

Material Safety Data Sheet

Revision Date: 1/10/11

NA = Not Applicable NE = Not Established

Section 1. General Information

Product name: **IPANOL CWR "A"**
 Chemical name: Non Applicable
 Chemical family: Diisocyanate
 Synonyms: (MDI)
 Product Use: Concrete repair material

Manufacturer: **IPA Systems, Inc.**
 2745 North Amber Street, Philadelphia, Pa. 19134
 Phone: 800-523-3834 • 215-425-6607
 Fax: 215-425-6234
 E-mail: info@ipasystems.com
 Website: www.ipasystems.com

Emergency Phone Number - Chemtrec: 800-424-9300

Section 2. Hazards Ingredients/Sara III Information

<u>INGREDIENTS/CAS#</u>	<u>CONCENTRATION (%)</u>	<u>CURRENT TLV/PEL</u>
Polymeric Diphenylmethane Diisocyanate (Polymeric MDI) 9016-87-9	60-80	Not Listed
Contains 4.4-Diphenylmethane Diisocyanate (4.4MDI) (Approx. 50%) CAS# 101-68-8		ACGH.005PPM TWA
Aromatic Hydrocarbon Mixture (69009-90-1,29225-91-0)	<35	NE
NE: not established	ND: not determined	NA: not applicable

Section 3. Physical/Chemical Characteristics

Appearance and odor: Amber to brown liquid, slightly musty
 Odor Threshold: .4ppm (4.4' Diphenylmethane Diisocyanate)
 Melt Point/Freeze Point: N.E.
 V.O.C. %: 0
 Boiling Point: Decomposes @ 392°F
 Specific Gravity: 1.24
 Vapor Pressure: <0.0003 MM HG
 Vapor Density: (Air=1): 8.5
 Bulk Density: 10.17 ib/gal
 Solubility in water: Reacts with water

Material Safety Data Sheet

Revision Date: 1/10/11

NA = Not Applicable NE = Not Established

Section 4. Fire and Explosion Hazard Information

Flash Point: >320°F COC (Hydrocarbon)
Flammable Limits in Air By Volume: Lower (LEL): N/E Upper (UEL):N.E.
Auto Ignition Temperature: 465°F (Diphenylmethane Diisocyanate)
Rate Of Burning: N.E.
Explosive Power: None
Sensitivity to Mechanical Impact: None
Sensitivity to Static Discharge: None

COMBUSTION PRODUCTS: Carbon monoxide, carbon dioxide, nitrogen oxides

EXTINGUISHING MEDIA: Dry chemical extinguishers such as monoammonium phosphate, potassium sulfate, potassium chloride. Additionally, carbon dioxide, high expansion (protenic) chemical foam. Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES: Do not direct solid water stream or foam into hot, burning pools; this may cause frothing and increase fire intensity. Use self-contained breathing apparatus and body covering protective clothing; burning can produce oxides of carbon and nitrogen.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Contact with certain finely divided reactive materials may cause reactions. Decomposition products may be hazardous.

Section 5. Health Hazard Data

INHALATION: This product is a respiratory irritant and potential respiratory sensitizer. Repeated inhalation of vapor or aerosol at levels above the occupational exposure limit could cause respiratory sensitization. Symptoms may include irritation to the eyes, nose, throat and lungs. Possibly combined with dryness of the throat, tightness of chest and difficulty breathing. The onset of the respiratory symptoms may be delayed for several hours after exposure. A hyper-reactive response to even minimal concentrations of MDI may develop in sensitized persons.

SKIN CONTACT: Moderate irritant repeated and/or prolonged contact may cause skin sensitization. Animal studies have shown that respiratory sensitization can be induced by skin contact with known respiratory sensitizer including diisocyanate. These results emphasize the need for protective clothing including gloves to be worn at all times when handling these chemicals or in maintenance work.

EYE CONTACT: The aerosol, vapor or liquid will irritate human eyes following contact.

INGESTION: Ingestion may cause irritation of the gastrointestinal tract. Based on the oral LD50, this product is considered practically non-toxic by ingestion.

