

## BBC Biochemical

## MATERIAL SAFETY DATA SHEET

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

Common Name: Acid Wash•Cyto™	Code: 3815
Supplier: BBC Biochemical	MSDS#: 3815
Synonym: None	Validation Date: 9-1-07
Trade Name:	Print Date: 9-1-07
Material Uses:	Responsible Name: Dr. B
Manufacturer: BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 1-800-635-4477	In Case of Emergency: 1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477

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

Name	CAS#	% by Weight	Exposure Limits
1) Water	1737-87-1	Percentage composition withheld as trade secret.	
2) Selected Buffers	N/A		
3)			
4)			

**Section 3. Hazards Identification**

Physical State and Appearance	Clear aqueous solution.
Emergency Overview	Not available.
Routes of Entry	Eye contact, inhalation, ingestion, skin contact.
Potential Acute Health Effects	
Eyes	May cause irritation with redness and pain.
Skin	May cause irritation with redness and pain.
Inhalation	May cause irritation of the mucous membranes with sore throat and coughing.
Ingestion	Irritant to the gastrointestinal system.
Potential Chronic Health Effects	
Medical Conditions Aggravated by Overexposure/Overexposure/Signs/Symptoms	N/A

**Section 4. First Aid Measures**

Eye Contact	Immediately flush eyes thoroughly with water for at least 15 minutes.
Skin Contact	Wash thoroughly with soap and water.
Inhalation	Remove to fresh air, give artificial respiration if breathing has stopped.
Ingestion	Get immediate medical attention; if conscious, give water freely. Induce vomiting.
Notes to Physician	Not available.

**Section 5. Fire Fighting Measures**

Flammability of the Product	Not available.
Auto-ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Not available.
Fire Hazards in Presence Of Various Substances	Not available.
Explosion Hazards in Presence of Various	Not available.

**Substances****Fire Fighting Media and Instructions** Wear self-contained breathing apparatus.**Protective Clothing (Fire)****Special Remarks on Fire Hazards** No unusual fire and/or explosion hazards indicated.**Special Remarks on Explosion Hazards****Section 6. Accidental Release Measures****Small Spill and Leak** Evacuate the area of all unnecessary personnel. Wear suitable protective equipment listed under section VIII. Contain the release and eliminate its source, if this can be done without risk. Take up and containerize for proper disposal as described under Waste Disposal Method. Comply with Federal, State, and Local regulations on reporting releases.**Large Spill and Leak** Same as above.**Section 7, Handling and Storage****Handling** Avoid prolonged, or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be readily available.**Storage** Keep container closed.**Section 8. Exposure Controls / Personal Protection****Engineering Controls****Personal Protection**

- Eyes** Safety glasses with side shields should be worn at all times.
- Body** Impervious protective clothing should be worn to prevent skin contact.
- Respiratory** A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.
- Hands** Protective gloves, rubber or equivalent, should be worn to prevent skin contact.
- Feet** Impervious shoes should be worn to prevent skin contact.

**Personal Protection in Case of a Large Spill** Safety glasses with side shields, impervious clothing and footwear, protective gloves, respirator if necessary.**Product Name** **Exposure Limits**

- 1)
- 2)
- 3)

Consult Local authorities before acceptable exposure limits.

**Section 9. Physical and Chemical Properties****Physical State and Appearance** Colorless liquid. **Odor:** Odorless.**Molecular Weight** Not applicable. **Taste:** Not available.**Molecular Formula** Not applicable. **Color:** Colorless.**pH (1%/Water)** Not applicable.**Boiling/Condensation Point** 100 C.**Melting/Freezing Point** Not applicable.**Critical Temperature** Not applicable.**Specific Gravity** Not determined.**Vapor Pressure** Not determined.**Vapor Density** Not determined.**Volatility** 100% volatile.**Odor Threshold** Not applicable.**Evaporation Rate** Not determined.**VOC** Not available.**Viscosity** Not available.**Ionicity (in water)** Not available.**Dispersion Properties** Not available.**Solubility** Soluble in water.**Physical Chemical Comments** Not available.

