ACETYLACETONE

ATA

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Diacetylmethane
2,4-Pentanedione

Liquid Colorless Unpleasant Odor

Floats and mixes slowly with water. Flammable, irritating vapor is produced.

Shut off ignition sources. Call fire department.
Stop discharge if possible. Keep people away.
Avoid contact with liquid and vapor. Avoid inhalation.
Isolate and remove discharged material.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

Combustible.
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
Wear goggles and self-contained breathing apparatus.
Extinguish with dry chemicals, alcohol foam, or carbon dioxide.
Water may be ineffective on fire.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes.
If inhaled will cause dizziness, coughing, headache, or loss of consciousness.
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.
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 UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.

Water Pollution

Effect of low concentration 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

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed
2.2 Formula: $CH_3COCH_2COCH_3$
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: 123-54-6
2.6 NAERG Guide No.: Not listed
2.7 Standard Industrial Trade Classification: 51625

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Safety glasses; eye bath and safety shower; air-supplied mask for concentrations above 2%
3.2 Symptoms Following Exposure: Inhalation causes dizziness, headache, nausea, vomiting and loss of consciousness. Contact with liquid irritates eyes.
3.3 Treatment of Exposure: INHALATION: remove to fresh air; if victim is not breathing, give artificial respiration and then oxygen; call a physician. EYES or SKIN: flush with water.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 2; oral LD_{50} = 1,000 mg/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
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 AEGL: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 105°F O.C. 93°F C.C.
4.2 Flammable Limits in Air: 2.4%-11.6%
4.3 Fire Extinguishing Agents: Dry chemical, ``alcohol'' foam, carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective on fire.
4.5 Special Hazards of Combustion Products: Currently not available
4.6 Behavior in Fire: Vapor is heavier than air and may travel to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 644°F
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: 3.6 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: Currently not available
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): Currently not available
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 dissolve 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: 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): Currently not available
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: I
Reduction of amenities: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: Commercial
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester)
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).....	2
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: 100.12
9.3 Boiling Point at 1 atm: 284.7°F = 140.4°C = 413.6°K
9.4 Freezing Point: –10.3°F = –23.5°C = 249.7°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.975 at 20°C
9.8 Liquid Surface Tension: 31.2 dynes/cm = 0.0312 N/m at 20°C
9.9 Liquid Water Interfacial Tension: Not pertinent
9.10 Vapor (Gas) Specific Gravity: 3.45
9.11 Ratio of Specific Heats of Vapor (Gas): (est.) 1.072
9.12 Latent Heat of Vaporization: 194 Btu/lb = 108 cal/g = 4.52 X 10^5 J/kg
9.13 Heat of Combustion: –11,070 Btu/lb = –6,150 cal/g = –257 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: –11.5 Btu/lb = –6.4 cal/g = –0.27 X 10^5 J/kg
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	
Temperature (degrees F)	Pounds per cubic foot
35	60.980
40	60.960
45	60.940
50	60.920
55	60.910
60	60.890
65	60.870
70	60.850
75	60.840
80	60.820
85	60.800
90	60.780
95	60.770
100	60.750

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
51	0.550
52	0.550
53	0.550
54	0.550
55	0.550
56	0.550
57	0.550
58	0.550
59	0.550
60	0.550
61	0.550
62	0.550
63	0.550
64	0.550
65	0.550
66	0.550
67	0.550
68	0.550
69	0.550
70	0.550
71	0.550
72	0.550
73	0.550
74	0.550
75	0.550
76	0.550

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
52	1.056
54	1.056
56	1.056
58	1.056
60	1.056
62	1.056
64	1.056
66	1.056
68	1.056
70	1.056
72	1.056
74	1.056
76	1.056
78	1.056
80	1.056
82	1.056
84	1.056
86	1.056

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
51	0.954
52	0.945
53	0.937
54	0.928
55	0.920
56	0.912
57	0.904
58	0.896
59	0.888
60	0.880
61	0.872
62	0.865
63	0.857
64	0.850
65	0.842
66	0.835
67	0.828
68	0.821
69	0.814
70	0.807
71	0.800
72	0.794
73	0.787
74	0.780
75	0.774
76	0.768

9.24 SOLUBILITY IN WATER	
Temperature (degrees F)	Pounds per 100 pounds of water
34	7.122
36	7.444
38	7.766
40	8.088
42	8.410
44	8.733
46	9.055
48	9.377
50	9.699
52	10.020
54	10.340
56	10.670
58	10.990
60	11.310
62	11.630
64	11.950
66	12.280
68	12.600
70	12.920
72	13.240
74	13.570
76	13.890
78	14.210
80	14.530
82	14.850
84	15.180

9.25 SATURATED VAPOR PRESSURE	
Temperature (degrees F)	Pounds per square inch
60	0.106
70	0.144
80	0.194
90	0.258
100	0.340
110	0.443
120	0.573
130	0.734
140	0.933
150	1.177
160	1.474
170	1.832
180	2.261
190	2.773
200	3.380
210	4.096
220	4.935
230	5.913
240	7.050
250	8.363
260	9.874
270	11.610
280	13.580
290	15.820
300	18.370

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
60	0.00190
70	0.00253
80	0.00335
90	0.00437
100	0.00566
110	0.00725
120	0.00922
130	0.01162
140	0.01452
150	0.01801
160	0.02218
170	0.02713
180	0.03297
190	0.03981
200	0.04779
210	0.05704
220	0.06772
230	0.07997
240	0.09398
250	0.10990
260	0.12800
270	0.14830
280	0.17120
290	0.19690
300	0.22550

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
0	0.268
25	0.278
50	0.289
75	0.299
100	0.309
125	0.319
150	0.328
175	0.338
200	0.347
225	0.356
250	0.365
275	0.374
300	0.382
325	0.391
350	0.399
375	0.407
400	0.415
425	0.423
450	0.430
475	0.438
500	0.445
525	0.452
550	0.459
575	0.466
600	0.472