

# BBC Biochemical MATERIAL SAFETY DATA SHEET

## Section 1. Chemical Product and Company Information

Common Name: S-2 Cyto™	Code: 4311
Supplier: BBC Biochemical	MSDS#: 4311
Synonym: None	Validation Date: 3-6-09
Trade Name: None	Print Date: 3-6-09
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#	OSHA PEL	OSHA STEL
1) Isopropyl Alcohol	67-63-0	400 ppm	500 ppm
2) Ethyl Alcohol	64-17-5	1000 ppm	None established
3) Methyl Alcohol	67-56-1	200 ppm	250 ppm
4) Methyl Iso-Butyl Ketone	108-10-1	50 ppm	75 ppm

## Section 3. Hazards Identification

Physical State and Appearance	Transparent, colorless liquid with an alcoholic odor.
Emergency Overview	Not available.
Routes of Entry	Inhalation, ingestion, skin contact.
Potential Acute Health Effects	
Eyes	400-800 ppm may cause irritation.
Skin	May cause slight irritation.
Inhalation	400-800 ppm may cause mild to uncomfortable irritation.
Ingestion	May cause abdominal pain and vomiting; Central nervous system depression.
Potential Chronic Health Effects	
Medical Conditions Aggravated by Overexposure/Overexposure/Signs/Symptoms	N/A

## Section 4. First Aid Measures

Eye Contact	Flush for 15-20 minutes with large amounts of water or normal saline until no evidence of chemical remains..
Skin Contact	Remove contaminated clothing and shoes immediately. Wash with copious amounts of water for at least 15-20 minutes.
Inhalation	Remove to fresh air immediately. Get medical attention immediately..
Ingestion	Give activated charcoal. Do not attempt emesis if respiration is depressed. Get medical attention immediately.
Notes to Physician	Not available.

## Section 5. Fire Fighting Measures

Flammability of the Product	Flamamble.
Auto-ignition Temperature	Not available.
Flash Points	52 F.
Flammable Limits	Not available.
Products of Combustion	Not available.
Fire Hazards in Presence	Not available.

**Of Various Substances**

**Explosion Hazards in Presence of Various Substances** Not available.

**Fire Fighting Media and Instructions** "Alcohol" foam, CO<sub>2</sub> Dry chemical. Wear self-contained breathing apparatus and protective clothing.

**Protective Clothing (Fire)**

**Special Remarks on Fire Hazards** Fire hazard when exposed to heat.

**Special Remarks on Explosion Hazards** Explosion hazard when exposed to heat.

**Section 6. Accidental Release Measures**

**Small Spill and Leak** Remove sources of heat or ignition, or when feasible, remove leaking container. Provide ventilation. Contain spill (dilution of spill with water to raise flashpoint may be desirable.) Pick up liquid for recovery or disposal when feasible. Absorb small spills and residue with suitable material and containerize for proper disposal as described under Waste Disposal Method below. Material must be disposed of in accordance with all federal, state, and local regulations.

**Large Spill and Leak** Same as above.

**Section 7, Handling and Storage**

**Handling** Do not breathe vapor. Electrically ground all equipment when handling this product.

**Storage** Keep container tightly closed. Store away from incompatible substances. Store away from heat, sparks, open flame, oxidizers.

**Section 8. Exposure Controls / Personal Protection****Engineering Controls****Personal Protection**

**Eyes** Safety goggles with side shields must be worn at all times.

**Body** Impervious clothing must be worn at all times.

**Respiratory** If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH/MSHA approved air respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety supplier). Engineering and/or administrative controls should be implemented to reduce exposure. Material must be handled or transferred in an approved fume hood or with adequate ventilation.

**Hands** Appropriate protective gloves must be worn to prevent contact with this substance.

**Feet** Impervious footwear must be worn at all times.

**Personal Protection in Case of a Large Spill**

Product Name	Exposure Limits
1) Ethyl Alcohol	OSHA PEL 1000ppm TWA
2) Isopropyl Alcohol	OSHA PEL 400ppm TWA
3) Methyl Alcohol	OSHA PEL 200ppm TWA

**Consult Local authorities before acceptable exposure limits.**

**Section 9. Physical and Chemical Properties**

<b>Physical State and Appearance</b>	Transparent, colorless liquid with an alcoholic odor.	<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> Not available.
<b>pH (1%/Water)</b>	Not applicable.	
<b>Boiling/Condensation Point</b>	170-180 F.	
<b>Melting/Freezing Point</b>	Not applicable.	
<b>Critical Temperature</b>	Not applicable.	
<b>Specific Gravity</b>	~0.8.	
<b>Vapor Pressure</b>	40-50 mmHg @ 66 F.	
<b>Vapor Density</b>	~2.0.	
<b>Volatility</b>	100% volatile.	
<b>Odor Threshold</b>	Not applicable.	
<b>Evaporation Rate</b>	~2.5.	
<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

<b>Stability and Reactivity Conditions of Instability</b>	Stable under normal Temperatures and Pressures. May oxidize under normal storage conditions. Heat.
<b>Incompatibility with Various Substances</b>	Strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Thermal decomposition products may include toxic oxides of carbon.
<b>Hazardous Polymerization</b>	Has not been reported to occur under normal temperatures and pressures.

### Section 11. Toxicological Information

<b>Toxicity to Animals</b>	Inhalation: Ethyl Alcohol LC50: (rat) 20000ppm/10h Methyl Alcohol LC <sub>0</sub> : (human) 86000mg/m <sup>3</sup> Isopropyl Alcohol LCL <sub>0</sub> : (rat) 16000 ppm/8h Methyl Iso-Butyl Ketone LCL <sub>0</sub> : (rat) 4000 ppm/15 min.  Oral: Ethyl Alcohol TDL <sub>0</sub> : (human) 50 mg/kg LD <sub>50</sub> : (rat) 7.060 mg/kg Methyl Alcohol LDL <sub>0</sub> : (human) 340 mg/kg Methyl Iso-Butyl Ketone LD <sub>50</sub> : (rat) 2080 mg/kg Isopropyl Alcohol LDL <sub>0</sub> : (human) 8600 mg/kg  Dermal: Ethyl Alcohol LDL <sub>0</sub> : (rabbit) 20 g/kg Methyl Alcohol LDL <sub>0</sub> : (monkey) 500 mg/kg
<b>Chronic Effects on Humans</b>	Ethyl Alcohol may cause severe skin irritation on prolonged contact.
<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>	Not available.
<b>BODS and COD</b>	Not available.
<b>Biodegradable/OEDC Mobility</b>	Not available.
<b>Toxicity of the Products of Biodegradation</b>	Not available.
<b>Special Remarks on The Products of Biodegradation</b>	Not available.

### Section 13. Disposal Considerations

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

### Section 14. Transport Information

<b>DOT Classification</b>	UN1993, Flammable Liquids, n.o.s., (Ethanol), 3, II
<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>	UN1993, Flammable Liquids, n.o.s., (Ethanol), 3, II
<b>ADR/RID Classification</b>	Not controlled under ADR (Europe).
<b>IMO/IMDG Classification</b>	Not controlled under IMDG.
<b>ICAO/IATA Classification</b>	See IATA Regulations, UN1993, Flammable Liquids, n.o.s., (Ethanol), 3, II

### Section 15. Other Information

<b>Label requirements</b>			
<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>		
<b>References</b>			
<b>Other Special Considerations</b>			
<b>Notice to Reader</b>			
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.			