**Section 10. Stability and Reactivity**

Stability and Reactivity	Stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Not available.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Does not occur.

**Section 11. Toxicological Information**

Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	
Other Toxic Effects on Humans	
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on Other Toxic Effects on Humans	Not available.

**Section 12. Ecological Information**

Ecotoxicity	Not available.
BODS and COD	Not available.
Biodegradable/OEDC Mobility	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	Not available.
Waste Stream	Not available.
Consult your local or regional authorities.	

**Section 14. Transport Information**

DOT Classification	
Marine Pollutant	Not available.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	Not applicable.
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**

<b>Hazardous Material Information System (U.S.A.)</b>	<b>Health</b>	1	<b>National Fire Protection Association (U.S.A.)</b>	
	<b>Fire Hazard</b>	0		
	<b>Reactivity</b>	0		
	<b>Personal Protection</b>			

**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.*

# BBC Biochemical MATERIAL SAFETY DATA SHEET

## Section 1. Chemical Product and Company Information

Common Name: Blueing Solution Cyto™	Code: 3900, 3910
Supplier: BBC Biochemical	MSDS#: 3900
Synonym: None	Validation Date: 9-1-07
Trade Name: None	Print Date: 9-1-07
Material Uses: Stains	Responsible Name: Dr. James Biesecker
Manufacturer: BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 1-800-635-4477	In Case of Emergency: 1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477

## Section 2. Composition and Information on Ingredients

Name	CAS#	% by Weight	Exposure Limits
1) Water	7732-18-5	Percent composition withheld as a trade secret.	Data no available.
2) Ammonium Hydroxide	1336-21-6		
3)			
4)			

## Section 3. Hazards Identification

Physical State and Appearance	Colorless liquid, sharp pungent odor.
Emergency Overview	Not available.
Routes of Entry	Eye contact, inhalation, ingestion, skin contact.
Potential Acute Health Effects	
Eyes	May cause irritation with redness, pain, and possibly corneal damage.
Skin	May cause irritation with redness and pain.
Inhalation	May cause irritation of the mucous membranes with sore throat and coughing.
Ingestion	Irritant to the gastrointestinal system.
Potential Chronic Health Effects	
Medical Conditions Aggravated by Overexposure/Overexposure/Signs/Symptoms	Corneal disease, glaucoma, or chronic respiratory diseases.

## Section 4. First Aid Measures

Eye Contact	Immediately flush eyes thoroughly with water for at least 15 minutes.
Skin Contact	Wash thoroughly with soap and water.
Inhalation	Remove to fresh air, give artificial respiration if breathing has stopped.
Ingestion	Get immediate medical attention; if conscious, give water freely. Induce vomiting.
Notes to Physician	Not available.

## Section 5. Fire Fighting Measures

Flammability of the Product	Not available.
Auto-ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Not available.
Fire Hazards in Presence Of Various Substances	None indicated.
Explosion Hazards in Presence of Various	None indicated.

**Substances****Fire Fighting Media and Instructions** Wear self-contained breathing apparatus.**Protective Clothing (Fire)****Special Remarks on Fire Hazards****Special Remarks on Explosion Hazards****Section 6. Accidental Release Measures****Small Spill and Leak** Evacuate the area of all unnecessary personnel. Wear suitable protective equipment listed under section VIII. Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards. Contain the release and eliminate its source, if this can be done without risk. Take up and containerize for proper disposal as described under Waste Disposal Method. Comply with Federal, State, and local regulations on reporting releases.**Large Spill and Leak** Same as above.**Section 7, Handling and Storage****Handling** Avoid prolonged, or repeated skin contact. Do not get in eyes. Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be available.**Storage** Keep container closed.**Section 8. Exposure Controls / Personal Protection****Engineering Controls****Personal Protection**

- Eyes** Safety glasses with side shields should be worn at all times.
- Body** Impervious clothing should be worn to prevent skin contact.
- Respiratory** Any dust or mist respirator. If workplace exposure limit(s) of product or any component is exceeded, a NIOSH/MSHA approved air respirator is advised in absence of proper environmental control. Material should be handled or transferred in an approved fume hood or with adequate ventilation.
- Hands** Rubber or equivalent gloves should be worn to prevent skin contact.
- Feet** Data not available.

