1-HEXENE

HXE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
alpha-Hexene
Hexylene

Watery liquid Colorless Mild pleasant odor

Floats on water. Flammable, irritating vapor is produced.

Keep people away.
Shut off ignition sources and call fire department.
Avoid contact with liquid and vapor.
Stay upwind and use water spray to ``knock down'' 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
If inhaled, will cause dizziness, difficult breathing, or loss of consciousness.
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.
DO NOT INDUCE VOMITING.

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
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 30; Olefin
2.2 Formula: $CH_2(CH_2)_3CH = CH_2$
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: 2370
2.5 CAS Registry No.: 592-41-6
2.6 NAERG Guide No.: 128
2.7 Standard Industrial Trade Classification: 51119

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Approved organic vapor respirator or air-line mask; protective goggles or face shield.
3.2 Symptoms Following Exposure: Inhalation may cause giddiness or incoordination similar to that from gasoline vapor. Prolonged exposure to high concentrations may induce loss of consciousness or death.
3.3 Treatment of Exposure: SKIN OR EYES: wash exposed skin areas with soap and water; thoroughly flush eyes with water to remove any splashes; launder contaminated clothing before reuse.
3.4 TLV-TWA: Notice of intended change: 30 ppm
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: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Slight smarting of the eyes or respiratory system if present in high concentrations. Effect is temporary.
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: -15°F C.C.
4.2 Flammable Limits in Air: LEL (est.) = 1.2%; UEL not listed
4.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Not pertinent
4.7 Auto Ignition Temperature: 521°F
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: 8.1 mm/min.
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): 12.0 (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): 1.5%, 7 days
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: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical, 95-98%; Pure, 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: (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: II
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: 84.16
9.3 Boiling Point at 1 atm: 146.3°F = 63.5°C = 336.7°K
9.4 Freezing Point: –219.6°F = –139.8°C = 133.4°K
9.5 Critical Temperature: 447.4°F = 230.8°C = 504°K
9.6 Critical Pressure: 460 psia = 31.3 atm = 3.17 MN/m^2
9.7 Specific Gravity: 0.673 at 20°C (liquid)
9.8 Liquid Surface Tension: 18.8 dynes/cm = 0.0188 N/m at 20°C
9.9 Liquid Water Interfacial Tension: 31.6 dynes/cm = 0.0316 N/m at 22.7°C
9.10 Vapor (Gas) Specific Gravity: 2.9
9.11 Ratio of Specific Heats of Vapor (Gas): 1.068
9.12 Latent Heat of Vaporization: 140 Btu/lb = 80 cal/g = 3.3 X 10^5 J/kg
9.13 Heat of Combustion: –19,134 Btu/lb = –10,630 cal/g = –445.06 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	
Temperature (degrees F)	Pounds per cubic foot
35	43.100
40	42.930
45	42.770
50	42.600
55	42.440
60	42.270
65	42.110
70	41.940
75	41.780
80	41.620
85	41.450
90	41.290
95	41.120
100	40.960
105	40.790
110	40.630
115	40.460
120	40.300
125	40.130
130	39.970
135	39.800
140	39.640

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
0	0.488
10	0.492
20	0.497
30	0.501
40	0.505
50	0.510
60	0.514
70	0.518
80	0.523
90	0.527
100	0.531
110	0.536
120	0.540
130	0.544
140	0.549

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
0	0.937
5	0.931
10	0.924
15	0.917
20	0.910
25	0.903
30	0.896
35	0.889
40	0.882
45	0.876
50	0.869
55	0.862
60	0.855
65	0.848
70	0.841
75	0.834
80	0.827
85	0.821
90	0.814
95	0.807
100	0.800
105	0.793
110	0.786
115	0.779
120	0.772
125	0.766

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
70	0.257
75	0.251
80	0.245
85	0.240
90	0.234
95	0.229
100	0.224
105	0.219
110	0.214
115	0.210
120	0.206
125	0.202
130	0.198
135	0.194
140	0.190

9.24 SOLUBILITY IN WATER	
Temperature (degrees F)	Pounds per 100 pounds of water
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9.25 SATURATED VAPOR PRESSURE	
Temperature (degrees F)	Pounds per square inch
0	0.406
10	0.567
20	0.776
30	1.048
40	1.393
50	1.828
60	2.369
70	3.035
80	3.845
90	4.822
100	5.990
110	7.375
120	9.003
130	10.900
140	13.110
150	15.650
160	18.560
170	21.870
180	25.630
190	29.850
200	34.600
210	39.890

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
0	0.00693
10	0.00946
20	0.01269
30	0.01678
40	0.02186
50	0.02813
60	0.03575
70	0.04492
80	0.05586
90	0.06878
100	0.08391
110	0.10150
120	0.12180
130	0.14500
140	0.17140
150	0.20130
160	0.23480
170	0.27240
180	0.31410
190	0.36030
200	0.41120
210	0.46700

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
0	0.332
25	0.346
50	0.360
75	0.375
100	0.389
125	0.402
150	0.416
175	0.430
200	0.443
225	0.456
250	0.469
275	0.482
300	0.495
325	0.507
350	0.519
375	0.532
400	0.544
425	0.555
450	0.567
475	0.578
500	0.590
525	0.601
550	0.612
575	0.623
600	0.633