VINYL METHYL ETHER

VME

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Methoxyethylene Methyl vinyl ether	Gas	Colorless	Sweet pleasant odor
	Floats and may boil on water. Boiling point is 54°F.		

Evacuate.
Keep people away.
Avoid contact with gas.
Shut off ignition sources. Call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

FLAMMABLE.
Containers may explode in fire.
Flashback along vapor trail may occur.
Vapor may explode if ignited in an enclosed area.
DO NOT USE WATER ON FIRE.
Let fire burn.
Stop flow of gas if possible.
Cool exposed containers and protect men effecting shutoff with water.

Exposure

Call for medical aid.

VAPOR
Irritating to eyes, nose and throat.
If inhaled will cause headache, dizziness, or loss of consciousness.
Move victim to fresh air.
If breathing is difficult, give oxygen.

LIQUID
Irritating to eyes.
Will cause frostbite.
Harmful if swallowed.
DO NOT RUB AFFECTED AREAS.
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.
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
Collection Systems: Dredge
Chemical and Physical Treatment: Burn

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: CH_2=CH-O-CH_3
2.3 IMO/UN Designation: 2/1087
2.4 DOT ID No.: 1087
2.5 CAS Registry No.: 107-25-5
2.6 NAERG Guide No.: 116P
2.7 Standard Industrial Trade Classification: 51616

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Organic-vapor mask; plastic or rubber gloves; safety glasses
3.2 Symptoms Following Exposure: Inhalation causes intoxication, blurring of vision, headache, dizziness, excitation, loss of consciousness. Liquid or concentrated vapor irritates eyes and causes frostbite of skin. Aspiration of the liquid will cause chemical pneumonitis.
3.3 Treatment of Exposure: INHALATION: remove victim to fresh air; if breathing is difficult, administer oxygen; call physician. EYES: wash with copious quantities of water; consult an eye specialist. SKIN: wash with copious quantities of water; treat frostbite by use of warm water or blankets. 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 2; LD_{50} = 0.5 to 5 g/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
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: –69°F O.C.
4.2 Flammable Limits in Air: 2.6%-39%
4.3 Fire Extinguishing Agents: Let fire burn; shut off gas flow; extinguish small fires with 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: Containers may explode. Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back.
4.7 Auto Ignition Temperature: 549°F
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: Not pertinent
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 19.0 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 6.0 (calc.)
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: Reacts slowly to form acetaldehyde; reaction is not hazardous unless water is hot or acids are present.
5.2 Reactivity with Common Materials: Acids will cause polymerization.
5.3 Stability During Transport: Stable if kept free from acids
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
5.5 Polymerization: Can polymerize in the presence of acids.
5.6 Inhibitor of Polymerization: Dioctylamine; Triethanolamine; Solid potassium hydroxide

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: -
Human Oral hazard: 1
Human Contact hazard: 0
Reduction of amenities: X

7. SHIPPING INFORMATION

7.1 Grades of Purity: 99.7+%
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Safety relief
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 gas
8.2 49 CFR Class: 2.1
8.3 49 CFR Package Group: Not pertinent.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	4
Instability (Yellow).....	2

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: Gas
9.2 Molecular Weight: 58.1
9.3 Boiling Point at 1 atm: 41.9°F = 5.5°C = 278.7°K
9.4 Freezing Point: –188°F = –122°C = 151°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.777 at 0°C (liquid)
9.8 Liquid Surface Tension: (est.) 10 dynes/cm = 0.010 N/m at 0°C
9.9 Liquid Water Interfacial Tension: (est.) 25 dynes/cm = 0.025 N/m at 0°C
9.10 Vapor (Gas) Specific Gravity: 2.0
9.11 Ratio of Specific Heats of Vapor (Gas): (est.) 1.1473
9.12 Latent Heat of Vaporization: (est.) 180 Btu/lb = 100 cal/g = 4.2 X 10^5 J/kg
9.13 Heat of Combustion: (est.) –14,200 Btu/lb = –7,900 cal/g = –330 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: Currently not available
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
10	49.490	16	0.350	16	0.806	16	0.280
15	49.270	18	0.350	18	0.806	18	0.276
20	49.040	20	0.350	20	0.806	20	0.273
25	48.820	22	0.350	22	0.806	22	0.270
30	48.590	24	0.350	24	0.806	24	0.266
35	48.370	26	0.350	26	0.806	26	0.263
40	48.140	28	0.350	28	0.806	28	0.260
		30	0.350	30	0.806	30	0.257
		32	0.350	32	0.806	32	0.254
		34	0.350	34	0.806	34	0.251
		36	0.350	36	0.806	36	0.248
		38	0.350	38	0.806	38	0.245
		40	0.350	40	0.806	40	0.242

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	2.000	40	14.020	40	0.15190	0	0.237
		50	17.230	50	0.18300	20	0.246
		60	21.010	60	0.21880	40	0.254
		70	25.420	70	0.25980	60	0.263
		80	30.540	80	0.30630	80	0.271
		90	36.450	90	0.35900	100	0.280
		100	43.240	100	0.41810	120	0.288
		110	50.970	110	0.48430	140	0.296
		120	59.750	120	0.55790	160	0.304
		130	69.669	130	0.63940	180	0.312
		140	80.809	140	0.72940	200	0.320
		150	93.280	150	0.82810	220	0.328
		160	107.200	160	0.93620	240	0.335
		170	122.599	170	1.05400	260	0.343
		180	139.699	180	1.18200	280	0.350
		190	158.500	190	1.32000	300	0.358
		200	179.099	200	1.47000	320	0.365
		210	201.699	210	1.63000	340	0.372
		220	226.400	220	1.80300	360	0.379
		230	253.199	230	1.98700	380	0.386
		240	282.199	240	2.18300	400	0.393
		250	313.699	250	2.39300	420	0.400
		260	347.699	260	2.61500	440	0.406
		270	384.199	270	2.85000	460	0.413
		280	423.399	280	3.09800	480	0.420
						500	0.426