**Personal Protection in****Case of a Large Spill** Impervious clothing, rubber or equivalent gloves, safety glasses with side shields and respirator.**Product Name Exposure Limits**

- 1) Data not available.
- 2)
- 3)

**Consult Local authorities before acceptable exposure limits.****Section 9. Physical and Chemical Properties****Physical State and Appearance** Colorless liquid. **Odor:** Pungent.**Molecular Weight** Not applicable. **Taste:** Not available.**Molecular Formula** Not applicable. **Color:** Colorless.**pH (1%/Water)** Not applicable.**Boiling/Condensation Point** 100C.**Melting/Freezing Point** Not applicable.**Critical Temperature** Not applicable.**Specific Gravity** Not applicable.**Vapor Pressure** Not applicable.**Vapor Density** Not applicable.**Volatility** Not applicable.**Odor Threshold** Not applicable.**Evaporation Rate** Not applicable.**VOC** Not available.**Viscosity** Not available.**Ionicity (in water)** Not available.**Dispersion Properties** Not available.**Solubility** Soluble in water.**Physical Chemical Comments** Not available.

**Section 10. Stability and Reactivity**

Stability and Reactivity	Stable.
Conditions of Instability	None.
Incompatibility with Various Substances	Acids, corrosive to metals and alloys.
Hazardous Decomposition Products	Corrosive vapors of ammonia and toxic oxides or nitrogen.
Hazardous Polymerization	Does not occur.

**Section 11. Toxicological Information**

Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	
Other Toxic Effects on Humans	
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on Other Toxic Effects on Humans	Not available.

**Section 12. Ecological Information**

Ecotoxicity	Not available.
BODS and COD	Not available.
Biodegradable/OEDC	Not available.
Mobility	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	Not available.
Waste Stream	Not available.
Consult your local or regional authorities. Always contact a permitted waste disposer (TSD) to assure compliance with all current local, state and federal regulations.	

**Section 14. Transport Information**

DOT Classification	
Marine Pollutant	Not available.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	Not applicable.
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.)	Health	0	National Fire Protection Association (U.S.A.)
	Fire Hazard	0	
	Reactivity	0	
	Personal Protection		

**References**

**Other Special  
Considerations**

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# BBC Biochemical MATERIAL SAFETY DATA SHEET

## Section 1. Chemical Product and Company Information

Common Name: Cyto Hematoxylin™	Code: 3550
Supplier: BBC Biochemical	MSDS#: 3550, 3530
Synonym: Harris Hematoxylin w/o Mercuric Chloride	Validation Date: 9-1-07
Trade Name: Not available.	Print Date: 9-1-07
Material Uses: Not available.	Responsible Name: Dr. B
Manufacturer: BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 1-800-635-4477	In Case of Emergency: 1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477

## Section 2. Composition and Information on Ingredients

Name	CAS#	% by Weight	Exposure Limits
1) Water	7732-18-5	Not available.	Not available.
2) Hematoxylin	517-28-2	Not available.	Not available.
3) Aluminum Ammonium Sulfate	7784-26-1	Not available.	Not available.
4) Ethylene Glycol	107-21-1	Not available.	Not available.
5) Glacial Acetic Acid	64-19-7	Not available.	Not available.
6) Dimethyl Sulfoxide	67-68-5	Not available.	Not available.

## Section 3. Hazards Identification

Physical State and Appearance	Deep purple liquid.
Emergency Overview	Not available.
Routes of Entry	Eye contact, inhalation, skin contact.
Potential Acute Health Effects	
Eyes	Irritation, may cause permanent damage.
Skin	Irritation.
Inhalation	Irritation to nose, throat, mucous membranes, and respiratory system.
Ingestion	May be harmful if swallowed.
Potential Chronic Health Effects	Not available.
Medical Conditions Aggravated by Overexposure	Not available.
Overexposure/Signs/Symptoms	Not available.

