

M-XYLENE

XLM

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 1,3-Dimethylbenzene Xylol		Watery liquid	Colorless	Sweet odor
Floats on water. Flammable, irritating vapor is produced.				
<p>Keep people away. Shut off ignition sources and call fire department. Avoid contact with liquid and vapor. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	<p>FLAMMABLE Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear self-contained breathing apparatus. Extinguish with foam, dry chemical, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.</p>			
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to eyes, nose, and throat. If inhaled, will cause headache, difficult breathing, or loss of consciousness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to skin and eyes. If swallowed, will cause nausea, vomiting, or loss of consciousness. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.</p>			
Water Pollution	<p>HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.</p>			

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 32; Aromatic Hydrocarbon
2.2 **Formula:** m-C₆H₄(CH₃)₂
2.3 **IMO/UN Designation:** 3.2/1307
2.4 **DOT ID No.:** 1307
2.5 **CAS Registry No.:** 108-38-3
2.6 **NAERG Guide No.:** 130
2.7 **Standard Industrial Trade Classification:** 51124

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Approved canister or air-supplied mask; goggles or face shield; plastic gloves and boots.
- 3.2 **Symptoms Following Exposure:** Vapors cause headache and dizziness. Liquid irritates eyes and skin. If taken into lungs, causes severe coughing, distress, and rapidly developing pulmonary edema. If ingested, causes nausea, vomiting, cramps, headache, and coma; can be fatal. Kidney and liver damage can occur.
- 3.3 **Treatment of Exposure:** INHALATION: remove to fresh air; administer artificial respiration and oxygen if required; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water.
- 3.4 **TLV-TWA:** 100 ppm
3.5 **TLV-STEL:** 150 ppm
3.6 **TLV-Ceiling:** Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 3; LD₅₀ = 50 to 500 g/kg
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** Kidney and liver damage.
3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.
3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
3.12 **Odor Threshold:** 0.05 ppm
3.13 **IDLH Value:** 900 ppm
3.14 **OSHA PEL-TWA:** 100 ppm
3.15 **OSHA PEL-STEL:** Not listed.
3.16 **OSHA PEL-Ceiling:** Not listed.
3.17 **EPA AEGL:** Not listed

4. FIRE HAZARDS

- 4.1 **Flash Point:** 81°F C.C.
4.2 **Flammable Limits in Air:** 1.1%-7.0%
4.3 **Fire Extinguishing Agents:** Foam, dry chemical, or carbon dioxide
4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
4.5 **Special Hazards of Combustion Products:** Not pertinent
4.6 **Behavior in Fire:** Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back.
4.7 **Auto Ignition Temperature:** 982°F
4.8 **Electrical Hazards:** Class I, Group D
4.9 **Burning Rate:** 5.8 mm/min.
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** 50.0 (calc.)
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** 13.0 (calc.)
4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
5.2 **Reactivity with Common Materials:** No reaction
5.3 **Stability During Transport:** Stable
5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
5.5 **Polymerization:** Not pertinent
5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** 22 ppm/96 hr/bluegill/TL_m/fresh water
6.2 **Waterfowl Toxicity:** Currently not available
6.3 **Biological Oxygen Demand (BOD):** 0 lb/lb, 5 days; 0% (theor.), 8 days
6.4 **Food Chain Concentration Potential:** Currently not available
6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 1
Human Contact hazard: II
Reduction of amenities: XX

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Research: 99.99%; Pure: 99.9%; Technical: 99.2%
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Open (flame arrester) or pressure-vacuum
7.5 **IMO Pollution Category:** C
7.6 **Ship Type:** 3
7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Flammable liquid
8.2 **49 CFR Class:** 3
8.3 **49 CFR Package Group:** III
8.4 **Marine Pollutant:** No
8.5 **NFPA Hazard Classification:**
- | | |
|---------------------------|----------------|
| Category | Classification |
| Health Hazard (Blue)..... | 2 |
| Flammability (Red)..... | 3 |
| Instability (Yellow)..... | 0 |
- 8.6 **EPA Reportable Quantity:** 1000 pounds
8.7 **EPA Pollution Category:** C
8.8 **RCRA Waste Number:** U239
8.9 **EPA FWPCA List:** Yes

