N-AMYL CHLORIDE

AMY

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Amyl chloride
n-Butylcarbinyl chloride
Chloride of amyl
1-Chlorpentane
1-Pentyl chloride

Liquid | Colorless to purple | Pleasant odor

Floats on water. Flammable vapor is produced.

Shut off ignition sources. Call fire department.
Stop discharge if possible. Keep people away.
Evacuate area in case of large discharge.
Isolate and remove discharged material.
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.
Irritating gases may be produced when heated.
Extinguish with dry chemicals, foam or carbon dioxide.
Water may be ineffective on fire.

Exposure

Call for medical aid.

VAPOR
Irritating to eyes, nose and throat.
Move victim to fresh air.

LIQUID
Irritating to skin and eyes.
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
Clean shore line
Salvage waterfowl
Do not burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed
2.2 Formula: $CH_3CH_2CH_2CH_2CH_2Cl$
2.3 IMO/UN Designation: 3.2/1107
2.4 DOT ID No.: 1107
2.5 CAS Registry No.: 543-59-9
2.6 NAERG Guide No.: 129
2.7 Standard Industrial Trade Classification: 51139

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Protective goggles or face shield; rubber gloves.
3.2 Symptoms Following Exposure: Inhalation causes mild irritation of mucous membranes. Ingestion of liquid or contact with skin or eyes causes mild irritation.
3.3 Treatment of Exposure: INHALATION: remove to fresh air; apply artificial respiration if required. EYES: flush with water. SKIN: wash well with soap and water. INGESTION: induce vomiting; give 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 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 cause a slight smarting of the eyes or respiratory system if present in high concentrations. 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: 55°F O.C. 34°F C.C.
4.2 Flammable Limits in Air: 1.4%-8.6%
4.3 Fire Extinguishing Agents: Dry chemical, foam, carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
4.5 Special Hazards of Combustion Products: Irritating hydrogen chloride and toxic phosgene may be formed in fires.
4.6 Behavior in Fire: Not pertinent
4.7 Auto Ignition Temperature: 500°F
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: 4.9 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: 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: -
Damage to living resources: -
Human Oral hazard: -
Human Contact hazard: -
Reduction of amenities: -

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: 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: 106.6
9.3 Boiling Point at 1 atm: 226°F = 108°C = 381°K
9.4 Freezing Point: –146°F = –99°C = 174°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.8834 at 20°C (liquid)
9.8 Liquid Surface Tension: 24.9 dynes/cm = 0.0249 N/m at 20°C
9.9 Liquid Water Interfacial Tension: (est.) 35 dynes/cm = 0.035 N/m at 20°C
9.10 Vapor (Gas) Specific Gravity: 3.7
9.11 Ratio of Specific Heats of Vapor (Gas): 1.0650
9.12 Latent Heat of Vaporization: 132.1 Btu/lb = 73.40 cal/g =3.073 X 10^5 J/kg
9.13 Heat of Combustion: –13,500 Btu/lb = –7,500 cal/g = –314 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	56.200
40	56.030
45	55.850
50	55.680
55	55.510
60	55.330
65	55.160
70	54.990
75	54.810
80	54.640
85	54.470
90	54.290
95	54.120
100	53.950

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
34	0.391
36	0.392
38	0.393
40	0.394
42	0.396
44	0.397
46	0.398
48	0.399
50	0.400
52	0.401
54	0.402
56	0.403
58	0.404
60	0.406
62	0.407
64	0.408
66	0.409
68	0.410

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
35	0.811
40	0.811
45	0.811
50	0.811
55	0.811
60	0.811
65	0.811
70	0.811
75	0.811
80	0.811
85	0.811
90	0.811
95	0.811
100	0.811

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
32	1.037
34	1.005
36	0.974
38	0.945
40	0.916
42	0.889
44	0.863
46	0.838
48	0.813
50	0.790
52	0.767
54	0.746
56	0.725
58	0.704
60	0.685
62	0.666
64	0.648
66	0.630
68	0.613
70	0.597
72	0.581
74	0.566
76	0.551
78	0.537
80	0.523

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
80	0.654
90	0.864
100	1.126
110	1.452
120	1.852
130	2.340
140	2.928
150	3.632
160	4.469
170	5.455
180	6.611
190	7.955
200	9.510
210	11.300
220	13.340
230	15.670
240	18.300
250	21.270
260	24.600
270	28.320
280	32.460

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
80	0.01204
90	0.01560
100	0.01998
110	0.02531
120	0.03173
130	0.03940
140	0.04849
150	0.05916
160	0.07161
170	0.08603
180	0.10260
190	0.12160
200	0.14320
210	0.16750
220	0.19490
230	0.22560
240	0.25980
250	0.29760
260	0.33950
270	0.38550
280	0.43580

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
100	0.318
120	0.326
140	0.334
160	0.342
180	0.349
200	0.357
220	0.364
240	0.371
260	0.379
280	0.386
300	0.393
320	0.400
340	0.406
360	0.413
380	0.420
400	0.426
420	0.433
440	0.439