

# TETRAMETHYL LEAD

TML

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Lead tetramethyl		Oily liquid	Colorless	Fruity odor
Sinks in water. Poisonous, flammable vapor is produced.				
<p>Evacuate.                  Keep people away. <b>AVOID CONTACT WITH LIQUID AND VAPOR.</b>                  Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves).                  Call fire department.                  Stay upwind and use water spray to "knock down" vapor.                  Notify local health and pollution control agencies.                  Protect water intakes.</p>				
<b>Fire</b>	Combustible. Containers may explode in fire. Vapor may explode if ignited in an enclosed area. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Combat fires from behind barrier or protected location. Extinguish with water, dry chemicals, foam, or carbon dioxide. Cool exposed containers with water.			
<b>Exposure</b>	CALL FOR MEDICAL AID.  VAPOR POISONOUS IF INHALED. Irritating to eyes. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Will burn eyes. 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.			
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.			

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
 Collection Systems: Pump  
 Do not burn

### 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.  
 2.2 Formula: Pb(CH<sub>3</sub>)<sub>4</sub>.  
 2.3 IMO/UN Designation: 6.1/1649  
 2.4 DOT ID No.: 1649  
 2.5 CAS Registry No.: 75-74-1  
 2.6 NAERG Guide No.: 131  
 2.7 Standard Industrial Trade Classification: 51550

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Organic vapor canister face mask for short periods, air line mask for longer periods; protective goggles or face shield; neoprene-coated protective gloves; rubber shoes or boots; white or light-colored clothing.
- 3.2 **Symptoms Following Exposure:** Increased urinary output of lead. If inhaled or absorbed by skin, may cause insomnia, excitability, delirium, coma, and death. Do not confuse with inorganic lead.
- 3.3 **Treatment of Exposure:** Remove victim from contaminated area. SKIN: wash with kerosene or similar petroleum distillate, followed by soap and water; consult physician immediately.
- 3.4 TLV-TWA: 0.15 mg/m<sup>3</sup>  
 3.5 TLV-STEL: Not listed.  
 3.6 TLV-Ceiling: Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 3; oral rat LD<sub>50</sub> = 109 mg/kg  
 3.8 **Toxicity by Inhalation:** Currently not available.  
 3.9 **Chronic Toxicity:** Lead poisoning
- 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:** Causes smarting of the skin and first-degree burns on short exposure; may cause secondary burns on long exposure.
- 3.12 **Odor Threshold:** Currently not available  
 3.13 **IDLH Value:** 40 mg Pb/m<sup>3</sup>  
 3.14 **OSHA PEL-TWA:** 0.075 mg/m<sup>3</sup>  
 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:** 100°F O.C.  
 4.2 **Flammable Limits in Air:** Currently not available  
 4.3 **Fire Extinguishing Agents:** Water, foam, dry chemical, or carbon dioxide  
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent  
 4.5 **Special Hazards of Combustion Products:** Toxic gases are generated in fire.  
 4.6 **Behavior in Fire:** May explode  
 4.7 **Auto Ignition Temperature:** Currently not available  
 4.8 **Electrical Hazards:** Not pertinent  
 4.9 **Burning Rate:** Currently not available  
 4.10 **Adiabatic Flame Temperature:** Currently not available  
 4.11 **Stoichiometric Air to Fuel Ratio:** 38.1 (calc.)  
 4.12 **Flame Temperature:** Currently not available  
 4.13 **Combustion Molar Ratio (Reactant to Product):** 11.0 (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:** Starts to decompose at about 212°F. If confined, may explode or detonate at high temperatures.  
 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:** Currently not available  
 6.2 **Waterfowl Toxicity:** Currently not available  
 6.3 **Biological Oxygen Demand (BOD):** Currently not available  
 6.4 **Food Chain Concentration Potential:** Currently not available  
 6.5 **GESAMP Hazard Profile:**  
 Bioaccumulation: +  
 Damage to living resources: 3  
 Human Oral hazard: 3  
 Human Contact hazard: II  
 Reduction of amenities: XXX