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
9.2 **Molecular Weight:** 106.16
9.3 **Boiling Point at 1 atm:** 282°F = 138.9°C = 412.1°K
9.4 **Freezing Point:** -54.2°F = -47.9°C = 225.3°K
9.5 **Critical Temperature:** 650.8°F = 343.8°C = 617°K
9.6 **Critical Pressure:** 513.8 atm = 34.95 psia = 3.540 MN/m²
9.7 **Specific Gravity:** 0.864 at 20°C (liquid)
9.8 **Liquid Surface Tension:** 28.6 dynes/cm = 0.0286 N/m at 20°C
9.9 **Liquid Water Interfacial Tension:** 36.4 dynes/cm = 0.0364 N/m at 30°C
9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.071
9.12 **Latent Heat of Vaporization:** 147 Btu/lb = 81.9 cal/g = 3.43 X 10⁵ J/kg
9.13 **Heat of Combustion:** -17,554 Btu/lb = -9752.4 cal/g = -408.31 X 10⁵ J/kg
9.14 **Heat of Decomposition:** Not pertinent
9.15 **Heat of Solution:** Not pertinent
9.16 **Heat of Polymerization:** Not pertinent
9.17 **Heat of Fusion:** 26.01 cal/g
9.18 **Limiting Value:** Currently not available
9.19 **Reid Vapor Pressure:** 0.34 psia

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
15	55.400	40	0.387	35	0.962	15	0.938
20	55.260	50	0.393	40	0.953	20	0.896
25	55.130	60	0.398	45	0.944	25	0.862
30	54.990	70	0.404	50	0.935	30	0.827
35	54.850	80	0.410	55	0.926	35	0.794
40	54.710	90	0.415	60	0.917	40	0.764
45	54.570	100	0.421	65	0.908	45	0.735
50	54.430	110	0.426	70	0.899	50	0.708
55	54.290	120	0.432	75	0.890	55	0.682
60	54.160	130	0.437	80	0.881	60	0.658
65	54.020	140	0.443	85	0.873	65	0.635
70	53.880	150	0.448	90	0.864	70	0.613
75	53.740	160	0.454	95	0.855	75	0.592
80	53.600	170	0.460	100	0.846	80	0.572
85	53.460	180	0.465			85	0.554
90	53.320	190	0.471				
95	53.180	200	0.476				
100	53.050	210	0.482				

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I	60	0.090	60	0.00172	0	0.247
	N	70	0.127	70	0.00238	25	0.260
	S	80	0.177	80	0.00324	50	0.273
	O	90	0.242	90	0.00435	75	0.286
	L	100	0.326	100	0.00577	100	0.299
	U	110	0.434	110	0.00754	125	0.311
	B	120	0.571	120	0.00975	150	0.324
	L	130	0.743	130	0.01247	175	0.336
	E	140	0.956	140	0.01577	200	0.348
		150	1.219	150	0.01977	225	0.360
		160	1.538	160	0.02455	250	0.371
		170	1.924	170	0.03023	275	0.383
		180	2.388	180	0.03691	300	0.394
		190	2.939	190	0.04473	325	0.406
		200	3.590	200	0.05382	350	0.417
		210	4.355	210	0.06431	375	0.427
		220	5.247	220	0.07635	400	0.438
		230	6.282	230	0.09009	425	0.449
		240	7.476	240	0.10570	450	0.459
		250	8.846	250	0.12330	475	0.469
		260	10.410	260	0.14310	500	0.479
						525	0.489
						550	0.499
						575	0.508
						600	0.517