## Section 4. First Aid Measures

Eye Contact	Immediately flush with water for at least 15 minutes.
Skin Contact	Wash thoroughly with soap and water.
Inhalation	Remove to fresh air; give artificial respiration if breathing has stopped.
Ingestion	If conscious, give water freely, get immediate medical attention.
Notes to Physician	Not available.

## Section 5. Fire Fighting Measures

Flammability of the Product	Not available.
Auto-ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Not available.
Fire Hazards in Presence Of Various Substances	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; water spray to cool fire-exposed and disperse vapors.
<b>Protective Clothing (Fire)</b>	Wear self-contained breathing apparatus and protective clothing.
<b>Special Remarks on Fire Hazards</b>	Thermal decomposition produces toxic fumes.
<b>Special Remarks on Explosion Hazards</b>	Not available.

### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Evacuate the area of all unnecessary personnel. Wear suitable protective equipment listed under section 8. Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards. Contain the release and eliminate it's source, if this can be done without risk. Take up and containerize for proper disposal as described under Waste Disposal Method. Comply with Federal, State, and local regulations on reporting releases.
<b>Large Spill and Leak</b>	Same as above.

### Section 7, Handling and Storage

<b>Handling</b>	Do not breath vapor or mist. Do not get in eyes, on skin, or on clothing.
<b>Storage</b>	Keep container tightly closed. Store away from heat, sparks, open flame.

### Section 8. Exposure Controls / Personal Protection

<b>Engineering Controls</b>	
<b>Personal Protection</b>	
<b>Eyes</b>	Safety glasses with side shields must be worn at all times.
<b>Body</b>	Impervious protective clothing must be worn to prevent skin contact.
<b>Respiratory</b>	If workplace exposure limit(s) of product or any component is exceeded, a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. Engineering and/or administrative controls should be implemented to reduce exposure.
<b>Hands</b>	Protective gloves: Neoprene, Nitrile or equivalent.
<b>Feet</b>	Not available.
<b>Personal Protection in Case of a Large Spill</b>	Same section 6.
<b>Product Name</b>	<b>Exposure Limits</b>
1)	
2)	
3)	
<b>Consult Local authorities before acceptable exposure limits.</b>	

### Section 9. Physical and Chemical Properties

<b>Physical State and Appearance</b>	Deep Purple Liquid.	<b>Odor:</b>	Not available.
<b>Molecular Weight</b>	Not applicable.	<b>Taste:</b>	Not available.
<b>Molecular Formula</b>	Not applicable.	<b>Color:</b>	Deep purple.
<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>	Soluble in water.		
<b>Physical Chemical Comments</b>	Not available.		

**Section 10. Stability and Reactivity**

Stability and Reactivity	Stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Not available.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Not available.

**Section 11. Toxicological Information**

Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	
Other Toxic Effects on Humans	
Special Remarks on Toxicity to Animals	Tests on laboratory animals indicate some material may produce adverse mutagenic and reproductive effects. Some material may cause tumors.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on Other Toxic Effects on Humans	Not available.

**Section 12. Ecological Information**

Ecotoxicity	Not available.
BODS and COD	Not available.
Biodegradable/OEDC Mobility	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	Not available.
Waste Stream	Not available.
Consult your local or regional authorities.	

**Section 14. Transport Information**

DOT Classification	
Marine Pollutant	Not available.
Hazardous Substances Reportable Quantity	Not available.
Special Provisions for Transport	Not applicable.
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.)	Health	1	National Fire Protection Association (U.S.A.)
	Fire Hazard	1	
	Reactivity	1	
	Personal Protection		

**References**

**Other Special  
Considerations**

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# BBC Biochemical MATERIAL SAFETY DATA SHEET

## Section 1. Chemical Product and Company Information

Common Name: EA-50 Gills Modified	Code: 4672, 4676, 4678
Supplier: BBC Biochemical	MSDS#: 4672, 4676, 4678
Synonym: Not Available	Validation Date: 9-1-07
Trade Name: Not Available	Print Date: 9-1-07
Material Uses: Tissue Staining	Responsible Name: Dr. B
Manufacturer: BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 1-800-635-4477	In Case of Emergency: 1-800-424-9300 Chemtrec USA 1-202-483-7616 Chemtrec Intrl 1-800-635-4477