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical  
 7.2 **Storage Temperature:** Ambient  
 7.3 **Inert Atmosphere:** No requirement  
 7.4 **Venting:** Pressure-vacuum  
 7.5 **IMO Pollution Category:** Currently not available  
 7.6 **Ship Type:** Currently not available  
 7.7 **Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Poison  
 8.2 49 CFR Class: 6.1  
 8.3 49 CFR Package Group: I  
 8.4 Marine Pollutant: Yes  
 8.5 NFPA Hazard Classification:
- | Category                  | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 3              |
| Flammability (Red).....   | 3              |
| Instability (Yellow)..... | 3              |
- 8.6 EPA Reportable Quantity: Not listed.  
 8.7 EPA Pollution Category: Not listed.  
 8.8 RCRA Waste Number: Not listed  
 8.9 EPA FWPCA List: Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid  
 9.2 **Molecular Weight:** 267.33  
 9.3 **Boiling Point at 1 atm:** 230°F = 110°C = 383°K (begins to decompose at 212°F)  
 9.4 **Freezing Point:** -17.5°F = -27.5°C = 245.7°K  
 9.5 **Critical Temperature:** Not pertinent  
 9.6 **Critical Pressure:** Not pertinent  
 9.7 **Specific Gravity:** 1.6 at 20°C (liquid)  
 9.8 **Liquid Surface Tension:** Currently not available  
 9.9 **Liquid Water Interfacial Tension:** Currently not available  
 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent  
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent  
 9.12 **Latent Heat of Vaporization:** (est.) 55.5 Btu/lb = 30.8 cal/g = 1.29 X 10<sup>5</sup> J/kg  
 9.13 **Heat of Combustion:** (est.) -5290 Btu/lb = -2940 cal/g = -123 X 10<sup>5</sup> 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:** Currently not available  
 9.18 **Limiting Value:** Currently not available  
 9.19 **Reid Vapor Pressure:** Currently not available

### 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
50	124.500	0	0.179		N	28	0.825
52	124.500	5	0.179		O	30	0.809
54	124.500	10	0.179		T	32	0.793
56	124.500	15	0.179			34	0.778
58	124.500	20	0.179		P	36	0.763
60	124.500	25	0.179		E	38	0.748
62	124.500	30	0.179		R	40	0.734
64	124.500	35	0.179		T	42	0.720
66	124.500	40	0.179		I	44	0.707
68	124.500	45	0.179		N	46	0.694
70	124.500	50	0.179		E	48	0.681
72	124.500	55	0.179		N	50	0.669
74	124.500	60	0.179		T	52	0.657
76	124.500					54	0.645
78	124.500					56	0.634
80	124.500					58	0.623
82	124.500					60	0.612
84	124.500					62	0.601
						64	0.591
						66	0.581
						68	0.571
						70	0.561
						72	0.552
						74	0.543
						76	0.534
						78	0.525

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
68	0.050	35	0.149	35	0.00751		C
		40	0.177	40	0.00884		U
		45	0.210	45	0.01036		R
		50	0.248	50	0.01210		R
		55	0.291	55	0.01407		E
		60	0.340	60	0.01630		N
		65	0.397	65	0.01883		T
		70	0.461	70	0.02166		L
		75	0.533	75	0.02484		Y
		80	0.615	80	0.02840		
		85	0.708	85	0.03237		N
		90	0.812	90	0.03677		O
		95	0.928	95	0.04166		T
		100	1.058	100	0.04706		
		105	1.202	105	0.05302		A
		110	1.363	110	0.05958		V
		115	1.541	115	0.06677		A
		120	1.738	120	0.07466		I
		125	1.955	125	0.08327		L
		130	2.194	130	0.09266		A
		135	2.457	135	0.10290		B
							L
							E