



# Dynamic Diagnostics, Inc.

## Material Safety Data Sheet

### Section 1. Chemical Product and Company Information

<b>Common Name:</b> Xylene	<b>Code:</b> 9910
<b>Supplier:</b> Dynamic Diagnostics, Inc. 12665 Richfield Court Livonia, MI 48150 800-717-4677	<b>MSDS#:</b> 9910
<b>Synonym:</b> Aromatic hydrocarbons	<b>Validation Date:</b> 09-01-2008
<b>Trade Name:</b> Xylene	<b>Print Date:</b> 09-01-2008
<b>Material Uses:</b> Clearing Agent	<b>Responsible Name:</b> Dr. B
<b>Manufacturer:</b> BBC Biochemical 409 Eleanor Lane Mount Vernon, WA 98273	<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	OSHA PEL	ACGIH TLV
1) Xylenes	1330-20-7	60-100	100 ppm	100 ppm
2) Ethyl benzene	100-41-4	10-30	100 ppm	50 ppm (skin)
3) Toluene	108-88-3	0-0.5	200 ppm	50 ppm (skin)
4) Cumene	98-82-8	0-0.4	50 ppm	50 ppm
5) Benzene	71-43-2	<0.5	1 ppm	5 ppm

### Section 3. Hazards Identification

<b>Physical State and Appearance</b>	Clear, colorless liquid with aromatic sweet odor.
<b>Emergency Overview</b>	<b>Note to physician:</b> If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis should be induced with supervision. Keep victim's head below hips to prevent aspiration.
<b>Routes of Entry</b>	Not available.
<b>Potential Acute Health Effects</b>	<p><b>Eyes</b> Liquid is moderately irritating to the eyes. High vapor concentrations may also be irritating.</p> <p><b>Skin</b> Liquid is mildly irritating to the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).</p> <p><b>Inhalation</b> Vapors may be irritating to the nose, throat, and respiratory tract. High vapor concentrations may cause central nervous system (CNS) depression.</p> <p><b>Ingestion</b> Liquid is moderately toxic and may be harmful if swallowed; may produce CNS depression. Ingestion of product may result in vomiting; aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspir. pneumontis.</p>
<b>Potential Chronic Health Effects</b>	
<b>Medical Conditions Aggravated by Overexposure</b>	Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired function from preexisting disorders may be aggravated by exposure to this product.
<b>Overexposure/Signs/Symptoms</b>	Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur. Aspiration pneumontis may be evidenced by coughing, labored breathing and cyanosis (bluish skin). In severe cases death may result.

### Section 4. First Aid Measures

<b>Eye Contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.
<b>Skin Contact</b>	Remove contaminated clothing/shoes. Flush skin with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

<b>Inhalation</b>	Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention.
<b>Ingestion</b>	Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.
<b>Notes to Physician</b>	Not available.

### Section 5. Fire Fighting Measures

<b>Flammability of the Product</b>	Flammable.
<b>Auto-ignition Temperature</b>	986.
<b>Flash Points</b>	81°F.
<b>Flammable Limits</b>	LEL: 1.00%, UEL: 7.00%
<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>	Use water fog, "alcohol" foam, dry chemical, or CO <sub>2</sub> . Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear, including positive pressure NIOSH approved SCBA. Cool fire exposed containers with water.
<b>Protective Clothing (Fire)</b>	
<b>Special Remarks on Fire Hazards</b>	Fine mist or spray may be flammable at temperatures below the flash point. Carbon monoxide and unidentified organic compounds may be formed during combustion.
<b>Special Remarks on Explosion Hazards</b>	When heated above the flash point this material emits flammable vapors which, when mixed with air, can burn or be explosive.

### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency.
<b>Large Spill and Leak</b>	Same as above.

### Section 7. Handling and Storage

<b>Handling</b>	Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.
<b>Storage</b>	Keep away from heat, sparks, and flame. Surfaces that are hot may ignite liquid product even in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone.

