METHYL ISOBUTYL CARBINOL

MIC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Isobutylmethylcarbinol
MAA
MAOH
Methyl amyl alcohol
4-Methyl-2-pentanol
MIBC
MIC

Oily liquid | Colorless | Mild alcohol odor

Floats on water. Irritating vapor is produced.

Notify local health and pollution control agencies.
Keep people away.
Avoid contact with liquid and vapor.
Call fire department.

Fire

Combustible.
Extinguish with dry chemical, alcohol foam, or carbon dioxide.
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
Harmful if skin is exposed.
If inhaled, will cause dizziness or difficult breathing.
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 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.

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

Dilute and disperse
Stop discharge
Contain
Collection Systems: Skim
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 20; Alcohol, glycol
2.2 Formula: $(CH_3)_2CHCH_2CH(OH)CH_3$
2.3 IMO/UN Designation: 3.3/2053
2.4 DOT ID No.: 2053
2.5 CAS Registry No.: 105-30-6
2.6 NAERG Guide No.: 129
2.7 Standard Industrial Trade Classification: 51219

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Air pack or organic canister mask; rubber gloves; goggles or face shield
3.2 Symptoms Following Exposure: Vapor irritates eyes and nose; may cause anesthesia. Prolonged contact with liquid causes irritation and cracking of skin; also irritates eyes.
3.3 Treatment of Exposure: INHALATION: remove to fresh air; give artificial respiration if needed; call a doctor. SKIN: flush with water. EYES: flush with water for at least 15 min; consult a doctor.
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; LD_{50} = 0.5 to 5 g/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: None
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 the skin.
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: 120-130°F O.C.; 106°F C.C.
4.2 Flammable Limits in Air: 1.0%-5.5%
4.3 Fire Extinguishing Agents: Alcohol foam, dry chemical, or 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: Currently not available
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Currently not available
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 42.8 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 13.0 (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: 370 ppm/24 hr/brine shrimp/TL_m
6.2 Waterfowl Toxicity: Currently not available
6.3 Biological Oxygen Demand (BOD): 50% of theoretical in 5 days, freshwater
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: I
Reduction of amenities: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: Currently not available
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester)
7.5 IMO Pollution Category: C
7.6 Ship Type: 3
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).....	2
Flammability (Red).....	2
Instability (Yellow).....	0
Special (White).....	

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: 102.18
9.3 Boiling Point at 1 atm: 269.2°F = 131.8°C = 405°K
9.4 Freezing Point: <–130°F = <–90°C = <183°K
9.5 Critical Temperature: 555.8°F = 291°C = 564.2°K
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.807 at 20°C (liquid)
9.8 Liquid Surface Tension: 22.8 dynes/cm = 0.0228 N/m at 20°C
9.9 Liquid Water Interfacial Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): 1.053
9.12 Latent Heat of Vaporization: 162 Btu/lb = 90.1 cal/g = 3.77 X 10^5 J/kg
9.13 Heat of Combustion: (est.) –16,600 Btu/lb = –9,300 cal/g = –387 X 10^5 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
35	51.690	34	0.501	42	1.109		N
40	51.480	36	0.502	44	1.109		O
45	51.270	38	0.503	46	1.109		T
50	51.060	40	0.504	48	1.109		
55	50.850	42	0.505	50	1.109		P
60	50.650	44	0.507	52	1.109		E
65	50.440	46	0.508	54	1.109		R
70	50.230	48	0.509	56	1.109		T
75	50.020	50	0.510	58	1.109		I
80	49.810	52	0.511	60	1.109		N
85	49.610	54	0.512	62	1.109		E
90	49.400	56	0.513	64	1.109		N
95	49.190	58	0.514	66	1.109		T
100	48.980	60	0.515	68	1.109		
105	48.770	62	0.517	70	1.109		
110	48.570	64	0.518	72	1.109		
115	48.360	66	0.519	74	1.109		
120	48.150	68	0.520	76	1.109		
125	47.940	70	0.521	78	1.109		
130	47.730	72	0.522	80	1.109		
135	47.520	74	0.523	82	1.109		
140	47.320	76	0.524	84	1.109		
		78	0.525				
		80	0.527				
		82	0.528				
		84	0.529				

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	1.600	60	0.073	60	0.00133	0	0.347
		70	0.103	70	0.00186	25	0.362
		80	0.145	80	0.00255	50	0.377
		90	0.200	90	0.00347	75	0.391
		100	0.274	100	0.00467	100	0.405
		110	0.371	110	0.00620	125	0.420
		120	0.497	120	0.00816	150	0.433
		130	0.659	130	0.01063	175	0.447
		140	0.864	140	0.01372	200	0.460
		150	1.124	150	0.01756	225	0.473
		160	1.450	160	0.02227	250	0.486
		170	1.854	170	0.02803	275	0.499
		180	2.353	180	0.03502	300	0.511
		190	2.964	190	0.04343	325	0.523
		200	3.707	200	0.05349	350	0.535
		210	4.605	210	0.06545	375	0.547
		220	5.682	220	0.07958	400	0.558
		230	6.969	230	0.09619	425	0.569
		240	8.497	240	0.11560	450	0.580
		250	10.300	250	0.13820	475	0.591
		260	12.420	260	0.16430	500	0.602
		270	14.900	270	0.19440	525	0.612
		280	17.780	280	0.22880	550	0.622
		290	21.120	290	0.26820	575	0.632
		300	24.970	300	0.31290	600	0.642