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Material Safety Data Sheet

Vinylmagnesium Chloride, 15% in Tetrahydrofuran MSDS

Section 1: Chemical Product and Company Identification

Product Name: Vinylmagnesium Chloride, 15% in Tetrahydrofuran

Catalog Codes: SLV1189

CAS#: Mixture.

RTECS: Not applicable.

TSCA: TSCA 8(b) inventory: Tetrahydrofuran

CI#: Not available.

Synonym: Vinylmagnesium Chloride, 15%(w/w) Solution in Tetrahydrofuran

Chemical Name: Not applicable.

Chemical Formula: Not applicable.

Contact Information:

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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
Vinylmagnesium Chloride	3536-96-7	15
Tetrahydrofuran	109-99-9	85

Toxicological Data on Ingredients: Vinylmagnesium Chloride LD50: Not available. LC50: Not available. Tetrahydrofuran: ORAL (LD50): Acute: 1650 mg/kg [Rat]. VAPOR (LC50): Acute: 21000 mg/m 3 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects: Very hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (corrosive), of eye contact (corrosive). Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Tetrahydrofuran]. Mutagenic for bacteria and/or yeast. [Tetrahydrofuran]. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, lungs,

liver, upper respiratory tract, skin, eyes, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

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 immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

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

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. **WARNING:** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: The lowest known value is 321°C (609.8°F) (Tetrahydrofuran).

Flash Points: CLOSED CUP: -17°C (1.4°F).

Flammable Limits: The greatest known range is LOWER: 2% UPPER: 11.8% (Tetrahydrofuran)

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 mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat.

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. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Vapor may travel considerable distance to source of ignition and flash back. May form explosive mixtures with air. (Tetrahydrofuran)

Special Remarks on Explosion Hazards: Reacts explosively with lithium-aluminum alloys, and Sodium Aluminum Hydride, Potassium hydroxide, Calcium Hydride. It is normally stable, however, prolonged storage, and exposure to air and light may cause formation of unstable explosive peroxides especially when anhydrous and unless it is inhibited against peroxide formation. Explosive in the form of vapor when exposed to heat or flame. (Tetrahydrofuran)

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. Corrosive 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 get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions: Keep container dry. 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. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water. Do not allow water to get into container because of violent reaction.

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 workstation location.

Personal Protection: Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Tetrahydrofuran TWA: 590 STEL: 737 (mg/m³) from ACGIH (TLV) [United States] Inhalation TWA: 200 STEL: 250 (ppm) from ACGIH (TLV) [United States] Inhalation TWA: 590 STEL: 735 (mg/m³) from NIOSH [United States] Inhalation TWA: 200 STEL: 250 (ppm) from NIOSH [United States] Inhalation TWA: 200 STEL: 250 (ppm) from OSHA (PEL) [United States] Inhalation TWA: 590 STEL: 735 (mg/m³) from OSHA (PEL) [United States] Inhalation TWA: 100 STEL: 200 (ppm) [United Kingdom (UK)] Inhalation TWA: 300 STEL: 599 (mg/m³) [United Kingdom (UK)] Inhalation Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: Not applicable.

Color: Brown.

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

Boiling Point: 66°C (150.8°F)

Melting Point: May start to solidify at -108.3°C (-162.9°F) based on data for: Tetrahydrofuran.

Critical Temperature: The lowest known value is 267°C (512.6°F) (Tetrahydrofuran).

Specific Gravity: 0.975 (Water = 1)

Vapor Pressure: The highest known value is 19.3 kPa (@ 20°C) (Tetrahydrofuran).

Vapor Density: 2.99 (Air = 1)

Volatility: 100% (v/v). (Tetrahydrofuran.)

Odor Threshold: The highest known value is 20 - 50 ppm (Tetrahydrofuran)

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, diethyl ether, acetone.