### Section 8. Exposure Controls / Personal Protection

<b>Engineering Controls</b>	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.
<b>Personal Protection</b>	
<b>Eyes</b>	Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.
<b>Body</b>	Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.
<b>Respiratory</b>	If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-supplying respirator or an air-purifying respirator for organic vapors.
<b>Hands</b>	Test data indicate the best protection is provided by neoprene, nitrile, and natural rubber gloves.
<b>Feet</b>	Impervious footwear is required in areas where splashing is possible.
<b>Personal Protection in Case of a Large Spill</b>	See 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>	Clear, colorless liquid.	<b>Odor:</b>	Sweet, aromatic.
<b>Molecular Weight</b>	106.16	<b>Taste:</b>	Not available.
<b>Molecular Formula</b>	Not applicable.	<b>Color:</b>	Colorless.
<b>pH (1%/Water)</b>	Essentially neutral.		
<b>Boiling/Condensation Point</b>	279°F		
<b>Melting/Freezing Point</b>	-54°F (-48°C)/No data available.		
<b>Critical Temperature</b>	Not applicable.		
<b>Specific Gravity</b>	0.865-0.875		
<b>Vapor Pressure</b>	9 mmHg@20°C.		
<b>Vapor Density</b>	Heavier than air, 3.7.		
<b>Volatility</b>	100% volatile.		
<b>Odor Threshold</b>	Not applicable.		
<b>Evaporation Rate</b>	0.72; slower than ether.		
<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>	Solubility negligible in water.		
<b>Physical Chemical Comments</b>	Not available.		

### Section 10. Stability and Reactivity

<b>Stability and Reactivity</b>	Stable.
<b>Conditions of Instability</b>	Stable under normal conditions. Avoid heat, flame, and other sources of ignition.
<b>Incompatibility with Various Substances</b>	Avoid strong oxidizers. Xylene will attack some forms of plastics, rubber and coatings.
<b>Hazardous Decomposition Products</b>	Carbon monoxide and unidentified organic compounds may be formed during combustion.
<b>Hazardous Polymerization</b>	Will not occur.

### Section 11. Toxicological Information

<b>Toxicity to Animals</b>	<p>Xylene:</p> <p>LD50: oral rat=4300 mg/kg.; dermal rabbit &gt;2000 mg/kg</p> <p>LC50: inhalation rat=6700 ppm for 4 hours</p> <p>Ethylbenzene:</p> <p>LD50: oral rat=3500 mg/kg.; dermal rabbit=17.8 mL/kg</p> <p>LC50: inhalation rat=4000 ppm for 4 hours</p>
<b>Chronic Effects on Humans</b>	<p>Xylene (1330-20-7) and ethyl benzene (100-41-4) are listed as toxic chemicals under Section 313 of SARA Title III. Under Sections 311/312, this product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard. While there is no evidence that industrially acceptable levels of toluene vapors (e.g., the TLV) have produced cardiac effects in humans, animal studies have shown that inhalation of high levels of toluene produced cardiac sensitization. Such sensitization may cause fatal changes in heart rhythms. This latter effect was shown to be enhanced by hypoxia or the injection of adrenaline-like agents. Prolonged and repeated exposures to high concentrations of toluene (mixed solvent) have resulted in hearing loss in laboratory rats. While the effect of solvents on the human auditory system is uncertain, solvent abusers exposed to high doses of toluene show signs of hearing loss, and occupational exposure to toluene (mixed solvent) may interact with noise in causing hearing loss in the work environment. The effects of solvents on human hearing are uncertain. Solvent abusers and noise interaction with toluene (mixed solvent) in the work environment may cause signs of hearing loss.</p> <p>Xylene is not listed as a carcinogen by NTP, IARC, or OSHA and we are not aware of data indicating it is mutagenic, carcinogenic or a skin sensitizer. Laboratory animals exposed to prolonged and repeated high doses of xylene by various routes have shown hearing loss and effects in liver, kidneys, lungs, spleen, heart, blood and adrenals; developmental toxicity studies showed embryolethal/toxic and teratogenic effects with maternal toxicity. The effects of solvents on human hearing are uncertain. Solvent abusers and noise interaction with xylene (mixed solvent) in the work environment may cause signs of hearing loss. Xylene is not listed as a carcinogen by NTP, IARC, or OSHA and we are not aware of data indicating it is mutagenic, carcinogenic or a skin sensitizer. Laboratory animals exposed to prolonged and repeated high doses of xylene by various routes have shown hearing loss and effects in liver, kidneys, lungs, spleen, heart, blood and adrenals; developmental toxicity studies showed embryolethal/toxic and teratogenic effects with maternal toxicity. The effects of solvents on human hearing are uncertain. Solvent abusers and noise interaction with xylene (mixed solvent) in the work environment may cause signs of hearing loss.</p> <p>A chronic feeding study in rats with ethyl benzene caused cancer (increase in total malignant tumors). Developmental toxicity studies in rats with ethyl benzene showed evidence of skeletal and other</p>

