DIMETHYL SULFATE

CAUTIONARY RESPONSE INFORMATION

Exposure

Liquid

POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED.

Will burn 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. DO NOT INDUCE VOMITING.

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.

Water Pollution

 жидкое

Colorless

Mild onion odor

Sinks and mixes slowly with water.

Evacuate. Keep people away. AVOID CONTACT WITH LIQUID. Wear goggles, self-contained breathing apparatus, and rubber clothing (including gloves).

Notify fire department. Notify local health and pollution control agencies. Protect water intakes.

Fire

Combustible.

POISONOUS GASES ARE PRODUCED WHEN HEATED. Wear goggles, self-contained breathing apparatus, and rubber clothing (including gloves).

Extinguish with water, foam, dry chemical, or carbon dioxide. Cool exposed containers with water. Notify local health and pollution control agencies. Notify local fire and police departments.

Evacuate. Call fire department.

Collection Systems: Pump; Dredge

Dilute and disperse

Protect water intakes.

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Chemical goggles, self-contained breathing apparatus; safety hat; rubber shoes; rubber suit; rubber gloves; safety shower and eye wash fountain.

3.2 Symptoms Following Exposure: Severe irritation to eyes, eyelids, respiratory tract and skin. Dry, painful cough; foamy, white sputum; difficulty in breathing; malaise and fever; inflammation and edema of lungs.

3.3 Treatment of Exposure: Contact with dimethylsulfate liquid or vapor (> 1 ppm) requires immediate treatment. Call a physician, even if there is no evidence of injury, as symptoms may not appear for several hours. INHALATION: get victim to fresh air immediately; administer 100% oxygen; even if no injury is apparent, and continue for 30 min, each hour for 6 hours; give artificial respiration if breathing is weak or fails, but do not interrupt oxygen therapy; if victim's coughing prevents use of a mask, use oxygen tent under atmospheric pressure. INGESTION: DO NOT induce vomiting. SKIN: wash thoroughly. EYE: flush with running water for at least 15 min.

3.4 TLV-TWA: 0.1 ppm

3.5 TLV-STEL: Not listed.

3.6 TLV-Ceiling: Not listed.

3.7 Toxicity by Ingestion: Grade 3; LD50 = 50 to 500 mg/kg (rat)

3.8 Toxicity by Inhalation: Currently not available.

3.9 Chronic Toxicity: Causes birth defects in rats. Malignant tumors in nervous system.

3.10 Vapor (Gas) Irritant Characteristics: Vapors cause severe irritation of eye and throat and can cause eye and lung injury. They cannot be tolerated even at low concentration.

3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second and third-degree burns on short contact; very injurious to the eyes.

3.12 Odor Threshold: Currently not available

3.13 IDLH Value: 7 ppm

3.14 OSHA PEL-TWA: 1 ppm

3.15 OSHA PEL-STEL: Not listed.

3.16 OSHA PEL-Ceiling: Not listed.

3.17 EPA AEGI: Not listed

4. FIRE HAZARDS

4.1 Flash Point: 240°F O.C. 182°F C.C.

4.2 Flammable Limits in Air: Currently not available

4.3 Fire Extinguishing Agents: Water, foam, carbon dioxide or dry chemical

4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent

4.5 Special Hazards of Combustion Products: Flammable, toxic vapors generated

4.6 Behavior in Fire: Not pertinent

4.7 Auto Ignition Temperature: 378°F

4.8 Electrical Hazards: Not pertinent

4.9 Burning Rate: Currently not available

4.10 Abnormal Flame Temperature: Currently not available

4.11 Stoichiometric Air to Fuel Ratio: 11.9 (calc.)

4.12 Flame Temperature: Currently not available

4.13 Combustion Molar Ratio (Reactor to Product): 6.0 (calc.)

4.14 Minimum Oxygen Concentration for Combustion (MOOC): Not listed

5. CHEMICAL REACTIVITY

5.1 Reactivity with Water: Slow, non-hazardous reaction

5.2 Reactivity with Common Materials: Corrodes metal when wet

5.3 Stability During Transport: Stable

5.4 Neutralizing Agents for Acids and Caustics: Sodium bicarbonate or lime

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: 2

Human Oral Hazard: 2

Human Contact hazard: II

Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical

7.2 Storage Temperature: Ambient

7.3 Inert Atmosphere: No requirement

7.4 Venting: Pressure-vacuum

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: Poison

8.2 49 CFR Class: 6.1

8.3 49 CFR Package Group: I

8.4 Marine Pollutant: Not pertinent

8.5 NFPA Hazard Classification:

Category Classification

Health Hazard (Blue)............ 4

Flammability (Red)............. 2

Instability (Yellow)............. 0

8.6 EPA Reportable Quantity: 100 pounds

8.7 EPA Pollution Category: B

8.8 RODA Waste Number: U013

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: 126.13

9.3 Boiling Point at 1 atm: 371.8°F = 188.8°C = 462.2°F

9.4 Freezing Point: −25.2°F = −31.8°C = 241.9°F

9.5 Critical Temperature: Not pertinent

9.6 Critical Pressure: Not pertinent

9.7 Specific Gravity: 1.33 at 15°C (liquid)

9.8 Liquid Surface Tension: 40.1 dynes/cm = 0.0401 N/m at 18°C

9.9 Liquid Water Interfacial Tension: (est.) 20 dynes/cm = 0.02 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: Not pertinent

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

JUNE 1999
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