

# ETHYLALUMINUM SESQUICHLORIDE

EAS

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> EASC	Liquid Colorless to yellow  IGNITES WHEN EXPOSED TO AIR. Reacts violently with water. Poisonous and flammable gases are produced on contact with water.
<p>Evacuate. Keep people away. Avoid inhalation. Shut off ignition sources and call fire department. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Notify local health and pollution control agencies. Protect water intakes.</p>	
<b>Fire</b>	IGNITES WHEN EXPOSED TO AIR. If in water, let fire burn. If not in water, 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.
<b>Exposure</b>	Call for medical aid.  VAPOR Irritating to eyes, nose and throat. Harmful if inhaled. Move victim to fresh air. If breathing is difficult, give oxygen.  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. or milk. 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. 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  
Chemical and Physical Treatment:  
Neutralize  
Do not add water to undissolved material

### 2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.  
2.2 **Formula:** (C<sub>2</sub>H<sub>5</sub>)<sub>3</sub>AlCl<sub>3</sub>  
2.3 **IMO/UN Designation:** 4.2/1925  
2.4 **DOT ID No.:** Not listed.  
2.5 **CAS Registry No.:** Currently not available  
2.6 **NAERG Guide No.:** Not listed  
2.7 **Standard Industrial Trade Classification:** 51550

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Full protective clothing, preferably of aluminized glass cloth; goggles, face shield, gloves; in case of fire, all-purpose canister or self-contained breathing apparatus.
- 3.2 **Symptoms Following Exposure:** Inhalation of smoke from fire causes metal-fume fever (flu-like symptoms); acid fumes irritate nose and throat. Contact with liquid, which is spontaneously flammable, causes severe burns of eyes and skin.
- 3.3 **Treatment of Exposure:** INHALATION: only fumes from fire need be considered; metal-fume fever is not critical and lasts less than 36 hrs.; irritation of nose and throat by acid vapors may require treatment by a physician. EYES: flush gently with water for 15 min.; treat burns if fire occurred; get medical attention. SKIN: wash with water; treat burns caused by fire; 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:** Currently not available  
3.8 **Toxicity by Inhalation:** Currently not available.  
3.9 **Chronic Toxicity:** Metal-fume fever may develop after breathing smoke from fire.  
3.10 **Vapor (Gas) Irritant Characteristics:** Currently not available  
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:** Not pertinent (ignites spontaneously)  
4.2 **Flammable Limits in Air:** Not pertinent  
4.3 **Fire Extinguishing Agents:** Inert dry powders such as dry graphite, soda ash, sand or limestone  
4.4 **Fire Extinguishing Agents Not to Be Used:** Water, foam, dry chemicals, halogenated agents, or carbon dioxide  
4.5 **Special Hazards of Combustion**  
**Products:** Intense smoke may cause metal-fume fever. Irritating hydrogen chloride also formed.  
4.6 **Behavior in Fire:** Contact with water from adjacent fires will cause formation of irritating smoke containing aluminum oxide and hydrogen chloride.  
4.7 **Auto Ignition Temperature:** Not pertinent  
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:** 57.1 (calc.)  
4.12 **Flame Temperature:** Currently not available  
4.13 **Combustion Molar Ratio (Reactant to Product):** 17.0 (calc.)  
4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

### 5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** Reacts violently to form hydrogen chloride fumes and flammable ethane gas.  
5.2 **Reactivity with Common Materials:** Reacts with surface moisture to generate hydrogen chloride, which is corrosive to common metals.  
5.3 **Stability During Transport:** Stable  
5.4 **Neutralizing Agents for Acids and Caustics:** Rinse with sodium bicarbonate or lime solution.  
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):** None  
6.4 **Food Chain Concentration Potential:** None  
6.5 **GESAMP Hazard Profile:** Not listed

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Pure (neat); 25% or less by weight in benzene, hexane, or heptane. Solutions are not pyrophoric.  
7.2 **Storage Temperature:** Ambient  
7.3 **Inert Atmosphere:** Inerted; dry nitrogen at 5 psig.  
7.4 **Venting:** Safety relief with rupture disc.  
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:** Not listed.  
8.2 **49 CFR Class:** Not pertinent.  
8.3 **49 CFR Package Group:** Not listed.  
8.4 **Marine Pollutant:** No  
8.5 **NFPA Hazard Classification:**
- | Category                  | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | -              |
| 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:** 247.5  
9.3 **Boiling Point at 1 atm:** 399°F = 204°C = 477°K  
9.4 **Freezing Point:** -4°F = -20°C = 253°K  
9.5 **Critical Temperature:** Not pertinent  
9.6 **Critical Pressure:** Not pertinent  
9.7 **Specific Gravity:** 1.092 at 25°C (liquid)  
9.8 **Liquid Surface Tension:** (est.) 32 dynes/cm = 0.032 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:** Not pertinent  
9.13 **Heat of Combustion:** (est.) -8,600 Btu/lb = -4,800 cal/g = -200 X 10<sup>6</sup> J/kg  
9.14 **Heat of Decomposition:** Not pertinent  
9.15 **Heat of Solution:** Currently not available  
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
40	69.799	34	0.441	51	1.048	55	2.327
50	69.349	36	0.442	52	1.048	60	2.204
60	68.900	38	0.443	53	1.048	65	2.089
70	68.450	40	0.444	54	1.048	70	1.982
80	68.000	42	0.446	55	1.048	75	1.883
90	67.549	44	0.447	56	1.048	80	1.790
100	67.099	46	0.448	57	1.048	85	1.704
110	66.650	48	0.449	58	1.048	90	1.623
120	66.190	50	0.450	59	1.048	95	1.547
130	65.740	52	0.451	60	1.048	100	1.476
140	65.290	54	0.452	61	1.048	105	1.409
150	64.839	56	0.453	62	1.048	110	1.347
160	64.389	58	0.454	63	1.048	115	1.288
170	63.940	60	0.456	64	1.048	120	1.233
180	63.490	62	0.457	65	1.048	125	1.181
190	63.040	64	0.458	66	1.048	130	1.132
		66	0.459	67	1.048	135	1.086
		68	0.460	68	1.048	140	1.043
		70	0.461	69	1.048	145	1.001
		72	0.462	70	1.048	150	0.963
		74	0.463	71	1.048	155	0.926
		76	0.464	72	1.048		
		78	0.466	73	1.048		
		80	0.467	74	1.048		
		82	0.468	75	1.048		
		84	0.469	76	1.048		

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	130	0.070	130	0.00274		N
	E	140	0.093	140	0.00356		O
	A	150	0.122	150	0.00460		T
	C	160	0.158	160	0.00589		P
	T	170	0.204	170	0.00748		E
	S	180	0.261	180	0.00942		R
		190	0.332	190	0.01179		T
		200	0.419	200	0.01464		I
		210	0.524	210	0.01806		N
		220	0.653	220	0.02214		E
		230	0.807	230	0.02697		N
		240	0.991	240	0.03267		T
		250	1.211	250	0.03935		
		260	1.471	260	0.04714		
		270	1.778	270	0.05619		
		280	2.138	280	0.06664		
		290	2.558	290	0.07866		
		300	3.045	300	0.09243		
		310	3.610	310	0.10810		
		320	4.260	320	0.12600		
		330	5.007	330	0.14620		
		340	5.861	340	0.16900		
		350	6.833	350	0.19460		