malformations at maternally toxic doses; similar effects were not seen in rabbits. Ethyl benzene was not mutagenic in: Ames test, yeast, drosophila, sister chromatic exchange with cultured human lymphocytes cells and in vitro cytogenetics assay with CHO cells.

This product contains a chemical or chemicals known to the State of California to cause cancer and/or reproductive toxicity.

**Other Toxic Effects on Humans**

**Special Remarks on Toxicity to Animals** Not available.

**Special Remarks on Chronic Effects on Humans** This product may contain benzene (CAS# 71-43-2) at a concentration less than 10 ppm.

**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** Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**Waste Stream** Not available.

**Consult your local or regional authorities.**

### Section 14. Transport Information

**DOT Classification** Domestic (Land, D.O.T.)  
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Proper Shipping Name: RQ, XYLENES  
Hazard Class: 3  
UN/NA: UN1307  
Packing Group: III  
Information reported for product/size: 398LB

International (Water, I.M.O.)  
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Proper Shipping Name: XYLENES  
Hazard Class: 3  
UN/NA: UN1307  
Packing Group: III  
Information reported for product/size: 398LB

**Marine Pollutant** Not available.

**Hazardous Substances Reportable Quantity** Not available.

**Special Provisions for Transport** Chemical Inventory Status - Part 1

Ingredient	TSCA	EC	Japan	Australia
m-Xylene (108-38-3)	Yes	Yes	Yes	Yes
o-Xylene (95-47-6)	Yes	Yes	Yes	Yes
p-Xylene (106-42-3)	Yes	Yes	Yes	Yes
Ethyl Benzene (100-41-4)	Yes	Yes	Yes	Yes

Chemical Inventory Status - Part 2

Ingredient	Canada	Korea	DSL	NDSL	Phil.
m-Xylene (108-38-3)	Yes	Yes	No	Yes	

o-Xylene (95-47-6)	Yes	Yes	No	Yes
p-Xylene (106-42-3)	Yes	Yes	No	Yes
Ethyl Benzene (100-41-4)	Yes	Yes	No	Yes

## Federal, State &amp; International Regulations - Part 1

Ingredient	SARA 302		SARA 313	
	RQ	TPQ	List	Chemical Catg.
m-Xylene (108-38-3)	No	No	Yes	No
o-Xylene (95-47-6)	No	No	Yes	No
p-Xylene (106-42-3)	No	No	Yes	No
Ethyl Benzene (100-41-4)	No	No	Yes	No

## Federal, State &amp; International Regulations - Part 2

Ingredient	CERCLA	RCRA	TSCA
		261.33	8(d)
m-Xylene (108-38-3)	1000	No	No
o-Xylene (95-47-6)	1000	No	No
p-Xylene (106-42-3)	100	No	Yes
Ethyl Benzene (100-41-4)	1000	No	No

Chemical Weapons Convention: No TSCA 12(b): Yes CDTA: No  
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No  
 Reactivity: No (Mixture / Liquid)

## WARNING:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

Australian Hazchem Code: 3[Y]

Poison Schedule: None allocated.

## WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**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.

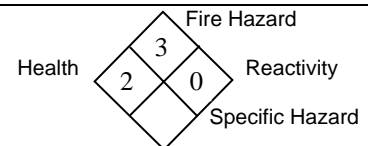
### Section 15. Other Information

#### Label requirements

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

<b>Health</b>	2
<b>Fire Hazard</b>	3
<b>Reactivity</b>	0
<b>Personal Protection</b>	h

**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.