantity** Not available.

**Special Provisions for Transport** SARA Title III Section 311/312  
Fire Hazard  
Immediate Health Hazard  
Delayed Health Hazard  
SARA Title III Section 313 and 40 CFR Part 372  
This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and Subpart C-Supplier Notification Requirement of 40 CFR Part 372.  
Formaldehyde 50-00-0  
Methanol 67-56-1

**TDG Classification** Not controlled under TDG (Canada).

**ADR/RID Classification** Not controlled under ADR (Europe).

**IMO/IMDG Classification** Not controlled under IMDG.

**ICAO/IATA Classification** Not controlled under IATA.

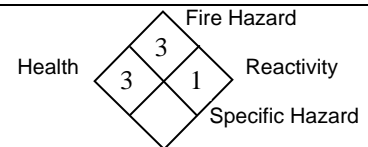
### Section 15. Other Information

**Label requirements**

**Hazardous Material Information System (U.S.A.)**

<b>Health</b>	3
<b>Fire Hazard</b>	3
<b>Reactivity</b>	1
<b>Personal Protection</b>	

**National Fire Protection Association (U.S.A.)**



**References**

**Other Special Considerations**

**Notice to Reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.