DODECYLBENZENE

DDB

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Detergent alkylate n-Dodecylbenzene Laurylbenzene 1-Phenyldodecane Ucane alkylate 12	Liquid	Colorless	Weak oily odor
	Floats on water.		

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

Fire	Combustible. Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire.
Exposure	Call for medical aid. 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

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

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 32; Aromatic Hydrocarbon
2.2 Formula: $C_6H_5(CH_2)_{11}CH_3$
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: 51129

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Goggles or face shield; rubber gloves.
3.2 Symptoms Following Exposure: Liquid causes mild irritation of eyes and may cause allergenic responses on repeated contact with skin. Ingestion causes nausea.
3.3 Treatment of Exposure: EYES: flush with water for at least 15 min.; get medical attention for persistent irritation. SKIN: wash with soap and water. INGESTION: do NOT induce vomiting; get medical attention.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Grade 1; LD_{50} = 5 to 15 g/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Vapors are nonirritating to eyes and throat.
3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harmless to 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: 275°F O.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Dry chemical, 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: Currently not available
4.9 Burning Rate: 3.7 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 121.4 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 33.0 (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: I
Reduction of amenities: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: Various mixtures containing 70-80% of undecyl-plus dodecyl-benzene, along with 10% decylbenzene and other analogous hydrocarbons.
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: Data not avialable
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: 240
9.3 Boiling Point at 1 atm: 550°F = 288°C = 561°K
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.860 at 20°C (liquid)
9.8 Liquid Surface Tension: 30.12 dynes/cm = 0.0301 N/m at 20°C
9.9 Liquid Water Interfacial Tension: (est.) 30 dynes/cm = 0.030 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: 150 Btu/lb = 82 cal/g = 3.4 X 10^5 J/kg
9.13 Heat of Combustion: –18,100 Btu/lb = –10,000 cal/g = –418 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: 4.1 psia

NOTES

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9.20 SATURATED LIQUID DENSITY	
Temperature (degrees F)	Pounds per cubic foot
34	54.510
36	54.460
38	54.410
40	54.360
42	54.310
44	54.270
46	54.220
48	54.170
50	54.120
52	54.070
54	54.020
56	53.970
58	53.930
60	53.880
62	53.830
64	53.780
66	53.730
68	53.680
70	53.630
72	53.590
74	53.540
76	53.490
78	53.440
80	53.390
82	53.340
84	53.290

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
52	0.450
54	0.450
56	0.450
58	0.450
60	0.450
62	0.450
64	0.450
66	0.450
68	0.450
70	0.450
72	0.450
74	0.450
76	0.450
78	0.450
80	0.450
82	0.450
84	0.450
86	0.450

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
52	1.048
54	1.048
56	1.048
58	1.048
60	1.048
62	1.048
64	1.048
66	1.048
68	1.048
70	1.048
72	1.048
74	1.048
76	1.048
78	1.048
80	1.048
82	1.048
84	1.048
86	1.048

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
35	9.773
40	8.976
45	8.258
50	7.611
55	7.025
60	6.494
65	6.012
70	5.574
75	5.176
80	4.812
85	4.480
90	4.176
95	3.898
100	3.643
105	3.409
110	3.193
115	2.994
120	2.811

9.24 SOLUBILITY IN WATER	
Temperature (degrees F)	Pounds per 100 pounds of water
	INSOLUBLE

9.25 SATURATED VAPOR PRESSURE	
Temperature (degrees F)	Pounds per square inch
	NOT PERTINENT

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
	NOT PERTINENT

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
0	0.313
10	0.319
20	0.325
30	0.330
40	0.336
50	0.342
60	0.347
70	0.353
80	0.358
90	0.364
100	0.370
110	0.375
120	0.381
130	0.386
140	0.392
150	0.398
160	0.403
170	0.409
180	0.414
190	0.420
200	0.426
210	0.431
220	0.437
230	0.442
240	0.448
250	0.454