



"You won't believe it until you see it!"

MATERIAL SAFETY DATA SHEET

5-01-09

SECTION 1—CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: FlexPrime—A Component

Company:
FlexKrete Technologies, div. of Protective Products, Inc.
1181 Terrace Manor
Prosper, TX 75078

SECTION 2—COMPOSITION / INFORMATION

HAZARDOUS INGREDIENT (S)	% (w/w)	ACGIH TLV
Polymeric Diphenylmethane	80-100	Not Listed
Contains; 4,4' Diphenylmethane Diisocyanate (4,4' MDI)		0.005 ppm
MDI isomers/oligomers		Not Listed
Modified Polymeric MDI	1-10	Not Listed

SECTION 3—HAZARDS IDENTIFICATION

Emergency Overview

Health Hazards: Irritating to eyes, respiratory system and skin. Risk of serious damage to respiratory system. May cause sensitization by inhalation and skin contact. Repeated inhalation of aerosol at levels above the occupational exposure limit could cause respiratory sensitization. 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.

SECTION 4—FIRST AID MEASURES

General: In case of accident or if you feel ill, seek medical advice immediately (show the label where possible).

Inhalation: Remove patient from exposure, keep warm and at rest. Obtain medical attention. Treatment is symptomatic for primary irritation or bronchospasm. If breathing is labored, oxygen should be administered by qualified personnel. Apply artificial respiration if breathing has ceased or shows signs of failing.

Skin Contact: Remove contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation, redness, or burning sensation develops and persists, obtain medical advice. Contaminated clothing should be thoroughly cleaned before re-use.

Eye Contact: Immediately flush eyes with running water for a minimum of 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention immediately.

Ingestion: Do not induce vomiting. Provided the patient is conscious, wash out mouth with water then give 1 or 2 glasses of water to drink. Refer person to medical personnel for immediate attention.

Note to Physician: Symptomatic and supportive therapy may be needed following severe exposure. In such cases, medical follow-up should be maintained for at least 48 hours.

SECTION 5—FIRE-FIGHTING MEASURES

Fire and Explosion Hazards: Containers may burst under intense heat. Due to reaction with water, a hazardous build-up of pressure could result if contaminated containers are re-sealed.

Extinguishing Media: Carbon dioxide, dry chemical, or appropriate foam. If water is used, very large quantities are required. Reaction between water and hot isocyanate may be vigorous. Contain run-off water with temporary barriers.

Fire Fighting Procedures: As appropriate for surrounding materials/equipment.

Fire fighting Protective Equipment: Use self-contained breathing apparatus and full protective clothing (Bunker gear).

Flash Point: 397°F (208.8°C) (CC)

Flammable Limits (Lower): Not available.

Flammable Limits (Upper): Not available.

Auto Ignition Temperature: 464°F (240°C) (4.4' - Diphenylmethane Diisocyanate)

Decomposition Temperature: Not available

SECTION 6—ACCIDENTAL RELEASE MEASURES

Spills, Leaks or Releases: Clean-up should only be performed by trained personnel. People dealing with major spillage should wear full protective clothing including respiratory protection. Evacuate the area. Prevent further leakage, spillage or entry into drains.

Contain and absorb large spillages onto an inert, nonflammable absorbent carrier (such as earth or sand). Shovel into open-top drums or plastic bags for further decontamination, if necessary. Wash the spillage area clean with liquid decontaminant. Test atmosphere for MDI vapor. Neutralize small spillages with decontaminant. Remove and dispose of residues. Notify applicable government authorities if release is reportable.

Preparation of Decontamination Solution: Prepare a decontamination solution of 0.2-0.5% liquid detergent and 38% 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 when preparing and using solution.

Use of Decontamination Solution: Allow deactivated material to stand for at least 30 minutes before shoveling into drums. Do not tighten the bungs. Mixing with wet earth is also effective, but slower.

SECTION 7—HANDLING AND STORAGE

Handling: Avoid personal contact with the product or reaction mixture. Use only with adequate ventilation to ensure that the defined occupational exposure limit is not exceeded. The efficiency of the ventilation must be monitored regularly because of the possibility of blockage. Avoid breathing aerosols, mists and vapors. When the product is sprayed or heated, an approved MSHA/NIOSH positive-pressure, supplied-air respirator may be required.