## Section 2. Composition and Information on Ingredients

Name	CAS#	% by Weight	OSHA/PEL	OSHA/STEL
1) Water	1737-87-1	N/A		
2) Denatured Ethanol Mixture				
Ethyl Alcohol	64-17-5	N/A	1000 ppm	None established
Methyl Alcohol	67-56-1	N/A	200 ppm	250 ppm
Denaturing Alcohol	67-63-0	N/A	400 ppm	500 ppm
3) Selected Stains	N/A	N/A		
4) Glacial Acetic Acid	64-19-7	N/A	10 ppm	15 ppm

## Section 3. Hazards Identification

Physical State and Appearance	Brown liquid.
Emergency Overview	Not available.
Routes of Entry	May be harmful by inhalation, ingestion or skin absorption.
Potential Acute Health Effects	
Eyes	Slightly hazardous in case of eye contact (irritant).
Skin	Slightly hazardous in case of skin contact (irritant).
Inhalation	May cause dizziness, headache, nausea, and narcosis.
Ingestion	May cause blindness, nausea, damage to gastrointestinal tract, liver, kidneys, and cardiovascular system.
Potential Chronic Health Effects	Not Available.
Medical Conditions Aggravated by Overexposure	Repeated or prolonged exposure is not known to aggravate medical condition.
Overexposure/Signs/Symptoms	Loss of appetite, inability to concentrate. Headache, irritation of eyes, nose, throat.

## Section 4. First Aid Measures

Eye Contact	Immediately flush eyes with copious amounts of water for at least 15 minutes.
Skin Contact	Immediately wash skin with soap and copious amounts of water.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen.
Ingestion	Wash out mouth with water provided person is conscious. Loosen clothing such as a collar, tie, belt or waistband. Induce vomiting. Provided person is conscious, have victim drink several glasses of water or milk.
Notes to Physician	Not available.

## Section 5. Fire Fighting Measures

Flammability of the Product	Flammable.
Auto-ignition Temperature	362.78°C (685°F)
Flash Points	CLOSED CUP: 12.778°C (55°F)
Flammable Limits	The greatest known range is LOWER: 3.3% UPPER: 19% (Ethyl Alcohol)
Products of Combustion	These products are carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO, NO <sub>2</sub> ...), sulfur oxides (SO <sub>2</sub> , SO <sub>3</sub> ...). Some metallic oxides.

<b>Fire Hazards in Presence Of Various Substances</b>	Not available.
<b>Explosion Hazards in Presence of Various Substances</b>	Vapor may travel considerable distance to source of ignition and flash back.
<b>Fire Fighting Media and Instructions</b>	Carbon dioxide, dry chemical powder or appropriate foam. Water spray.
<b>Protective Clothing (Fire)</b>	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
<b>Special Remarks on Fire Hazards</b>	Emits toxic fumes under fire conditions.
<b>Special Remarks on Explosion Hazards</b>	Vapor may travel considerable distance to source of ignition and flash back.

### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Evacuate area. Shut off all sources of ignition. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
<b>Large Spill and Leak</b>	Evacuate area. Shut off all sources of ignition. Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

### Section 7, Handling and Storage

<b>Handling</b>	Avoid prolonged exposure or repeated exposure. See section 8.
<b>Storage</b>	Keep away from heat, sparks, and open flame. Store in a cool dry place.

### Section 8. Exposure Controls / Personal Protection

<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
<b>Personal Protection</b>	
<b>Eyes</b>	Safety goggles required.
<b>Body</b>	Protective clothing advised. Lab coat.
<b>Respiratory</b>	Wear appropriate NIOSH/MSHA-approved respirator.
<b>Hands</b>	Chemical resistant gloves.
<b>Feet</b>	Rubber boots advised.
<b>Personal Protection in Case of a Large Spill</b>	Same as above.
<b>Product Name</b>	<b>Exposure Limits</b>
1)	
2)	
3)	
<b>Consult Local authorities before acceptable exposure limits.</b>	

