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MATERIAL SAFETY DATA SHEET

Trade name: Chem-Coat 9-542-1 POLY / Chem-Coat 9-542-1 ISO

CHEMICAL FAMILY: POLYURETHANE

TRANSPORTATION EMERGENCY ASSISTANCE / CALL CHEMTREC / 1 (800) 424 - 9300

NFPA HAZARD RATING

| | POLY | ISO |
|----|------|-----|
| H | 0 | 2 |
| F | 0 | 0 |
| R | 0 | 1 |
| PP | I | I |

DEGREE OF HAZARD: 4=EXTREME 3=HIGH 2=MODERATE 1=SLIGHT 0=INSIGNIFICANT

SECTION II (HAZARDOUS SUBSTANCES)

HAZARDOUS INGREDIENTS

| SIDE | INGREDIENT | %BY WT | TLV | PEL | Vapor Pressure |
|------|---|--------|---------------------------------|---------|----------------|
| ISO | 4,4' Diphenylmethane diisocyanate* CAS# 101-68-8 | 15-25 | 0.02ppm | 0.02ppm | 0.0003mm HG |
| POLY | Diethyltoluenediamine CAS# 68479-98-1 | 0-15 | Not established by OSHA / ACGIH | | |

* THIS CHEMICAL IS SUBJECT TO SARA TITLE III, SECTION 313 REPORTING.

SECTION III (PHYSICAL DATA)

BOILING POINT: >300°F

EVAPORATION RATE: N/A

% VOLATILE BY VOLUME: Non-volatile

VAPOR DENSITY: N/A

WEIGHT PER GALLON: (542 POLY 8.67 lbs.)

(542 ISO 9.56 lbs.) *Weight per gallon differs with color.*

(Black used as standard.)

SECTION IV (FIRE & EXPLOSION HAZARD DATA)

FLASH POINT: Non-flammable liquids.

EXTINGUISHING MEDIA: Foam, CO₂, dry chemical, or water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters must wear self-contained breathing apparatus and full protective clothing to prevent contact with toxic and/or irritating fumes. Do not spray pool fires directly; a stream of water directed into hot, burning liquid can cause frothing.

UNUSUAL FIRE & EXPLOSION HAZARD: Contamination of "ISO" component with water will generate carbon dioxide gas with possible pressure build up in confined areas. Incomplete combustion may produce carbon monoxide. These products are non-flammable and will not explode from mechanical impact.

SECTION V (HEALTH HAZARD DATA)

Trade Name: Chem-Coat 9-542-1 ISO / Chem-Coat 9-542-1 POLY

THRESHOLD LIMIT VALUE: (ISO: 0.02 ppm) (POLY: N/A)

EFFECTS OF OVEREXPOSURE: Skin contact may cause irritation. Eye contact causes irritation, redness, tearing and blurred vision.

EMERGENCY & FIRST AID: Eye contact: Flush with water for at least 15 minutes and call a physician as soon as possible. Skin contact: Wash with soap and water and remove contaminated clothing. Ingestion: See a physician immediately.

PRIMARY ROUTES OF ENTRY: Dermal most likely. Routes of entry of solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

ACUTE OVEREXPOSURE EFFECTS: Eye contact with isocyanates may result in conjunctival irritation and mild corneal opacity. Skin contact may result in dermatitis, either irritative or allergic. Inhalation of MDI vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Airborne overexposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hyper-sensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed. Gastrointestinal symptoms include nausea, vomiting and abdominal pain.

CHRONIC OVEREXPOSURE EFFECTS: Results from a lifetime inhalation study in rats indicate that MDI aerosol was carcinogenic at 6 mg/m³, the highest dose tested. This is well above the recommended TLV of 5 ppb (0.05 mg/m³). Only irritation was noted at the lower concentration of 0.2 and 1 mg/m³. No birth defects or teratogenic effects were reported in a teratology study with rats exposed to 1, 4, and 12 mg/m³ polymeric MDI for 6 hr/day on days 6-25 of gestation. Embryotoxicity and fetotoxicity was reported at the top dose in the presence of maternal toxicity. As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Sensitization may be either temporary or permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amount of liquid material, or even as a result of vapor-only exposure.

FIRST AID PROCEDURES – Aggravated Medical Conditions: Individuals who are sensitized to isocyanates and those with pre-existing lung diseases or conditions, including non-specific bronchial hyperreactivity or asthma, must avoid all exposure to isocyanates.

MEDICAL CONDITIONS PRONE TO: Repeated exposure can cause allergic reaction with development of occupational asthma. Long term repeated exposure to low vapor levels may cause chronically progressive pulmonary disease. Repeated skin contact can result in sensitization.

Note: Contains Diphenylmethane Diisocyanate inhalation of MDI mists or vapors may cause respiratory irritation, breathlessness, chest discomfort and reduced pulmonary function. Overexposure well above the PEL may result in bronchitis, bronchial spasms and pulmonary edema. Long-term exposure to isocyanates has been reported to cause lung damage, including reduced lung function which may be permanent. Acute or chronic overexposure to isocyanates may cause sensitization in some individuals, resulting in allergic respiratory reactions including wheezing,

SECTION VI (REACTIVITY DATA)

STABILITY: Stable

CONDITIONS TO AVOID: Temperature extremes and water.

INCOMPATIBILITY: Avoid contact with strong oxidizing agents, water, alcohols, amines, and strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Incomplete burning may produce carbon monoxide and/or carbon dioxide.

HAZARDOUS POLYMERIZATION: "ISO" component reacts slowly with water to produce carbon dioxide gas.

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SECTION VII (SPILL OR LEAK PROCEDURES)

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: In enclosed areas, cleanup personnel should wear self-contained breathing apparatus. Cover spills with sawdust, vermiculite, or other absorbent material to minimize spreading of the material before collecting. Do not heat or cut empty containers with electric or gas torch. "ISO" component must be neutralized with an equal volume of a 6% ammonia solution in water and allowed to react for 10 minutes. Collect into open containers and add more solution. Cover loosely to vent carbon dioxide gas generated.

WASTE DISPOSAL METHOD: Dispose in accordance with local, state, and federal regulations.

SECTION VIII (SPECIAL PROTECTION INFORMATION)

RESPIRATION PROTECTION: Use organic vapor cartridges with a mechanical filter to remove airborne particles. Use self-contained breathing apparatus in enclosed areas

VENTILATION (Local Exhaust): Mechanical

PROTECTIVE GLOVES: Chemical resistant plastic or rubber GLOVES.

EYE PROTECTION: Safety goggles or face shield.

OTHER PROTECTIVE EQUIPMENT: Eye bath & safety shower should be available.

SECTION IX (SPECIAL PRECAUTIONS & TOXICOLOGICAL PROPERTIES)

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING & STORING: Keep containers closed and store in a cool dry place away from direct sunlight.

TOXICOLOGICAL PROPERTIES: The International Isocyanate Institute is currently sponsoring a lifetime study on polymeric MDI in rats for carcinogenicity. Monomeric MDI is positive for mutagenicity in the Ames assay. Oral LD50 (rats) is greater than 15800 mg/Kg. Dermal LD50 (rabbits) is greater than 7900 mg/Kg. Inhalation LC50 (rats - 2hr) is greater than 400 mg/M3 on dust of monomeric MDI. Harmful or fatal if swallowed. Vapor harmful. May cause skin or eye irritation.

KEEP OUT OF REACH OF CHILDREN!!

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