Storage Requirements: Keep containers properly sealed and when stored indoors, in a well ventilated area. Keep contents away from moisture. Due to reaction with water, producing CO₂-gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Do not store in containers made of copper, copper alloys or galvanized surfaces. If a container is contaminated, do not reseal it. Reseal containers only after placing under a nitrogen blanket.

Storage Temperature: Ideal storage temperature is 60-100°F (16-38°C).

Keep stocks of decontaminant (See Section 6) readily available.

SECTION 8—EXPOSURE CONTROLS/PERSONAL PROTECTION

Preventive Measures: Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the

Need for specific protective devices at your workplace.

Engineering Controls: Use local exhaust ventilation to maintain airborne concentrations below TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operation.

Eye Protection: Chemical safety goggles. If there is a potential for splashing, use a full face shield.

Skin Protection: The following protective materials are recommended:

Gloves—neoprene, nitrile-butadiene rubber, butyl rubber. Thin disposable gloves should be avoided for repeated or long term use.

Respiratory Protection: Use a NIOSH/MSHA-approved positive pressure air-supplied respirator equipped with a full face piece, or an air-supplied hood, if airborne concentrations exceed or are expected to exceed the TLV. Air purifying (cartridge type) respirators are not approved for protection against diisocyanates.

EXPOSURE GUIDELINES:

Medical supervision of all employees who handle or come in contact with respiratory sensitizers is recommended. Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin exzema or sensitization should be excluded from working with this product. Once a person is diagnosed as sensitized, no further exposure to any sensitizer should be permitted.

HAZARDOUS INGREDIENTS(S):

4,4'-Diphenylmethane Diisocyanate:

ACGIH TLV	0.005 ppm (8 hour, 40 hour/week)
OSHA PEL CEILING	0/02 ppm
NIOSH TLV	0.005 ppm (10– hour, 40 hour/week)
NIOSH STEL	0.02 ppm (15 minute)

NOTE: The Occupational Exposure Limits listed for isocyanates do not apply to previously sensitized persons.

SECTION 9—PHYSICAL AND CHEMICAL PROPERTIES

Alternate Name: formerly PBA 2259

Chemical Name: Not applicable (mixture)

Chemical Family: Diisocyanate

Molecular Formula: Not applicable (mixture)

Appearance: Brown Liquid

Odor: Slight

Odor Threshold (ppm): 0.4 (4,4'-Diphenylmethane Diisocyanate)

pH: Not applicable

Flash Point: 397°F (208.8°C) (CC)

Vapor Pressure : (mm Hg at 25°C)-. <0.0003

Vapor Density: (Air=1): 8.5 approx.

Boiling Point: Not applicable

Melting Point: Not available

Solubility (Water): Reacts with water

Solubility (Other): Soluble in most organic solvents

Hazardous Decomposition Products: Highly unlikely under normal industrial use. See Section 5.

Chemical Stability: Stable at room temperature.

Conditions to Avoid: Avoid high temperatures. Avoid freezing.

Incompatibility with other Substances: This product will react with any materials containing active hydrogens such as water, alcohol, amines, bases and acids. The reaction with water is very slow under (122°F (50°C)), but is accelerated at higher temperatures.

Hazardous Polymerization: Polymerization may occur at elevated temperatures in the presence of alkalis, tertiary amines and metal compounds.

SECTION 10—TOXICOLOGICAL DATA:

Polymeric MDI:

Oral LD50 (rat) >5,000mg/kg

Dermal LD50 (rabbit) >5,000 mg/kg

Inhalation LD50 (rat) - 490 mg/m³/4H (respirable aerosol)

SECTION 11—POTENTIAL HEALTH EFFECTS:

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, possible combined with dryness of the throat, tightness of chest and difficulty in 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 sensitizers, including diisocyanates. 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 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. Only at the top level (6 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.

There are reports that chronic exposure may result in permanent decrease in lung function.

Reproductive Effects: No adverse reproductive effects are anticipated.

Teratogenicity and Fetotoxicity: No information is available and no adverse teratogenic/embryotoxic effects are anticipated.

SECTION 12—ECOLOGICAL INFORMATION

Environmental Fate and Distribution: It is unlikely that significant environmental exposure in the air or water will arise, based on consideration of the production and use of the substance.

Persistence and Degradation: Immiscible with water, but will react with water to produce inert and non-biodegradable solids.

Toxicity: Polymeric MDI.

LCO (Zebra Fish) > 1000 mg/l

EC50 (Daphnia magna) 24 hour > 1000 mg/l

EC50 (E. Coli) > 1000 mg/l

SECTION 13—DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized wherever possible.

