

DIISOBUTYL KETONE

DIK

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Liquid	Colorless	Mild, sweet odor
DIBK 5-Diisopropylacetone 2,6-Dimethyl-4-heptane Isovalerone		Floats on water.		
<p>Keep people away. Avoid contact with liquid and vapor. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Combustible. Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire.			
Exposure	CALL FOR MEDICAL AID. VAPOR Irritating to eyes, nose and throat. If inhaled will cause coughing or difficult breathing. 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. LIQUID Irritating to 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. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.			
Water Pollution	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.			

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn;
Absorb
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 18; Ketone
2.2 **Formula:** (CH₃)₂CHCH₂COCH₂CH(CH₃)₂ or C₈H₁₆O
2.3 **IMO/UN Designation:** 3.3/1157
2.4 **DOT ID No.:** 1157
2.5 **CAS Registry No.:** 108-83-8
2.6 **NAERG Guide No.:** 127
2.7 **Standard Industrial Trade Classification:** 51625

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Air-supplied mask in confined areas; plastic gloves; face shield and safety glasses
- 3.2 **Symptoms Following Exposure:** Inhalation of vapor causes irritation of nose and throat. Ingestion causes irritation of mouth and stomach. Vapor irritates eyes. Contact with liquid irritates skin.
- 3.3 **Treatment of Exposure:** INHALATION: move to fresh air; give oxygen if breathing is difficult; call a physician. EYES: flush with plenty of water. SKIN: wipe off; flush with plenty of water; wash with soap and water.
- 3.4 **TLV-TWA:** 25 ppm
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** Not listed.
3.7 **Toxicity by Ingestion:** Grade 2; oral LD₅₀ = 1.4 g/kg (mouse), 5.75 g/kg (rat)
3.8 **Toxicity by Inhalation:** Currently not available.
3.9 **Chronic Toxicity:** Causes increased liver and kidney weights in rats, decreased liver weights in guinea pigs
3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause moderate irritation such that personnel will find high concentrations unpleasant. 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 skin.
3.12 **Odor Threshold:** Currently not available
3.13 **IDLH Value:** 500 ppm
3.14 **OSHA PEL-TWA:** 50 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:** 131°F O.C. 120°F C.C.
4.2 **Flammable Limits in Air:** 0.81%-7.1% at 200°F
4.3 **Fire Extinguishing Agents:** Foam, dry chemical, carbon dioxide
4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
4.5 **Special Hazards of Combustion Products:** Currently not available
4.6 **Behavior in Fire:** Currently not available
4.7 **Auto Ignition Temperature:** 745°F
4.8 **Electrical Hazards:** Currently not available
4.9 **Burning Rate:** Currently not available
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** 61.9 (calc.)
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** 18.0 (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:** May attack some forms of plastics.
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:** Currently not available

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** 65 ppm/24 hr/brine shrimp/TL_m
6.2 **Waterfowl Toxicity:** Currently not available
6.3 **Biological Oxygen Demand (BOD):** 4% of theoretical in 5 days, fresh water
6.4 **Food Chain Concentration Potential:** None
6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 2
Human Oral hazard: 1
Human Contact hazard: 1
Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Open (flame arrester)
7.5 **IMO Pollution Category:** D
7.6 **Ship Type:** Data 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:** III
8.4 **Marine Pollutant:** No
8.5 **NFPA Hazard Classification:**
- | | |
|---------------------------|----------------|
| Category | Classification |
| Health Hazard (Blue)..... | 1 |
| Flammability (Red)..... | 2 |
| 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:** 142.23
9.3 **Boiling Point at 1 atm:** 325°F = 163°C = 436°K
9.4 **Freezing Point:** -43°F = -42°C = 231°K
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** 0.806 at 20°C (liquid)
9.8 **Liquid Surface Tension:** 23.92 dynes/cm = 0.02392 N/m at 22°C
9.9 **Liquid Water Interfacial Tension:** Currently not available
9.10 **Vapor (Gas) Specific Gravity:** 4.9
9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
9.12 **Latent Heat of Vaporization:** 121 Btu/lb = 67 cal/g = 2.8 X 10⁵ J/kg
9.13 **Heat of Combustion:** -16,040 Btu/lb = -8,910 cal/g = -373 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:** 0.21 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	52.200		N	60	1.048	35	1.274
36	52.090		O	61	1.048	40	1.208
38	51.980		T	62	1.048	45	1.146
40	51.870			63	1.048	50	1.089
42	51.750		P	64	1.048	55	1.035
44	51.640		E	65	1.048	60	0.986
46	51.530		R	66	1.048	65	0.939
48	51.420		T	67	1.048	70	0.896
50	51.310		I	68	1.048	75	0.855
52	51.200		N	69	1.048	80	0.817
54	51.090		E	70	1.048	85	0.781
56	50.980		N	71	1.048	90	0.747
58	50.870		T	72	1.048	95	0.716
60	50.760			73	1.048	100	0.686
62	50.650			74	1.048		
64	50.530			75	1.048		
66	50.420			76	1.048		
68	50.310			77	1.048		
70	50.200						
72	50.090						
74	49.980						
76	49.870						
78	49.760						
80	49.650						
82	49.540						
84	49.420						

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	0.050	70	0.035	70	0.00088		N
		80	0.050	80	0.00122		O
		90	0.069	90	0.00167		T
		100	0.095	100	0.00225		
		110	0.130	110	0.00301		P
		120	0.174	120	0.00399		E
		130	0.232	130	0.00522		R
		140	0.307	140	0.00678		T
		150	0.402	150	0.00873		I
		160	0.521	160	0.01114		N
		170	0.670	170	0.01410		E
		180	0.855	180	0.01771		N
		190	1.083	190	0.02209		T
		200	1.362	200	0.02736		
		210	1.701	210	0.03366		
		220	2.111	220	0.04115		
		230	2.603	230	0.05001		
		240	3.191	240	0.06042		
		250	3.888	250	0.07260		
		260	4.713	260	0.08677		
		270	5.682	270	0.10320		
		280	6.817	280	0.12210		
		290	8.137	290	0.14380		
		300	9.669	300	0.16860		
		310	11.440	310	0.19690		
		320	13.470	320	0.22890		