

DIETHYLZINC

DEZ

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Watery liquid Colorless
Ethylzinc Zinc diethyl Zinc ethyl		IGNITES WHEN EXPOSED TO AIR. Flammable, irritating vapor is produced.
<p>Evacuate. Keep people away. Avoid contact with liquid and vapor. Shut off ignition sources and call fire department. Notify local health and pollution control agencies.</p>		
Fire	IGNITES WHEN EXPOSED TO AIR. Extinguish with dry graphite, soda ash, or other inert powder. DO NOT USE WATER, FOAM, CARBON DIOXIDE, DRY CHEMICALS OR VAPORIZING LIQUIDS ON FIRE. DO NOT USE WATER ON ADJACENT FIRES.	
Exposure	<p>Call for medical aid.</p> <p>VAPOR OR DUST Irritating to eyes, nose and throat. If inhaled will cause headache, or difficult breathing. Move victim to fresh air. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Will burn skin and eyes. If swallowed will cause nausea, and vomiting. 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	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

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed.
- 2.2 Formula: (C₂H₅)₂Zn
- 2.3 IMO/UN Designation: 4.2/1366
- 2.4 DOT ID No.: 1366
- 2.5 CAS Registry No.: Currently not available
- 2.6 NAERG Guide No.: 135
- 2.7 Standard Industrial Trade Classification: 51550

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Cartridge-type or fresh air mask for fumes or smoke; PVC fire-retardant or asbestos gloves; full face shield, safety glasses, or goggles; fire-retardant coveralls as standard wear; for special cases, use asbestos coat or rain suit.
- 3.2 **Symptoms Following Exposure:** Inhalation of mist or vapor causes immediate irritation of nose and throat; excessive or prolonged inhalation of fumes from ignition or decomposition may cause "metal fume fever" (sore throat, headache, fever, chills, nausea, vomiting, muscular aches, perspiration, constricting sensation in lungs, weakness, sometimes prostration); symptoms usually last 12-24 hrs., with complete recovery in 24-48 hrs. Eyes are immediately and severely irritated on contact with liquid, vapor, or dilute solution; without thorough irrigation, cornea may be permanently damaged. Moisture in skin combines with chemical to cause thermal and acid burns; tissue may be scarred without prompt treatment. Ingestion is unlikely but would cause immediate burns at site of contact; pain, nausea, vomiting, cramps, and diarrhea may follow; if untreated, tissue may become ulcerated.
- 3.3 **Treatment of Exposure:** INHALATION: move victim to fresh air and call doctor immediately; give mouth-to-mouth resuscitation if needed; keep victim warm and comfortable; oxygen should be given only by experienced person, and only on doctor's instructions. EYES: flush with large amounts of running water for at least 15 min., holding eyelids apart to insure thorough washing; get medical attention as soon as possible; do not use chemical neutralizers, and avoid oils or ointments unless prescribed by doctor. SKIN: flush affected area with large amounts of water, do not use chemical neutralizers; get medical attention if irritation persists. INGESTION: do NOT induce vomiting; have victim drink large amounts of water or milk immediately; if vomiting occurs, give more fluids; get medical attention.
- 3.4 TLV-TWA: Not listed.
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Not pertinent
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Not pertinent
- 3.10 Vapor (Gas) Irritant Characteristics: Currently not available
- 3.11 Liquid or Solid Characteristics: Currently not available
- 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 AEG: Not listed

4. FIRE HAZARDS

- 4.1 **Flash Point:** Not pertinent (ignites spontaneously)
- 4.2 **Flammable Limits in Air:** Not pertinent
- 4.3 **Fire Extinguishing Agents:** Dry chemical, sand, or powdered limestone
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water, foam, halogenated agents, carbon dioxide
- 4.5 **Special Hazards of Combustion Products:** Yields zinc oxide fumes when burning; can cause "metal fume fever" (see 5.2)
- 4.6 **Behavior in Fire:** Reacts spontaneously with air or oxygen, and violently with water, evolving flammable ethane gas. Contact with water applied to adjacent fires will intensify the fire.
- 4.7 **Auto Ignition Temperature:** Below 0°F
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 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

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Reacts violently to form flammable ethane gas.
- 5.2 **Reactivity with Common Materials:** Will react with surface moisture, generating flammable ethane gas.
- 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:** Not pertinent
- 6.2 **Waterfowl Toxicity:** Not pertinent
- 6.3 **Biological Oxygen Demand (BOD):** None
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 95-98%. Also shipped as 15-25% by weight solutions in hydrocarbon solvents.
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** Inerted with dry nitrogen gas
- 7.4 **Venting:** Safety relief
- 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:** Spontaneously Combustible
- 8.2 **49 CFR Class:** 4.2
- 8.3 **49 CFR Package Group:** I
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	0
Flammability (Red).....	3
Instability (Yellow).....	3
Special (White).....	W
- 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:** 123.5
- 9.3 **Boiling Point at 1 atm:** 255°F = 124°C = 397°K
- 9.4 **Freezing Point:** -18°F = -28°C = 245°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.207 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** (est.) 20 dynes/cm = 0.020 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:** 120 Btu/lb = 68 cal/g = 2.8 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** -11,700 Btu/lb = -6,495 cal/g = -272 X 10³ 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
42	76.429	42	0.400	42	1.129	42	0.876
44	76.360	44	0.400	44	1.129	44	0.859
46	76.290	46	0.400	46	1.129	46	0.843
48	76.219	48	0.400	48	1.129	48	0.828
50	76.150	50	0.400	50	1.129	50	0.813
52	76.089	52	0.400	52	1.129	52	0.798
54	76.020	54	0.400	54	1.129	54	0.784
56	75.950	56	0.400	56	1.129	56	0.770
58	75.879	58	0.400	58	1.129	58	0.756
60	75.809	60	0.400	60	1.129	60	0.743
62	75.740	62	0.400	62	1.129	62	0.730
64	75.669	64	0.400	64	1.129	64	0.718
66	75.599	66	0.400	66	1.129	66	0.705
68	75.530	68	0.400	68	1.129	68	0.693
70	75.459	70	0.400	70	1.129	70	0.682
72	75.389	72	0.400	72	1.129	72	0.670
74	75.320	74	0.400	74	1.129	74	0.659
76	75.250	76	0.400	76	1.129	76	0.648

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	0.232	60	0.00513		N
	E	70	0.309	70	0.00671		O
	A	80	0.408	80	0.00869		T
	C	90	0.533	90	0.01115		
	T	100	0.689	100	0.01417		P
	S	110	0.884	110	0.01785		E
		120	1.123	120	0.02230		R
		130	1.416	130	0.02764		T
		140	1.772	140	0.03400		I
		150	2.201	150	0.04154		N
		160	2.715	160	0.05040		E
		170	3.326	170	0.06077		N
		180	4.049	180	0.07282		T
		190	4.899	190	0.08676		
		200	5.894	200	0.10280		
		210	7.052	210	0.12120		