

# PROPYLENE TETRAMER

PTT

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Dodecene (non-linear) Tetrapropylene		Liquid Colorless  Floats on water.
<p>Call fire department. Avoid contact with liquid. Notify local health and pollution control agencies.</p>		
<b>Fire</b>	Combustible. Extinguish with foam, water, dry chemical, or carbon dioxide. Cool exposed containers with water.	
<b>Exposure</b>	CALL FOR MEDICAL AID.  LIQUID Irritating to skin and eyes. Harmful if swallowed. Flush affected area 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.	
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.	

<b>1. CORRECTIVE RESPONSE ACTIONS</b> Stop discharge Contain Collection Systems: Skim Clean shore line Salvage waterfowl	<b>2. CHEMICAL DESIGNATIONS</b> 2.1 CG Compatibility Group: 30; Olefin 2.2 Formula: C <sub>12</sub> H <sub>14</sub> 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: 2850 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: 128 2.7 Standard Industrial Trade Classification: 51119
<b>3. HEALTH HAZARDS</b> 3.1 <b>Personal Protective Equipment:</b> Goggles or face shield. 3.2 <b>Symptoms Following Exposure:</b> No inhalation hazard expected. Aspiration hazard if ingested. Low skin and eye irritation. 3.3 <b>Treatment of Exposure:</b> INHALATION: remove victim to fresh air. INGESTION: do NOT lavage or induce vomiting; give vegetable oil and demulcents; call physician. EYES: flush with water for 15 min. SKIN: wash with soap and water. 3.4 <b>TLV-TWA:</b> Not listed. 3.5 <b>TLV-STEL:</b> Not listed. 3.6 <b>TLV-Ceiling:</b> Not listed. 3.7 <b>Toxicity by Ingestion:</b> Grade 0; LD <sub>50</sub> above 15 g/kg 3.8 <b>Toxicity by Inhalation:</b> Currently not available. 3.9 <b>Chronic Toxicity:</b> Currently not available 3.10 <b>Vapor (Gas) Irritant Characteristics:</b> Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary. 3.11 <b>Liquid or Solid Characteristics:</b> Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 3.12 <b>Odor Threshold:</b> Currently not available 3.13 <b>IDLH Value:</b> Not listed. 3.14 <b>OSHA PEL-TWA:</b> Not listed. 3.15 <b>OSHA PEL-STEL:</b> Not listed. 3.16 <b>OSHA PEL-Ceiling:</b> Not listed. 3.17 <b>EPA AEGL:</b> Not listed	

## 4. FIRE HAZARDS

- 4.1 **Flash Point:** 134°F O.C. 120°F C.C.
- 4.2 **Flammable Limits in Air:** Currently not available
- 4.3 **Fire Extinguishing Agents:** Water fog, foam, carbon dioxide or dry chemical
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** 400°F (est.)
- 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:** 73.8 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 19.0 (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:** 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:** None
- 6.5 **GESAMP Hazard Profile:**  
 Bioaccumulation: 0  
 Damage to living resources: (3)  
 Human Oral hazard: (1)  
 Human Contact hazard: I  
 Reduction of amenities: 0

## 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 98.5+%
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open (flame arrester)
- 7.5 **IMO Pollution Category:** B
- 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:** Not listed
- 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:** 168.31
- 9.3 **Boiling Point at 1 atm:** 365–385°F = 185–196°C = 458–469°K
- 9.4 **Freezing Point:** Not pertinent
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 0.2937 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** 23.9 dynes/cm = 0.0239 N/m at 24°C
- 9.9 **Liquid Water Interfacial Tension:** 44.5 dynes/cm = 0.0445 N/m at 22.7°C
- 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.) 154 Btu/lb = 58.6 cal/g = 2.45 X 10<sup>5</sup> J/kg
- 9.13 **Heat of Combustion:** –19,100 Btu/lb = –10,600 cal/g = –444 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
45	48.810	85	0.510	50	1.040	46	1.615
50	48.680	90	0.515	52	1.040	48	1.581
55	48.560	95	0.520	54	1.040	50	1.548
60	48.430	100	0.525	56	1.040	52	1.516
65	48.310	105	0.531	58	1.040	54	1.485
70	48.180	110	0.536	60	1.040	56	1.455
75	48.050	115	0.541	62	1.040	58	1.425
80	47.930	120	0.546	64	1.040	60	1.397
85	47.800	125	0.552	66	1.040	62	1.369
90	47.670	130	0.557	68	1.040	64	1.342
95	47.550	135	0.562	70	1.040	66	1.316
100	47.420	140	0.568	72	1.040	68	1.291
105	47.290	145	0.573	74	1.040	70	1.266
110	47.160	150	0.578	76	1.040	72	1.241
115	47.040			78	1.040	74	1.218
				80	1.040	76	1.195
				82	1.040	78	1.173
				84	1.040	80	1.151
						82	1.130
						84	1.109
						86	1.089
						88	1.069
						90	1.050
						92	1.032
						94	1.013
						96	0.996

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	120	0.022	120	0.00059		N
	N	130	0.031	130	0.00082		O
	S	140	0.043	140	0.00113		T
	O	150	0.059	150	0.00153		
	L	160	0.081	160	0.00206		P
	U	170	0.110	170	0.00273		E
	B	180	0.147	180	0.00359		R
	L	190	0.194	190	0.00468		T
	E	200	0.254	200	0.00604		I
		210	0.330	210	0.00772		N
		220	0.424	220	0.00979		E
		230	0.542	230	0.01232		N
		240	0.686	240	0.01538		T
		250	0.863	250	0.01906		
		260	1.077	260	0.02346		
		270	1.335	270	0.02869		
		280	1.645	280	0.03486		
		290	2.013	290	0.04211		
		300	2.450	300	0.05057		
		310	2.965	310	0.06041		
		320	3.569	320	0.07177		
		330	4.274	330	0.08485		
		340	5.092	340	0.09983		
		350	6.038	350	0.11690		
		360	7.127	360	0.13630		
		370	8.375	370	0.15830		