Disposal should be in accordance with local, state, provincial or national regulations. This material is not a hazardous waste under RCRA 40 CFR 261. Small quantities should be treated with decontaminant solution (See Section 6). The treated waste is not hazardous material under RCRA 40 CFR 261. Chemical waste, even small quantities, should never be poured down drains, sewers or waterways.

Empty containers should be decontaminated and either passed to an approved drum recycler or destroyed.

SECTION 14—TRANSPORT INFORMATION

DOT: Not regulated.

Transportation Emergency Telephone Number—800-424-9300 (CHEMTREC).

TDG: Not Regulated.

IMO: Not Regulated.

IATA/CAO Class: Not Regulated.

SECTION 15—REGULATORY INFORMATION

Health: Highly toxic Respiratory sensitizer. Skin sensitizer. Irritant.

Target Organ: Respiratory tract. Skin.

TSCA (Toxic Substances Control Act) Regulations: All ingredients are on the TSCA chemical substance Inventory.

SARA Regulations Sections 313 and 40 CFR 372: This product contains the following toxic chemical subject to reporting requirements < 45% 4,4-Diphenylmethane Diisocyanate (CAS 101-68-6).

This product does not contain nor is it manufactured with ozone depleting substances.

Other Regulations/Legislation which apply to this product: Massachusetts Right-to-know, Pennsylvania right-to-know, new Jersey right-to-know, CESCLA.

CANADIAN CLASSIFICATION:

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations), and this MSDS (Material Safety Data Sheet) contains all the information required by the CPR.

Controlled Products Regulations (WHMIS) Classification: D-1A: Very Toxic (acute effects). D-2A: Very toxic, D-2B: Toxic

CEPA/Canadian Domestic Substances List (DSL): The substances in this product are on the Canadian Domestic Substances List (CEPA DSL).

SECTION 16—OTHER INFORMATION

Glossary:

ACGIH—American Conference of Governmental Industrial Hygienists

IARC—International Agency for Research on Cancer

NTP—National Toxicology Program

OSHA—Occupational Safety and Health Administration

FlexKrete

Technologies

A div. of Protective Products, Inc.

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MATERIAL SAFETY DATA SHEET

An explanation of the terms used herein may be found in OSHA 29 CFR 1910.1200 available from OSHA regional or area offices.
(Essentially similar to U.S. Department of Labor Form OSHA 31).

HEALTH	1
FLAMMABILITY	1
REACTIVITY	1

SECTION 1—PRODUCT IDENTIFICATION

PRODUCT NAME: FlexPrime, Component B
PRODUCT CLASS: N/A
DOT NOMENCLATURE: Not Regulated

SECTION 2—HAZARDOUS INGREDIENTS

NONE

SECTION 3—PHYSICAL DATA

Boiling Range: > 500°F
Evaporation Rate: Slower than ether
Vapor Density: N/A
%Volatile Weight: 0
WT/Gal.: 7.98 lbs/ U.S. Gal.

SECTION 4—FIRE AND EXPLOSION HAZARD DATA

Flammability Classification: OSHA- III DOT- N/A
Flash Point: N/A LEL: N/A
Extinguishing Media:
1. Foam 2. CO₂ 3. Dry Chemical
Unusual Fire and Explosion Hazards: None
Special Firefighting Procedures: No special procedures

SECTION 5—HEALTH HAZARD DATA

Effects of overexposure: No known effects.
Medical Conditions Prone to Aggravation by Exposure: None
Primary Route(s) of Entry: Dermal, Inhalation, Ingestion.
Emergency and First Aid Procedures: None

SECTION 6—REACTIVITY DATA

Stability: Stable

Hazardous Polymerization: Will not occur

Hazardous Decomposition Products: CO², various hydrocarbons

Conditions To Avoid: None

Incompatibility (Materials to Avoid): None

SECTION 7—SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released or Spilled:

Spilled material may be absorbed using a suitable absorbent and disposed of according to Federal, State and local regulations.

Waste Disposal: Dispose of in accordance with Federal, State and Local regulations.

SECTION 8—SAFE HANDLING AND USE INFORMATION

Respiratory Protection: None required

Ventilation: No special ventilation required.

Protective Gloves: Recommended

Eye Protection: Goggles or safety glasses

Other Protective Equipment: None

Hygienic Practices: None.

SECTION 9—SPECIAL PRECAUTIONS

Cautions To Be Taken In Handling and Storing: None.

Other Precautions: None.