### Section 9. Physical and Chemical Properties

<b>Physical State and Appearance</b>	Brown Liquid.	<b>Odor:</b>	Alcohol like.
<b>Molecular Weight</b>	Not applicable.	<b>Taste:</b>	Not available.
<b>Molecular Formula</b>	Not applicable.	<b>Color:</b>	Dark brown red.
<b>pH (1%/Water)</b>	Not applicable.		
<b>Boiling/Condensation Point</b>	78.333°C (173°F)		
<b>Melting/Freezing Point</b>	May start to solidify at -89.5°C (-129.1°F) based on data for Ethyl alcohol.		
<b>Critical Temperature</b>	Not applicable.		
<b>Specific Gravity</b>	0.800		
<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>	Soluble in cold water.		
<b>Physical Chemical Comments</b>	Not available.		

### Section 10. Stability and Reactivity

<b>Stability and Reactivity</b>	Stable.
<b>Conditions of Instability</b>	Not available.
<b>Incompatibility with Various Substances</b>	Incompatible with strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Not available.
<b>Hazardous Polymerization</b>	Not available.
<b>Section 11. Toxicological Information</b>	
<b>Toxicity to Animals</b>	LD50: Not available. LC50: Not available.
<b>Chronic Effects on Humans</b>	May be harmful by inhalation, ingestion, or skin absorption.
<b>Other Toxic Effects on Humans</b>	To the best of our knowledge, the chemical, physical, and toxicological properties have not be thoroughly investigated.
<b>Special Remarks on Toxicity to Animals</b>	Not available.
<b>Special Remarks on Chronic Effects on Humans</b>	Human: Passes through the placenta, excreted in maternal milk. (Ethyl Alcohol)
<b>Special Remarks on Other Toxic Effects on Humans</b>	Not available.

<b>Section 12. Ecological Information</b>	
<b>Ecotoxicity</b>	Not available.
<b>BODS and COD</b>	Not available.
<b>Biodegradable/OEDC Mobility</b>	Not available.
<b>Toxicity of the Products of Biodegradation</b>	The product itself and its products of degradation are not toxic.
<b>Special Remarks on The Products of Biodegradation</b>	Not available.

<b>Section 13. Disposal Considerations</b>	
<b>Waste Information</b>	Not available.
<b>Waste Stream</b>	Not available.
Consult your local or regional authorities.	

<b>Section 14. Transport Information</b>	
<b>DOT Classification</b>	Class 3: Flammable Liquid.
<b>Marine Pollutant</b>	Not available.
<b>Hazardous Substances Reportable Quantity</b>	Not available.
<b>Special Provisions for Transport</b>	Not applicable.
<b>TDG Classification</b>	Class 3: Flammable Liquid.
<b>ADR/RID Classification</b>	Class 3: Flammable Liquid A.
<b>IMO/IMDG Classification</b>	Class 3.1 Flammable Liquid (Low flashpoint group of liquids having a flashpoint below $-18^{\circ}\text{C}$ ( $0^{\circ}\text{F}$ ) c.c.).
<b>ICAO/IATA Classification</b>	Class 3: Flammable Liquid.

<b>Section 15. Other Information</b>			
<b>Label requirements</b>	HIGHLY FLAMMABLE LIQUID AND VAPOR, VAPOR MAY CAUSE FLASH FIRE. CONTAINS MATERIAL WHICH MAY CAUSE BLOOD, NERVOUS SYSTEM, REPRODUCTIVE SYSTEM, LIVER, RESPIRATORY TRACT, SKIN, EYES DAMAGE.		
<b>Hazardous Material Information System (U.S.A.)</b>	<b>Health</b> 2	<b>National Fire Protection Association (U.S.A.)</b>	
	<b>Fire Hazard</b> 3		
	<b>Reactivity</b> 0		
	<b>Personal Protection</b> a		
<b>References</b>			
<b>Other Special Considerations</b>			