Solubility: Easily soluble in diethyl ether, acetone.. Reacts with water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources, exposure to moist air or water, prolonged exposure to air and light

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, acids, alkalis. Slightly reactive to reactive with moisture. The product reacts violently with water to emit flammable but non toxic gases.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Incompatible with bases, acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), strong oxidizing agents, strong reducing agents. Tetrahydrofuran reacts violently with Bromine. Addition of anhydrous chlorides (hafnium tetrachloride, titanium tetrachloride, and zirconium tetrachloride) directly to tetrahydrofuran will cause a violent exothermic reaction. Tetrahydrofuran is also incompatible with Calcium Hydride + heat, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), metal halides, moisture, lithium tetrahydroaluminate, borane, 2-aminophenol + potassium dioxide, sodium tetrahydroaluminate, and 2-aminophenol. Prolonged exposure of tetrahydrofuran to air and light may form unstable peroxides especially when anhydrous and unless it is inhibited against peroxide formation.

Special Remarks on Corrosivity: It will attack some forms of plastics, rubber, coatings. (Tetrahydrofuran)

Polymerization: Will not occur.

Section 11: Toxicological Information

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

Toxicity to Animals: Acute oral toxicity (LD50): 1650 mg/kg [Rat]. (Tetrahydrofuran).

Chronic Effects on Humans: MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Tetrahydrofuran]. Mutagenic for bacteria and/or yeast. [Tetrahydrofuran]. Contains material which may cause damage to the following organs: blood, kidneys, lungs, liver, upper respiratory tract, skin, eyes, central nervous system (CNS).

Other Toxic Effects on Humans: Very hazardous in case of skin contact (irritant), of ingestion, . Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Causes skin irritation. May be absorbed through skin and cause symptoms similar those of inhalation and ingestion. Eyes: Contact with eyes may cause

severe irritation with possible eye burns. Vapors may cause eye irritation. Inhalation: May cause upper respiratory tract (nose, throat) irritation. High concentrations may affect behavior/central nervous system (central nervous system depression/ effects characterized by headache, general anesthetic, dizziness, somnolence, muscle weakness, loss of consciousness, and coma), respiration (respiratory stimulation, dyspnea), and gastrointestinal tract (nausea, vomiting). Ingestion: May cause gastrointestinal irritation with nausea, vomiting, and diarrhea, abdominal pain. May also affect the liver and behavior/central nervous system with symptoms similar to inhalation. Chronic Potential Health Effects: Skin: Prolonged or repeated skin contact may cause defatting and dermatitis. Eyes: Prolonged or repeated eye contact may cause conjunctivitis. Inhalation: Prolonged or repeated exposure to vapors may affect the liver, kidneys, musculoskeletal system, endocrine system (spleen and thymus), blood, cardiovascular system, thymus, spleen, and lungs (lung damage). Ingestion: Prolonged or repeated exposure from ingestion may affect the blood, and metabolism. (Tetrahydrofuran)

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 products of degradation are less toxic than the product itself.

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. Class 8: Corrosive material

Identification: : Flammable liquid, corrosive (Vinylmagnesium Chloride; Tetrahydrofuran (Tetrahydrofuran) UNNA: 2924 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations: Connecticut hazardous material survey.: Tetrahydrofuran Illinois toxic substances disclosure to employee act: Tetrahydrofuran Illinois chemical safety act: Tetrahydrofuran New York release reporting list: Tetrahydrofuran Rhode Island RTK hazardous substances: Tetrahydrofuran Pennsylvania RTK: Tetrahydrofuran Minnesota: Tetrahydrofuran Massachusetts RTK: Tetrahydrofuran Massachusetts spill list: Tetrahydrofuran New Jersey: Tetrahydrofuran New Jersey spill list: Tetrahydrofuran Louisiana spill reporting: Tetrahydrofuran TSCA 8(b) inventory: Tetrahydrofuran CERCLA: Hazardous substances.: Tetrahydrofuran: 1000 lbs. (453.6 kg);

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). CLASS E: Corrosive liquid.

DSCL (EEC): R11- Highly flammable. R15- Contact with water liberates extremely flammable gases. R19- May form explosive peroxides. R34- Causes burns. S7/8- Keep container tightly closed and dry. S16- Keep away from sources of ignition - No smoking. S29- Do not empty into drains. S30- Never add water to this product. S33- Take precautionary measures against static discharges. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 3

Reactivity: 1

Personal Protection:

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

Health: 3

Flammability: 3

Reactivity: 2

Specific hazard:

Protective Equipment: Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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