POLYBUTENE

PLB

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Butene resins Polyisobutylene plastics Polyisobutylene resins Polyisobutylene waxes	Oily liquid Floats on water.	Colorless	Odorless

Keep people away.
Call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	Combustible. Extinguish with dry chemical, foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	Not harmful.
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:
Absorb
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 30; Olefin
2.2 Formula: $[C(CH_3)_2CH_2]$
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: Not listed
2.7 Standard Industrial Trade Classification: 51119

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Goggles or face shield.
3.2 Symptoms Following Exposure: Low toxicity. Vapor may act as a simple asphyxiant in high concentration.
3.3 Treatment of Exposure: INHALATION: remove victim from exposure.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 0; LD_{50} above 15 g/kg (animals)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: None
3.10 Vapor (Gas) Irritant Characteristics: Vapors are nonirritating to the eyes and throat.
3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harmless to the skin.
3.12 Odor Threshold: Odorless
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: 215-470°F O.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Carbon dioxide, dry chemical, or foam
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: 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: 28.6 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 8.0 (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): Currently not available
6.4 Food Chain Concentration Potential: None
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 0
Human Oral hazard: 0
Human Contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

7.1 Grades of Purity: 85%-98%
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: Not listed
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: 225-2300
9.3 Boiling Point at 1 atm: Very high
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.81–0.91 at 15°C (liquid)
9.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C
9.9 Liquid Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C
9.10 Vapor (Gas) Specific Gravity: Not pertinent
9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
9.12 Latent Heat of Vaporization: Not pertinent
9.13 Heat of Combustion: (est.) –20,000 Btu/lb = –11,000 cal/g = -470×10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: (est.) –9 Btu/lb = –5 cal/g = 0.2×10^5 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
50	50.560
52	50.560
54	50.560
56	50.560
58	50.560
60	50.560
62	50.560
64	50.560
66	50.560
68	50.560
70	50.560
72	50.560
74	50.560
76	50.560
78	50.560
80	50.560
82	50.560
84	50.560

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
50	0.478
52	0.478
54	0.478
56	0.478
58	0.478
60	0.478
62	0.478
64	0.478
66	0.478
68	0.478
70	0.478
72	0.478
74	0.478
76	0.478
78	0.478
80	0.478
82	0.478
84	0.478

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
50	1.040
52	1.040
54	1.040
56	1.040
58	1.040
60	1.040
62	1.040
64	1.040
66	1.040
68	1.040
70	1.040
72	1.040
74	1.040
76	1.040
78	1.040
80	1.040
82	1.040
84	1.040

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
100	101.500

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
250	0.088
255	0.099
260	0.112
265	0.126
270	0.141
275	0.158
280	0.177
285	0.198
290	0.221
295	0.246
300	0.273
305	0.303
310	0.337
315	0.373
320	0.412
325	0.456
330	0.503
335	0.554
340	0.610
345	0.670
350	0.736
355	0.807
360	0.885
365	0.968
370	1.058
375	1.156

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
250	0.01157
255	0.01296
260	0.01449
265	0.01618
270	0.01803
275	0.02006
280	0.02229
285	0.02474
290	0.02741
295	0.03032
300	0.03350
305	0.03697
310	0.04074
315	0.04483
320	0.04928
325	0.05409
330	0.05931
335	0.06495
340	0.07104
345	0.07762
350	0.08471
355	0.09234
360	0.10060
365	0.10940
370	0.11880
375	0.12900

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
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