

BENZOYL CHLORIDE

BZC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Benzenecarbonyl chloride	Watery liquid Colorless to slightly brown Sinks and reacts slowly with water producing a poisonous gas.
<p>Keep people away. Evacuate area in case of large discharge. Avoid contact with liquid and vapor. Wear goggles and self-contained breathing apparatus. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Combustible. POISONOUS GASES ARE PRODUCED IN FIRE AND WHEN HEATED. Wear goggles and self-contained breathing apparatus. DO NOT USE WATER. Extinguish with foam, dry chemical, or carbon dioxide.
Exposure	CALL FOR MEDICAL AID. LIQUID Will burn skin and eyes. Harmful if swallowed. 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.
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS Dilute and disperse Stop discharge Contain Do not add water to undissolved material Do not burn	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: C ₆ H ₅ COCl 2.3 IMO/UN Designation: 8/1736 2.4 DOT ID No.: 1736 2.5 CAS Registry No.: 98-88-4 2.6 NAERG Guide No.: 137 2.7 Standard Industrial Trade Classification: 51139
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Full protective clothing, including full-face respirator for acid gases and organic vapors (yellow GMC canister), close-fitting goggles, nonslip rubber gloves, plastic apron, face shield. 3.2 Symptoms Following Exposure: INHALATION: may irritate eyes, nose and throat. INGESTION: causes acute discomfort. SKIN: causes irritation and burning. 3.3 Treatment of Exposure: INHALATION: remove to fresh air; administer oxygen with patient in sitting position. INGESTION: give water; call physician at once; give milk. EYES: flush with water for 15 min.; get medical attention. SKIN: wash with plenty of soap and water. 3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: 0.5 ppm. 3.7 Toxicity by Ingestion: Currently not available. 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Vapors cause severe irritation of eyes and throat and can cause eye and lung injury. They cannot be tolerated even at low concentrations. 3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second-and third-degree burns on short contact and is very injurious to the eyes. 3.12 Odor Threshold: Currently not available 3.13 IDLH Value: Not listed. 3.14 OSHA PEL-TWA: Not listed. 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: 162°F O.C. 4.2 Flammable Limits in Air: Currently not available 4.3 Fire Extinguishing Agents: Foam, carbon dioxide, dry chemical, water fog 4.4 Fire Extinguishing Agents Not to Be Used: Water spray. Do not allow water to enter containers. 4.5 Special Hazards of Combustion Products: Highly poisonous phosgene gas may be formed in fires. 4.6 Behavior in Fire: At fire temperatures the compound may react violently with water or steam. 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: 35.7 (calc.) 4.12 Flame Temperature: Currently not available 4.13 Combustion Molar Ratio (Reactant to Product): 10.0 (calc.) 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed	7. SHIPPING INFORMATION 7.1 Grades of Purity: 99+%; special grade 7.2 Storage Temperature: Store in cool, dry area 7.3 Inert Atmosphere: Currently not available 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: Corrosive material 8.2 49 CFR Class: 8 8.3 49 CFR Package Group: II 8.4 Marine Pollutant: No 8.5 NFPA Hazard Classification: <table border="0"> <tr> <td>Category</td> <td>Classification</td> </tr> <tr> <td>Health Hazard (Blue).....</td> <td>3</td> </tr> <tr> <td>Flammability (Red).....</td> <td>2</td> </tr> <tr> <td>Instability (Yellow).....</td> <td>1</td> </tr> <tr> <td>Special (White).....</td> <td>W</td> </tr> </table> 8.6 EPA Reportable Quantity: 1000 pounds 8.7 EPA Pollution Category: C 8.8 RCRA Waste Number: Not listed 8.9 EPA FWPCA List: Yes	Category	Classification	Health Hazard (Blue).....	3	Flammability (Red).....	2	Instability (Yellow).....	1	Special (White).....	W
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5. CHEMICAL REACTIVITY 5.1 Reactivity with Water: Slow reaction with water to produce hydrochloric acid fumes. Reaction much faster with steam. 5.2 Reactivity with Common Materials: Slow corrosion of metals, but no immediate hazard. 5.3 Stability During Transport: Not pertinent 5.4 Neutralizing Agents for Acids and Caustics: Soda ash and water; lime 5.5 Polymerization: Does not occur 5.6 Inhibitor of Polymerization: Not pertinent	9. PHYSICAL & CHEMICAL PROPERTIES 9.1 Physical State at 15° C and 1 atm: Liquid 9.2 Molecular Weight: 140.57 9.3 Boiling Point at 1 atm: 387°F = 197.3°C = 470.5°K 9.4 Freezing Point: 30.9°F = -0.6°C = 272.6°K 9.5 Critical Temperature: Not pertinent 9.6 Critical Pressure: Not pertinent 9.7 Specific Gravity: 1.211 at 25°C (liquid) 9.8 Liquid Surface Tension: 36.3 dynes/cm = 0.0363 N/m at 20°C 9.9 Liquid Water Interfacial Tension: Not pertinent 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: Currently not available 9.13 Heat of Combustion: -10,030 Btu/lb = -5770 cal/g = -233.2 X 10 ⁵ 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										
6. WATER POLLUTION 6.1 Aquatic Toxicity: 200 ppm/7 hr/goldfish/lethal/fresh water 500 ppm/1 hr/sunfish/lethal/fresh water 6.2 Waterfowl Toxicity: Currently not available 6.3 Biological Oxygen Demand (BOD): 165%, 5 days 6.4 Food Chain Concentration Potential: None 6.5 GESAMP Hazard Profile: Bioaccumulation: 0 Damage to living resources: 1 Human Oral hazard: 1 Human Contact hazard: II Reduction of amenities: XX	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
36	76.809	85	0.301		N	45	1.754
38	76.750	90	0.306		O	50	1.671
40	76.700	95	0.311		T	55	1.594
42	76.639	100	0.317			60	1.522
44	76.580	105	0.322		P	65	1.454
46	76.520	110	0.327		E	70	1.390
48	76.459	115	0.332		R	75	1.331
50	76.389	120	0.338		T	80	1.275
52	76.320	125	0.343		I	85	1.222
54	76.259	130	0.348		N	90	1.172
56	76.190	135	0.354		E	95	1.125
58	76.110	140	0.359		N	100	1.081
60	76.040	145	0.364		T	105	1.039
62	75.959	150	0.369			110	1.000
64	75.889					115	0.963
66	75.809						
68	75.730						
70	75.639						
72	75.559						
74	75.469						
76	75.389						
78	75.299						
80	75.200						

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
	R	60	0.006	60	0.00014		N
	E	70	0.008	70	0.00021		O
	A	80	0.012	80	0.00030		T
	C	90	0.018	90	0.00042		
	T	100	0.025	100	0.00059		P
	S	110	0.035	110	0.00082		E
		120	0.049	120	0.00112		R
	S	130	0.068	130	0.00151		T
	L	140	0.093	140	0.00202		I
	O	150	0.125	150	0.00268		N
	W	160	0.167	160	0.00353		E
	L	170	0.221	170	0.00459		N
	Y	180	0.290	180	0.00593		T
		190	0.377	190	0.00760		
		200	0.487	200	0.00966		
		210	0.623	210	0.01219		