MATERIAL SAFETY DATA SHEET

In an Emergency Call Chemtrec at **1/800-424-9300**

Fabick, Inc.
4118 Robertson Rd.
Madison, WI 53714-3119
608/242-1100

Section 1 - Chemical Product and Company Identification

PRODUCT NAME: Fabick MP-55A
CHEMICAL FAMILY: Aromatic Polyisocyanate
CHEMICAL NAME: 4,4'-Diphenylmethane-diisocyanate
SYNONYMS: MDI
COMPANY: **Fabick, Inc.**
4118 Robertson Rd.
Madison, WI 53714
TELEPHONE NUMBERS
CHEMTREC: **800-424-9300** (24 hours a day)
TECHNICAL ASSISTANCE: **608-242-1100** (8am - 5pm Mon.-Fri.)

Section 2 - Composition, Information on Ingredients

Ingredient	CAS #	Weight %	ACGIH TLV
4,4'-Diphenylmethane-diisocyanate	101-68-8	50	0.0005 ppm
Modified MDI		50	

OSHA PEL for MDI is 0.02 ppm, ceiling

Section 3 - Hazards Identification

HEALTH HAZARDS: Based on MDI - irritant (eye, skin, respiratory passages, skin sensitizer), inhalation (TLV), harmful (respiratory sensitizer, lung injury).

PHYSICAL HAZARDS: None.

POTENTIAL HEALTH AFFECTS

GENERAL: No toxicity information is available on this specific preparation; this health hazard assessment is based on information that is available on the properties of its components.

EYE CONTACT: This material will probably irritate human eyes following contact.

INGESTION: The acute oral LD50 in rat is probably above 10,000 mg/kg. Relative to other materials, a single dose of this product is practically nontoxic by ingestion. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion.

SKIN CONTACT: No irritation is likely to develop following short contact periods with human skin. Skin sensitization and/or irritation may develop after repeated an/or prolonged contact with human skin.

Preliminary data from a research study indicates that MDI in corn oil injected intradermally in guinea pigs can elicit a respiratory sensitization reaction. The potential for MDI to induce respiratory sensitization reaction. The potential for MDI to induce respiratory sensitization in humans and animals by inhalation is well known; however, this new data indicates that this effect may be induced by skin contact.

SKIN ABSORPTION: Systemically toxic concentrations of this product will probably not be absorbed through human skin.

INHALATION: Vapors and aerosols can irritate eyes, nose and respiratory passages. Severe overexposure may lead to pulmonary edema. MDI can induce respiratory sensitization with asthma-like symptoms similar to those induced by TDI (toluene diisocyanate). Symptoms include chronic cough, tightness of chest with difficulty in breathing. These symptoms may be immediate or delayed up to several hours after exposure. There are reports that chronic exposures may result in permanent decreases in lung function.

Other effects of overexposure: Recently, a study was completed where groups of rats were exposed for 6 hours/day, 5 days/week for a lifetime to atmospheres 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. However, at the top level only (6 mg/m3, there was a significant incidence of a benign tumor of the lung (adenoma) and one malignant tumor (adenocarcinoma). There were no lung tumors at 1 mg/m3 and no effects at 0.2 mg/m3. 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 the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumor formation will occur.

Section 4 - First Aid Measures

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

SKIN CONTACT: Wash material off of the skin with plenty of soap and water. If redness, itching, or a burning sensation develops, get medical attention.

EYE CONTACT: Immediately flush with plenty of water for at least 15 minutes. If redness, itching, or a burning sensation develops, have eyes examined and treated by medical personnel.

INGESTION: Give 1 or 2 glasses of water to drink. If gastrointestinal symptoms develop, consult medical personnel. (NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.)

Section 5 - Fire-Fighting Measures

FLASH POINT: 400°F, 204°C (COC)

FIRE AND EXPLOSION HAZARDS: Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

EXTINGUISHING MEDIA: Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use very large quantities. The reaction between water and hot isocyanate may be vigorous.

FIRE FIGHTING PROCEDURES:

FIRE FIGHTING PROTECTIVE EQUIPMENT: Self-contained breathing apparatus with full face piece and protective clothing.

Flammable Limits (Lower): No data
Flammable Limits (Upper): No data
Auto Ignition Temperature: No data

Section 6 - Accidental Release Measures

For major spills call Chemtrec (800-424-9300).

SPILLS, LEAKS, OR RELEASES: Wear skin, eye, and respiratory protection during cleanup. Soak up materials with absorbent and shovel into a chemical waste container. Cover container, but do not seal, and remove from work area. Treat the spill area with decontamination solution, using about 10 parts of solution for each part of the spill, and allow it to react for at least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas.

PREPARATION OF DECONTAMINATION SOLUTION: Prepare a decontamination solution of 0.2-0.5% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's material safety data sheets. All operations should be performed by trained personnel familiar with the hazards of the chemicals used.

USE OF DECONTAMINATION SOLUTION: Slowly stir the isocyanate waste into the decontamination solution described above using 10 parts of the solution for each part of the isocyanate. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away. Neutralize the waste. Neither the solid nor the liquid portion is a hazardous waste under RCRA, 40 CFT 261.

