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Material Safety Data Sheet

Acetal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Acetal

Catalog Codes: SLA3655

CAS#: 105-57-7

RTECS: AB2800000

TSCA: TSCA 8(b) inventory: Acetal

CI#: Not available.

Synonym: 1,1-Diethoxyethane; Diethyl acetal, Ethylidene diethyl ether; Ethane, 1,1-diethoxy-

Chemical Name: Acetaldehyde, diethyl acetal

Chemical Formula: C6-H14-O2

Contact Information:

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14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Acetal	105-57-7	100

Toxicological Data on Ingredients: Acetal: ORAL (LD50): Acute: 4600 mg/kg [Rat]. 3500 mg/kg [Mouse]. 3545 mg/kg [Rabbit]. DERMAL (LD50): Acute: 10000 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Not available.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: Not available.

Flash Points: CLOSED CUP: -21°C (-5.8°F).

Flammable Limits: LOWER: 1.6% UPPER: 10.4%

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances:

Highly flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat. Non-explosive in presence of shocks.

Fire Fighting Media and Instructions:

Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards:

May form explosive mixtures with air. May form explosive peroxides on prolonged storage. Vapor may travel considerable distance to source of ignition and flash back.

Special Remarks on Explosion Hazards:

Vapor may form explosive mixtures with air. May form explosive peroxides on prolonged storage.

Section 6: Accidental Release Measures

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:

Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.

Storage:

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Safety glasses. Lab coat.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Pungent, Green, Woody Solvent

Taste: Whiskey

Molecular Weight: 118.18 g/mole

Color: Clear Colorless.

pH (1% soln/water): Not available.

Boiling Point:

102.7°C (216.9°F) @ 760 mm Hg. 66.3 deg. C @ 200 mm Hg. 39.8 deg. C @ 60 mm Hg. 31.9 deg. C @ 40 mm Hg. 19.6 deg. C @ 20 mm Hg.

Melting Point: -100°C (-148°F)

Critical Temperature: Not available.

Specific Gravity: 0.8254 (Water = 1)

Vapor Pressure: 3.7 kPa (@ 25°C)

Vapor Density: 4.08 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 0.8

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:

Soluble in acetone. Partially soluble in cold water. Miscible with alcohol, ether. Soluble in heptane, methylcyclohexane, ethyl acetate, propyl alcohol, isopropyl alcohol, butyl alcohol, isoputyl alcohol. Soluble in chloroform. Solubility in water: 100 g of water dissolves 5 g acetal.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, acids.

Corrosivity: Not available.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation.

Toxicity to Animals:

Acute oral toxicity (LD50): 3500 mg/kg [Mouse]. Acute dermal toxicity (LD50): 10000 mg/kg [Rabbit].

Chronic Effects on Humans: May cause damage to the following organs: central nervous system (CNS).

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals:

Lowest Published Lethal Dose: LCL [Rat] - Route: Inhalation; Dose: 4000 ppm/4H

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes slight irritation. Eyes: Causes slight eye irritation. Inhalation: Inhalation of high concentrations of mist or vapor may affect behavior/central nervous system and cause central nervous system depression and narcotic effects. Ingestion: May cause gastrointestinal tract irritation with nausea, vomiting and diarrhea. Chronic Potential Health Effects: Skin: Prolonged skin contact can cause drying and cracking of the skin. Inhalation: Repeated exposure can damage the nervous system

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Acetal UNNA: 1088 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut hazardous material survey.: Acetal Pennsylvania RTK: Acetal Massachusetts RTK: Acetal Massachusetts spill list: Acetal New Jersey: Acetal TSCA 8(b) inventory: Acetal

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada): CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

DSCL (EEC):

R11- Highly flammable. R36/38- Irritating to eyes and skin. S9- Keep container in a well-ventilated place. S16- Keep away from sources of ignition - No smoking. S33- Take precautionary measures against static discharges.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 3

Reactivity: 0

Personal Protection: a

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:

Not applicable. Lab coat. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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