CHRONIC EFFECTS: A study where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmosphere of respirable polymeric MDI aerosol. Overall, the tumor incidence, both benign and malignant, and the number of animals with tumors were not different from controls. Only at the top level (MG/CU.M), there was a significant incidence of a benign tumor of the lung (Adenoma) and one malignant tumor (Adenocarcinoma). There were no lung tumors at 1MG/CU.M and no effects at 0.2 MG/CU.M. The increased incidence of lung tumors is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In lung damage, it is highly unlikely that tumor formation will occur. There are reports that chronic exposure may result in permanent decrease in lung function.

CARCINOGENICITY: The ingredients of this product are not classified as carcinogenic by ACGIH or IARC, not regulated ascarcinogens by OSHA, and not listed as carcinogens by NTP.

MUTAGENICITY: There is no substantial evidence of mutagenic potential.

REPRODUCTIVE EFFECTS: No adverse reproductive effects are anticipated.

TERATOGENICITY AND FETOTOXICITY: No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother. Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations well in excess of the defined occupations limits.

Material Safety Data Sheet

Revision Date: 1/10/11

NA = Not Applicable NE = Not Established

Section 6. Emergency & First Aid Procedures

EYE CONTACT: Flush with clean, lukewarm water at low pressure for at least 15 minutes, occasionally lifting eyelids. Consult a physician immediately.

SKIN CONTACT: Remove contaminated clothing. Wash exposed areas thoroughly with warm soapy water. Contaminated clothing should be properly laundered before reusing.

INHALATION: Remove victim from areas of exposure to safe area. If not breathing, give mouth to mouth resuscitation. If breathing is difficult give oxygen. Consult a physician immediately.

INGESTION: No adverse effects anticipated by this route of exposure incidental to proper industrial handling.

NOTE TO PHYSICIAN: No specific antidote, supportive care, treatment based on judgment of physician in response to reactions of the patient. The manifestations of respiratory symptoms, including pulmonary edema resulting from acute exposure, may cause respiratory sensitization.

Section 7. Employee Protection Recommendations

VENTILATION: Natural or mechanical. Local exhaust will keep the TLV below minimum in most cases. Spills or other emergencies may require more forceful ventilation means.

RESPIRATORY PROTECTION: This product has demonstrated no observable effects at room temperature. However, it is highly recommended that an air purifying respirator with organic filter cartridges be worn. In addition, in any spray application, a supplied air source must be provided.

PROTECTIVE CLOTHING: Gloves determined to be impervious under the conditions of use should be worn always when working with this products. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before re-wearing. Protective clothing should be selected and used in accordance with "Guidelines for the Selections of Chemical Protective Clothing" published by ACGIH.

EYE PROTECTION: Liquid chemical goggles or full-face shield. No contact lenses should be worn.

SKIN PROTECTION: Chemical resistant gloves such as natural rubber or polyvinyl alcohol. Cover as much exposed skin as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

OTHER: Unhindered access to safety shower and eye wash stations. As a general hygienic practice, wash hands and face after use. Showers and cleaning of clothes are recommended. Follow all label instructions. Educate and train employees in safe use.

Section 8. Reactivity Data

STABILITY: Stable under recommended storage conditions.

HAZARDOUS POLYMERIZATION: May occur with incomplete reactants. Especially strong bases, water or temperatures over 374°F. Temperatures over 120° F accelerate the reaction with water.

INCOMPATIBILITY (MATERIALS TO AVOID): Water, acid, bases, metal compounds and surface active materials. Avoid water as it reacts to form heat, CO₂ and insoluble urea. Some reactions are violent in the presence of the above mentioned materials.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Aliphatic fragments, CO, NH₃, CO₂.

Material Safety Data Sheet

Revision Date: 1/10/11

NA = Not Applicable NE = Not Established

Section 9. Spill or Leak Procedures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain the spilled material and then cover with a loose, absorbent material such as oil dry, vermiculite, sawdust, or Fuller's earth. Shovel waste material into proper waste containers and wash contaminated area with hot soapy water, thoroughly. Ventilate to remove vapors. Transport container to well ventilated area and treat with a neutralizing solution consisting of a mixture of water and 3-8% concentrated ammonium hydroxide or 5-10% sodium carbonate. Add approximately 10 parts of neutralizer per part of isocyanate with mixing. Allow to stand for 48 hours letting CO2 to escape.