CONTAINER DISPOSAL: Drums must be thoroughly drained to process or storage vessels before removal to an appropriate area for subsequent decontamination. Drums must be decontaminated in properly ventilated areas by personnel protected from the inhalation of isocyanate vapors. Spray or pour 5-15 liters of decontaminating solution into the drum, making sure the walls are well-rinsed. Leave the drum soaking unsealed for 48 hours. Pour out the decontaminating solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal. Note that the disposal of spent decontamination solutions may be subject to federal state or local regulations, ordinances or conditions of discharge permits. Local regulations should also be consulted before final disposition of decontaminated drums.

Section 7- Handling & Storage

HANDLING: Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard.

STORAGE REQUIREMENTS: Store in tightly closed containers to prevent moisture contamination. Ideal storage temperature range for ease of handling is 50-80° F (10-27°C). Avoid contact with skin and eyes.

STORAGE TEMPERATURE (MIN/MAX): -30° F(-34° C) / 122 F(50° C).

SHELF LIFE: 6 months at 77° F (25° C) after receipt of material by customer.

SPECIAL SENSITIVITY: If container is exposed to high heat, it can be pressurized and possibly rupture explosively. MDI reacts slowly with water to form CO2 gas. This gas can cause sealed containers to expand and possibly rupture explosively.

Section 8 - Exposure Control/Personal Protection

PREVENTIVE MEASURES: TLV or suggested control value. No ACGIH TLV or OSHA PEL is assigned to this mixture. Control of exposure to below the PEL for the ingredients (See Section 2) may not be sufficient. Minimize exposure in accordance with good hygiene practice. The ACGIH TLV for MDI is 0.0005 ppm 8-hour TWA. The OSHA PEL for MDI is 0.02 ppm, ceiling. NIOSH recommends 0.005 ppm TWA and 0.02 ppm STEL. These control limits do not apply to previously sensitized individuals or to individuals with existing respiratory diseases, such as chronic bronchitis, emphysema, or asthma. Sensitized individuals should be removed from any further exposure.

ENGINEERING CONTROLS: If needed, use local exhaust ventilation to keep airborne concentrations below the TLV. Follow guidelines in the ACGIH publication "Industrial Ventilation." Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: Chemical tight goggles; full faceshield in addition if splashing is possible. Eyewash station and safety shower in work area.

SKIN PROTECTION: Gloves determined to be impervious under the conditions of use. Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before rewearing. Testing of some commercially available protective clothing indicates that clothing constructed of butyl rubber, nitrile rubber, Saranex coated Tyvek and some neoprene garments have excellent resistance to permeation by MDI. Clothing constructed of neoprene/latex rubber and some PVC garments exhibited limited resistance to permeation by MDI. Clothing constructed of polyethylene, latex rubber, PVC or polylaminated Tyvek showed little resistance to permeation by MDI. Protective clothing should be selected and used in accordance with "guidelines for the Selection of Chemical Protective clothing" published by ACGIH.

RESPIRATORY PROTECTION: Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperatures. Exceptions are when the material is sprayed or heated. If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

EXPOSURE GUIDELINES: Special precautions or other comments: Prevent skin and eye contact. Observe TLV limitations. Avoid breathing vapors or aerosols. Workers should shower and change to fresh clothing after each shift. A sensitized individual should not be exposed to the product which caused

the sensitization. Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool area. Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. These individuals should be identified through baseline an annual

evaluation and removed form further exposure. Medical examination should include medical history, vital capacity, and forced expiratory volume at one second.

Section 9 - Physical and Chemical Properties

Appearance: Pale yellow liquid

Odor: Faint odor
pH: No data
Vapor Pressure: (mm Hg at 20° C): <0.0001
Vapor Density (Air=l): No data
Boiling Point: Decomposes at 646°F, 341.1°C
Melting Point: No data
Solubility (Water): Reacts
Specific gravity(at 25°C): 1.2

Section 10 - Stability and Reactivity

STABILITY: Stable under normal conditions.

INCOMPATIBILITY: This product will react with any materials containing active hydrogens, such as water, alcohol, ammonia, amines, alkalies and acids. The reaction with water is very slow under 50°C, but is accelerated at higher temperatures and in the presence of alkalies, tertiary amines, and metal compounds. Some reactions can be violent.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion products: Carbon dioxide, carbon monoxide. Nitrogen oxides, ammonia. Trace amounts of hydrogen cyanide.

HAZARDOUS POLYMERIZATION: May occur. High temperatures in the presence of alkalies, tertiary amines; and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

Section 11 - Toxicological Information

TOXICOLOGICAL DATA - none available

Section 12 - Ecological Information

NO ECOLOGICAL INFORMATION AVAILABLE

Section 13 - Disposal Considerations

Disposal should be in accordance with local, state, provincial or national regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. DO NOT HEAT OR CUT EMPTY CONTAINER WITH ELECTRIC OR GAS TORCH. (See Section 5 and 10).

Section 14 - Transport Information

DOT: Not regulated

TDG: Not regulated

IMO: Not regulated

IATA/ICAO: Not regulated

Section 15 - Regulatory Information

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

SARA TITLE III SECTION 313:
This product contains the following toxic chemicals seduce to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and of CFR 372:

CAS #	Chemical Name	Percent by Weight
101- 68-8	Methylenebis (phenylisocyanate)	50%

PROP 65 (CARCINOGEN)
Warning: This product contains a chemical known to the state of California to cause cancer.

CAS #	Chemical Name	Percent by Weight
none.		

PROP 65 (TERATOGEN)
Warning: This product contains a chemical known to the state of California to cause birth defects or other reproductive harm.

CAS #	Chemical Name	Percent by Weight
none.		