

MATERIAL SAFETY DATA SHEETChemCo Systems, Inc., 2800 Bay Road, Redwood City, CA 94063-3503
Prepared by Dept. of Safety, Phone: 650/261-3790**24 Hour Emergency Phone: 800/424-9300 CHEMTREC****1. PRODUCT NAME:****CCS™ Coating, Polyurea Membrane, Part A**

Chemical Family: Urethane Prepolymers, Inert Fillers

2. HAZARDOUS INGREDIENTS

NAME	CAS No.	OSHA Ceiling	ACGIH TWA	CONTENT
Diphenylmethane-diisocyanate (MDI)	101-68-8	.002ppm	.005ppm	>15%
MDI	5873-54-1	N/D	N/D	>15%
MDI	26447-40-5	N/D	N/D	>15%
Urethane Prepolymer	39420-98-9	N/D	N/D	>45%
Phthalate Ester	68515-45-7	N/D	N/D	>15%

(N/D = Not determined) - Other ingredients not precisely identified are proprietary or non hazardous as defined in 29 CFR 1910.1200.
reference section 7, Health Hazard Data for LD (50)

5. REACTIVITY DATA:

HMIS Reactivity Rating: 1 - (Slight Hazard)	STABILITY: This product must be mixed with another component or water (moisture) to react. Excessive heat, fumes and foam generation can occur if improperly handled. Not sensitive to mechanical impact. Temperatures above 400 F may cause polymerization
INCOMPATIBILITY: Strong acids, strong bases. Amines, mercaptans, polyols, water and metal compounds may initiate possible hazardous reactions. Will cause corrosion of copper alloys and aluminum.	
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and dioxide, Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.	
HAZARDOUS POLYMERIZATION: May occur is product is not handled per instructions.	

6. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS AND LEAKS: Wear skin, eye and respiratory protection during cleanup. All operations should be performed by personal familiar with the hazards of the chemicals used. Soak up material with absorbent and shovel into waste container. Cover, but do not seal waste container and remove from work area. Make decontamination solution of .5% liquid detergent and 5% ammonium hydroxide or 7% sodium carbonate in water. Treat spill area with decontamination solution, using about 10 parts for each part of spilled material and allow to react for 10 minutes. Carbon dioxide will form, leaving insoluble polymer material. Wash residue into sewer, observing local regulation of discharging insoluble polymer materials.
WASTE DISPOSAL METHOD: Handle disposal of waste material in manner which complies with local, state, province, and federal regulations. Landfill if solidified or incinerate at agency approved waste-disposal facility. To solidify, mix product waste into decontamination solution described above using 10 parts of solution for each part of product waste. Let stand for 48 hours, allowing carbon dioxide that forms to escape. Neutralize waste. Neither the solid nor the liquid is a hazardous waste under RCRA, 40 CFR 261.
CONTAINER DISPOSAL METHOD: Containers must be thoroughly drained before removal to an appropriate area for decontamination. The decontamination area must be properly ventilated. Personnel must be properly protected from inhalation of isocyanate vapors and trained to handle decontamination operation. Spray or pour decontamination solution in an amount not exceeding 1/3 of the volume of the container into the container. Make sure the container is properly ventilated. Make sure the container walls are properly rinsed. Leave container soaking unsealed for 48 hours. Pour out decontamination solution and triple rinse the empty container. Note: The disposal of the decontaminated containers may be subject to federal, state or local regulations, ordinances or conditions of discharge permits. Puncture or other wise destroy the decontaminated containers before disposal.

7. HEALTH HAZARD DATA:

HMIS Health Rating: 3* - (Serious Hazard) * chronic	3* - (Serious Hazard) * chronic
Primary Route Of Entry Dermal	
SKIN CONTACT: Prolonged or repeated exposure may cause skin irritation and redness. Skin sensitization or allergic reaction (contact dermatitis) may occur in some individuals. LD(50) (rabbit) >5, <7.9 g/kg.	
INHALATION: No known health information on inhalation of vapors. Vapors and aerosols probably affect respiratory tract. MDI can induce respiratory irritation with asthma like symptoms. These symptoms may be immediate or delayed up to several hours after exposure. There are reports that long term exposure may result in decreased lung function. 4-Hour LC50(rats).37-.49 g/m ³ .	
INGESTION: Probable oral toxicity, LD(50) (rat), >10 g/kg. Irritation of the mouth, pharynx, esophagus and stomach can develop upon ingestion.	
EYES: Following contact irritation will take place.	
OTHER EFFECTS OF OVEREXPOSURE - CHRONIC CONDITIONS: In a recently completed study, groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres of respirable polymeric MDI aerosol. Tumor incidence, both benign and malignant, and the number of animals with tumors were not different from controls. There were no lung tumors at 1 mg/m ³ and no effects at .2 mg/m ³ . However, at the top level only of 6 mg/m ³ there was a significant incidence of a benign tumor of the lung (adenoma) and one malignant tumor (adenocarcinoma). The increased incidence for lung tumors is associated with the prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung which was observed throughout the study.	