**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.*

## BBC Biochemical

## MATERIAL SAFETY DATA SHEET

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

Common Name: OG-6	Code: 4750, 4760, 4770
Supplier: BBC Biochemical	MSDS#: 4700
Synonym: Orange G Solution (Alcoholic)	Validation Date: 9-1-07
Trade Name: Not Available	Print Date: 9-1-07
Material Uses: Not Available	Responsible Name: Dr. B
Manufacturer: BBC Biochemical PO Box 1320 409 Eleanor Lane Mount Vernon, WA 98273 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) Orange G	1936-15-8	N/A	Not Available
2) Ethyl Alcohol, 95%	64-17-5	N/A	TWA: 1900 (ppm) from OSHA (PEL) TWA: 1000 (ppm) from ACGIH (TLV) TWA: 1900 (mg/m <sup>3</sup> ) TWA: 1000 (mg/m <sup>3</sup> )
3) Phosphotungstic Acid	12067-99-1	N/A	TWA: 1 CIEL: 3 (mg/m <sup>3</sup> )
4) Methanol			

**Section 3. Hazards Identification**

Physical State and Appearance	Orange Liquid.
Emergency Overview	Not available.
Routes of Entry	May be harmful by inhalation, ingestion or skin absorption.
Potential Acute Health Effects	
Eyes	Slightly hazardous in case of eye contact (irritant).
Skin	Slightly hazardous in case of skin contact.
Inhalation	Slightly hazardous in case of inhalation
Ingestion	Slightly hazardous in case of ingestion
Potential Chronic Health Effects	Not Available.
Medical Conditions Aggravated by Overexposure	Repeated or prolonged exposure is not known to aggravate medical condition.
Overexposure/Signs/Symptoms	Loss of appetite, inability to concentrate. Headache, irritation of eyes, nose, throat.

**Section 4. First Aid Measures**

Eye Contact	Immediately flush eyes with copious amounts of water for at least 15 minutes.
Skin Contact	Immediately wash skin with soap and copious amounts of water.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult give oxygen.
Ingestion	Wash out mouth with water provided person is conscious. Loosen clothing such as a collar, tie, belt or waistband. Induce vomiting. Provided person is conscious, have victim drink several glasses of water or milk.
Notes to Physician	Not available.

**Section 5. Fire Fighting Measures**

Flammability of the Product	Flammable.
Auto-ignition Temperature	362.78°C (685°F)
Flash Points	CLOSED CUP: 12.778°C (55°F)
Flammable Limits	The greatest known range is LOWER: 3.3% UPPER: 19% (Ethyl Alcohol)
Products of Combustion	These products are carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO, NO <sub>2</sub> ...), sulfur oxides (SO <sub>2</sub> ,

	SO <sub>3</sub> ...). Some metallic oxides.
<b>Fire Hazards in Presence Of Various Substances</b>	Not available.
<b>Explosion Hazards in Presence of Various Substances</b>	Vapor may travel considerable distance to source of ignition and flash back.
<b>Fire Fighting Media and Instructions</b>	Carbon dioxide, dry chemical powder or appropriate foam. Water spray.
<b>Protective Clothing (Fire)</b>	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
<b>Special Remarks on Fire Hazards</b>	Emits toxic fumes under fire conditions.
<b>Special Remarks on Explosion Hazards</b>	Vapor may travel considerable distance to source of ignition and flash back.

### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Evacuate area. Shut off all sources of ignition. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
<b>Large Spill and Leak</b>	Evacuate area. Shut off all sources of ignition. Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

### Section 7, Handling and Storage

<b>Handling</b>	Avoid prolonged exposure or repeated exposure. See section 8.
<b>Storage</b>	Keep away from heat, sparks, and open flame. Store in a cool dry place.

