

ISOPROPYL ACETATE

IAC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Acetic acid, isopropyl ester 2-Propyl acetate		Watery liquid	Colorless	Pleasant fruity odor
Floats and mixes slowly with water. Flammable, irritating vapor is produced.				
Keep people away. Shut off ignition sources and call fire department. Stay upwind and use water spray to "knock down" vapor. Avoid contact with liquid and vapor. Notify local health and pollution control agencies. Protect water intakes.				
Fire	FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.			
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose and throat. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing. 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.			
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 Dilute and disperse Stop discharge Contain Collection Systems: Skim Salvage waterfowl	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: 34; Ester 2.2 Formula: CH ₃ COOCH(CH ₃) ₂ 2.3 IMO/UN Designation: 3.2/1220 2.4 DOT ID No.: 1220 2.5 CAS Registry No.: 108-21-4 2.6 NAERG Guide No.: 129 2.7 Standard Industrial Trade Classification: 51372
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Organic vapor canister or air-supplied mask; chemical goggles or face splash shield. 3.2 Symptoms Following Exposure: Vapors irritate eyes and respiratory tract; high concentrations can be anesthetic. Liquid irritates eyes but causes no serious injury; may cause dermatitis; no serious effects if swallowed. 3.3 Treatment of Exposure: INHALATION: if victim is overcome by vapors, remove from exposure immediately; call a physician; if breathing is irregular or stopped, start resuscitation and administer oxygen. EYES: flush with water for at least 15 min. 3.4 TLV-TWA: 250 ppm 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: 310 ppm 3.7 Toxicity by Ingestion: Grade 2; LD ₅₀ = 0.5 to 5 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 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: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 3.12 Odor Threshold: Currently not available 3.13 IDLH Value: 1,800 ppm 3.14 OSHA PEL-TWA: 250 ppm 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: 60°F O.C. 37°F C.C.
- 4.2 Flammable Limits in Air: 1.8%-8.0%
- 4.3 Fire Extinguishing Agents: Alcohol foam, dry chemical, carbon dioxide
- 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: 860°F
- 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: 30.9 (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: 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): 26%, 5 days (theor.)
- 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: 1
 Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: 95-99+%
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open (flame arrester) or 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: Flammable liquid
- 8.2 49 CFR Class: 3
- 8.3 49 CFR Package Group: Not listed.
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	1
Flammability (Red).....	3
Instability (Yellow).....	0
- 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: 102.13
- 9.3 Boiling Point at 1 atm: 191.3°F = 88.5°C = 361.7°K
- 9.4 Freezing Point: -92.7°F = -69.3°C = 203.9°K
- 9.5 Critical Temperature: 509.0°F = 265°C = 538.2°K
- 9.6 Critical Pressure: 529 psia = 36 atm = 3.65 MN/m²
- 9.7 Specific Gravity: 0.874 at 20°C (liquid)
- 9.8 Liquid Surface Tension: 26 dynes/cm = 0.026 N/m at 20°C
- 9.9 Liquid Water Interfacial Tension: Currently not available
- 9.10 Vapor (Gas) Specific Gravity: 3.5
- 9.11 Ratio of Specific Heats of Vapor (Gas): (est.) 1.074
- 9.12 Latent Heat of Vaporization: 150 Btu/lb = 81 cal/g = 3.4 X 10⁵ J/kg
- 9.13 Heat of Combustion: -9420 Btu/lb = -5230 cal/g = -219 X 10⁵ 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: 2.0 psia

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
34	56.100	0	0.458	30	0.975	20	0.689
36	56.010	10	0.462	35	0.970	30	0.640
38	55.930	20	0.466	40	0.964	40	0.595
40	55.850	30	0.470	45	0.958	50	0.555
42	55.760	40	0.474	50	0.952	60	0.519
44	55.680	50	0.478	55	0.947	70	0.487
46	55.600	60	0.482	60	0.941	80	0.458
48	55.510	70	0.486	65	0.935	90	0.431
50	55.430	80	0.490	70	0.930	100	0.407
52	55.350	90	0.493	75	0.924	110	0.385
54	55.270	100	0.497	80	0.918	120	0.365
56	55.180	110	0.501	85	0.912	130	0.347
58	55.100	120	0.505	90	0.907	140	0.330
60	55.020	130	0.509	95	0.901	150	0.314
62	54.930	140	0.513	100	0.895	160	0.300
64	54.850	150	0.517	105	0.890	170	0.287
66	54.770	160	0.521	110	0.884		
68	54.680	170	0.525	115	0.878		
70	54.600	180	0.528	120	0.872		
72	54.520	190	0.532	125	0.867		
74	54.430			130	0.861		
76	54.350			135	0.855		
78	54.270			140	0.850		
80	54.180			145	0.844		
82	54.100			150	0.838		
84	54.020			155	0.832		

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	2.900	20	0.153	20	0.00304	100	0.298
		30	0.224	30	0.00436	120	0.307
		40	0.322	40	0.00613	140	0.315
		50	0.454	50	0.00848	160	0.323
		60	0.629	60	0.01152	180	0.332
		70	0.859	70	0.01542	200	0.340
		80	1.154	80	0.02035	220	0.348
		90	1.530	90	0.02648	240	0.356
		100	2.003	100	0.03405	260	0.364
		110	2.591	110	0.04328	280	0.372
		120	3.315	120	0.05441	300	0.379
		130	4.197	130	0.06771	320	0.387
		140	5.261	140	0.08347	340	0.394
		150	6.536	150	0.10200	360	0.401
		160	8.049	160	0.12360	380	0.408
		170	9.833	170	0.14860	400	0.415
		180	11.920	180	0.17730	420	0.422
		190	14.350	190	0.21010	440	0.429
		200	17.150	200	0.24730		
		210	20.360	210	0.28930		
		220	24.040	220	0.33650		
		230	28.210	230	0.38920		
		240	32.930	240	0.44770		