8: FIRST AID:

INHALATION: Remove victim from exposure. If difficulty with breathing; administer oxygen and seek immediate medical assistance.
EYES: Flush with water, lifting upper and lower lids occasionally for 15 minutes. Seek medical attention.
SKIN: Wash with soap and water; get medical attention if irritation persists.
INGESTION: Do not give liquid if victim is unconscious or very drowsy. Otherwise, give no more than two glasses of water or milk and induce vomiting by administering 2 tablespoons of ipecac syrup or by touching finger to back of victim's throat. Keep victim's head below hips while vomiting. Seek medical attention.

3. PHYSICAL DATA:

Boiling Point:	>400 F	Water/Oil Distribution	N/D
Percent Volatile:	Negligible	Coefficient:	
Freezing Point	N/D	Solubility in Water:	Minimal
Vapor Pressure@ 20C:	N/D	Specific Gravity:	1.1
Vapor Density	N/D	pH:	N/D
Odor Threshold	N/D	Evaporation Rate:	N/D
Appearance	White paste	Odor	Mild

N/D = Not Determined

4. FIRE AND EXPLOSION HAZARD DATA:

HMIS Flammability Rating: 1 - (Slight Hazard)	
Flash Point:	>200 F (PMCC)
Auto Ignition Temperature:	N/D
Limits of Flammability:	LEL: N/D UEL: N/D
EXTINGUISHING MEDIA: CARBON DIOXIDE, FOAM, DRY CHEMICAL AND WATER FOG.	
SPECIAL FIRE & UNUSUAL HAZARDS: At high temperatures vapors can cause pressure build-up in sealed containers. Use water to cool containers exposed to fire. Self-contained respirator equipment and full protective clothing are required when smoke and fumes are generated. Electrical grounding is not recommended.	

9. SPECIAL PROTECTION INFORMATION:

HMIS Personal Protection Rating: C (Safety Glasses, Gloves, Apron)	
GENERAL: Minimize exposure as a good hygiene practice. NIOSH recommends .005 ppm TWA and .02 ppm STEL. These control limits do not apply to previously sensitized individuals or persons with existing chronic respiratory disease. Sensitized individuals should be removed from any further exposure.	
VENTILATION: Ventilation is recommended to keep vapors under TLV and OSHA limits.	
PERSONAL PROTECTION: Use eye protection. (chemical-tight goggles). Selection of specific items such as gloves, boots and apron will depend on the operation. Butyl or neoprene rubber garments have good resistance to permeation by MDI. Clothing constructed of polyethylene, latex rubber or PVC has limited resistance to permeation by MDI. Wash contaminated clothing before reuse.	
RESPIRATORY PROTECTION: When material is sprayed or heated and airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied air respirator with full face piece or an air supplied hood. For emergencies use a positive pressure self-contained breathing apparatus. Cartridge type air-purifying respirators are not approved against isocyanates.	

10. ADDITIONAL INFORMATION.

DOT Proper Shipping Name:	Other regulated Substances, Liquid, NOS. Product RQ 33333 lb.
Technical Shipping Name	Methylenediphenyldiisocyanate
DOT Hazard Class or Division:	9
UN Number:	3082
Packing Group:	III
Labels Required:	N/A
Title III Section 313 Reporting:	Contains: (CAS 101-68-8) Diphenylmethane-4,4'-diisocyanate
WHMIS Classification:	Class D, Div. 2, Sub. B.
WHMIS Symbol:	Stylized T
Storage Conditions:	Keep containers tightly sealed. Store in dry and cool areas. Do not allow to freeze.
Shelf life:	6 months minimum. (Unopened container)
Special Instructions:	Storage recommendations: Store at room temperature. Do not allow to freeze. 11/05