### Section 8. Exposure Controls / Personal Protection

<b>Engineering Controls</b>	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
<b>Personal Protection</b>	
<b>Eyes</b>	Safety goggles required.
<b>Body</b>	Protective clothing advised. Lab coat.
<b>Respiratory</b>	Wear appropriate NIOSH/MSHA-approved respirator.
<b>Hands</b>	Chemical resistant gloves.
<b>Feet</b>	Rubber boots advised.
<b>Personal Protection in Case of a Large Spill</b>	Same as above.
<b>Product Name</b>	<b>Exposure Limits</b>
1) Orange G	Not Available
2) Ethyl Alcohol, 95%	TWA: 1900 (ppm) from OSHA (PEL) TWA: 1000 (ppm) from ACGIH (TLV) TWA: 1900 (mg/m <sup>3</sup> ) TWA: 1000 (mg/m <sup>3</sup> )
3) Phosphotungstic Acid	TWA: 1 CIEL: 3 (mg/m <sup>3</sup> )
<b>Consult Local authorities before acceptable exposure limits.</b>	

### Section 9. Physical and Chemical Properties

<b>Physical State and Appearance</b>	Orange Liquid.	<b>Odor:</b>	Alcohol like.
<b>Molecular Weight</b>	Not applicable.	<b>Taste:</b>	Not available.
<b>Molecular Formula</b>	Not applicable.	<b>Color:</b>	Deep orange.
<b>pH (1%/Water)</b>	Not applicable.		
<b>Boiling/Condensation Point</b>	78.333°C (173°F)		
<b>Melting/Freezing Point</b>	May start to solidify at -89.5°C (-129.1°F) based on data for Ethyl alcohol.		
<b>Critical Temperature</b>	Not applicable.		
<b>Specific Gravity</b>	0.800		
<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>	Soluble in cold water.		

Physical Chemical Comments Not available.

### Section 10. Stability and Reactivity

Stability and Reactivity Stable.  
 Conditions of Instability Not available.  
 Incompatibility with Various Substances Incompatible with strong oxidizing agents.  
 Hazardous Decomposition Products Not available.  
 Hazardous Polymerization Not available.

### Section 11. Toxicological Information

Toxicity to Animals Acute oral toxicity (LD50): 3300 mg/kg [Rat]. (Phosphotungstic Acid).  
 LC50: Not available.  
 Chronic Effects on Humans May be harmful by inhalation, ingestion, or skin absorption.  
 Other Toxic Effects on Humans To the best of our knowledge, the chemical, physical, and toxicological properties have not be thoroughly investigated.  
 Special Remarks on Toxicity to Animals Not available.  
 Special Remarks on Chronic Effects on Humans Human: Passes through the placenta, excreted in maternal milk. (Ethyl Alcohol)  
 Special Remarks on Other Toxic Effects on Humans Not available.

### Section 12. Ecological Information

Ecotoxicity Not available.  
 BODS and COD Not available.  
 Biodegradable/OEDC Not available.  
 Mobility Not available.  
 Toxicity of the Products of Biodegradation The product itself and its products of degradation are not toxic.  
 Special Remarks on The Products of Biodegradation Not available.

### Section 13. Disposal Considerations

Waste Information Not available.  
 Waste Stream Not available.  
 Consult your local or regional authorities.

### Section 14. Transport Information

DOT Classification Class 3: Flammable Liquid.  
 Marine Pollutant Not available.  
 Hazardous Substances Reportable Quantity Not available.  
 Special Provisions for Transport Not applicable.  
 TDG Classification Class 3: Flammable Liquid.  
 ADR/RID Classification Class 3: Flammable Liquid A.  
 IMO/IMDG Classification Class 3.1 Flammable Liquid (Low flashpoint group of liquids having a flashpoint below  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) c.c.).  
 ICAO/IATA Classification Class 3: Flammable Liquid.

### Section 15. Other Information

Label requirements HIGHLY FLAMMABLE LIQUID AND VAPOR, VAPOR MAY CAUSE FLASH FIRE. CONTAINS MATERIAL WHICH MAY CAUSE BLOOD, NERVOUS SYSTEM, REPRODUCTIVE SYSTEM, LIVER, RESPIRATORY TRACT, SKIN, EYES DAMAGE.

<b>Hazardous Material Information System (U.S.A.)</b>	<b>Health</b>	1	<b>National Fire Protection Association (U.S.A.)</b>	
	<b>Fire Hazard</b>	3		
	<b>Reactivity</b>	0		
	<b>Personal Protection</b>	a		
<b>References</b>				
<b>Other Special Considerations</b>				
<b>Notice to Reader</b>				
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