WASTE DISPOSAL METHOD: Waste material may be incinerated or disposed in compliance with all relevant local, state, and federal laws and regulations controlling environmental protection. This material is not a hazardous waste under RCRA 40 CFR 261.

EMPTY CONTAINER PRECAUTIONS: Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. All containers should be disposed of in an environmentally safe manner and in accordance with government regulations.

Section 10. Special Precautions & Storage Data

STORAGE TEMPERATURE: (MIN/MAX): 65F° (18C°) to 75F° (24C°)

AVERAGE SHELF LIFE: Six (6) months from date of manufacture.

SPECIAL SENSITIVITY (HEAT, LIGHT, MOISTURE): This product is reactive to water. Containers should be tightly sealed to prevent moisture contamination. Do not expose to high temperatures for any length of time. A nitrogen blanket should be used for bulky storage.

PRECAUTIONS IN HANDLING AND STORING: If contamination of the isocyanate is suspected, do not re-seal container because of possible rupture due to pressure buildup. Always slowly vent container when opening to relieve any pressure buildup.

Section 11. Shipping Data

TECHNICAL SHIPPING NAME: Diphenylmethane – 4.4 Diisocyanate

UN NUMBER: None

PRODUCT LABEL: "A" Component established

PLACARDS REQUIRED: None HMIS: H3,F2,R1

FREIGHT CLASS PACKAGE: Chemicals, NOI

DOT (HM-181) (Domestic Surface)

PROPER SHIPPING NAME: Diphenylmethane – 4.4 Diisocyanate

REPORTABLE QUANTITY: 5000 pounds

HAZARD CLASS OR DIVISION: Bulk (Greater than 5000 lb. units) Class 9

HAZARDOUS SUBSTANCE: None

HAZARD PLACARDS: None

IMO/IMDG CODE (OCEAN): Not regulated

TDG: Not regulated

IATA/ICAO CLASS): Not regulated

TRANSPORTATION EMERGENCY TELEPHONE NUMBER: 1-800-424-9300 (CHEMTREC)

Material Safety Data Sheet

Revision Date: 1/10/11

NA = Not Applicable NE = Not Established

Section 12. Regulatory Information

OSHA CLASSIFICATION: Physical-not related. Health-highly toxic, respiratory sensitizer, skin sensitizer and irritant

TSCA REGULATIONS: All ingredients are on the TSCA Chemical Substance Inventory.

EPCRA SECTION 313 (40 CFR 372): This product contains the following chemical(s) subject to reporting requirements:
Approx. 30-70% 4,4-MDI (CAS 101-68-8)

CERCLA: 4,4-Diphenylmethane Diisocyanate (CAS 101-68-8) has a 5000 pound RQ. Any spill or release above the RQ must be reported to the national response center (800-424-8802). The % of the 4,4 MDI in this product is listed in Section II of this MSDS.

OTHER REGULATIONS WHICH APPLY TO THIS PRODUCT: Massachusetts Right to Know, Pennsylvania Right to Know, New Jersey Right to Know, CERCLA

THIS PRODUCT DOES NOT CONTAIN ANY OZONE DEPLETING SUBSTANCES.

CANADIAN CLASSIFICATION: This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS contains all of the information required by CPR.

CONTROLLED PRODUCTS REGULATIONS (WHMIS) CLASSIFICATION: D-1A: Very toxic (Acute Effects). D-2A: Very toxic. D-2B: Toxic.

CEPA/CANADIAN DOMESTIC SUBSTANCE LIST (DSL): The substance(s) in this product is on the Canadian Domestic Substances List (CEPA DSL).

USER'S RESPONSIBILITY: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions, in addition to those described herein, are required. Any health hazard and safety information herein should be passed on to your customers or employees, as the case may be.

DISCLAIMER: The information contained herein is, to the best of our knowledge and belief, accurate and current as of the date of this MSDS. However, since the conditions of handling use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representations or warranties, either expressed or implied or merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the chemical to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.