

MATERIAL SAFETY DATA SHEET

C.D. PRODUCTS, INC.
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ISSUE DATE-8/15/99

PFAC PART A- PAGE 1

www.concretedefense.com

SECTION I: PRODUCT IDENTIFICATION

PRODUCT NAME- PFAC

PRODUCT - PART A

PRODUCT CLASS- MDI AROMATIC POLYISOCYANATE

HMS CODE HEALTH-1, FIRE-2, REACTIVITY-1

HAZARD RATING: 0=LEAST, 1=SLIGHT, 2= MODERATE, 3=HIGH, 4= EXTREME

SECTION II: HAZARDOUS INGREDIENTS	CAS	%	ACGIH TLV
4,4,' diphenylmethane-diisocyanate	101-68-8	50	0.0005 PPM
MODIFIED MDI		50(1)	

(1) OSHA PEL for MDI is 0.02ppm ceiling

SECTION III: PHYSICAL DATA

BOILING RANGE: > +400f

EVAPORATION RATE VS BUTYL ACETATE- SLOWER

VAPOR DENSITY VS AIR: HEAVIER

SOLUBILITY IN WATER: negligible

APPEARANCE AND ODOR: pale yellow color

PERCENT VOLATILE BY VOLUME: 0%

WEIGHT PER GALLON: 9.35 LB/GAL

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (F): 400F

LEL: N/A

EXTINGUISHING MEDIA: water spray, dry chemical, foam or carbon dioxide. The reaction between water and the isocyanate can be vigorous.

HAZARDOUS DECOMPOSITION PRODUCTS: carbon dioxide, carbon monoxide, oxides of nitrogen

SPECIAL FIRE FIGHTING PROCEDURES: Wear self contained breathing apparatus, goggles and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: none

SECTION V: HEALTH HAZARD DATA - EFFECTS OF OVER EXPOSURE

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 non toxic by ingestion. Irritation of the mouth, pharynx esophagus and/or irritation may develop following ingestion . INHALATION: can cause respiratory irritation- respiratory sensitize

SKIN ABSORPTION: below

SKIN CONTACT: no irritation is likely to develop following short contact periods with human skin. Skin sensitization and/or irritation may develop after repeated 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 in humans and animals by inhalation is well known, however this new data indicates that this effect may be induced by skin contact.

EYE CONTACT: may cause irritation

CHRONIC EFFECTS OF OVER EXPOSURE: no specific information

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EMERGENCY FIRST AID PROCEDURES

EYE CONTACT: immediately flush with water for 15 minutes. If redness, itching or a burning sensation develops seek medical attention

SKIN CONTACT: wash immediately with soap and water. . If redness, itching or a burning sensation develops seek medical attention

INGESTION: give 1 – 2 glasses of water to drink. do not induce vomiting, seek medical attention

INHALATION: remove to fresh air

SECTION VI: REACTIVITY DATA

STABILITY: stable

HAZARDOUS POLYMERIZATION: may occur

CONDITIONS TO AVOIDS excessive heat, strong acids, epoxy resins, water(evolves carbon dioxide)

SECTION VII: SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Wear skin, eye and respiratory protection during clean up. Absorb with inert material, eg- sand, scoop up and put into disposal container. Cover container- do not seal- and remove from work area. Treat the spill with a decontamination solution of 10 parts of solution for each part of the spill., and allow to react for a least 10 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. Uncontrolled spills which exceed one gallon may be reportable to the National Response Center.

Preparation of decontamination solution: Solution to contain 0.2-0.5% liquid detergent and 308% concentrated ammonium hydroxide in water (5-10 % sodium carbonate may be substituted for the ammonium hydroxide) follow precaution on manufacturers safety data sheets. All operation s should be performed by trained personnel familiar with the hazards of the chemicals used.

Use of decontamination solution. Stir slowly the isocyanate waste into the decontamination solution described above using 10 parts of the solution FOR each part of the isocyanate. Let stand 48 hours allowing the evolved carbon dioxide to vent away. Neutralize the waste. Neither the solid nor the liquid portion is hazardous waste under RCRA 40 FR 261

CONTAINER DISPOSAL METHOD: Drums must be thoroughly drained to process of storage vessels before removed 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 decontamination solution into the drum making sure the walls are well rinsed. Leave the drum soaking unsealed for 48 hours. [pour out the decontaminated solution and triple rinse the empty container. Puncture or otherwise destroy the rinsed container before disposal. Note, that the disposal of the spent decontamination solutions may be subject to federal, state, or local regulations, ordinances or conditions of discharge permits. Local regulations also be consulted before final disposal of decontaminated drums. Incinerate in furnace or bury in landfill in accordance with applicable local, state, and federal regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY: Because of the low vapor pressure, ventilation is usually sufficient to keep vapors below the TLV at room temperature. Exceptions are when the materials is sprayed or heated. If airborne concentrations exceed or are expected o exceed the TLV, use Niosh approved air-line respirators with auxiliary escape air tanks or self contained breathing apparatus should be used.

VENTILATION: local exhaust recommended when appropriate to control employee exposure.

PROTECTIVE GLOVES: should be warn- impervious

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EYE PROTECTION: chemical splash goggles

OTHER PROTECTIVE EQUIPMENT: impervious clothing- Tyvec, polyethelene, latex, rubber, PVC or poly laminated Tyvex, is especially impervious to isocyanate materials. neoprene/latex rubber clothing and some PVC garments exhibit limited resistance to permeation my MDI. Select protective clothing in accordance with “guidelines for the selection of Chemical Protective clothing” published by ACGIH.

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: TLV of suggested control value. No AGIH TLV of OSHA PEL is assigned to this mixture. Control of exposure to below the PEL for the ingredients may not be sufficient. Minimize exposure in accordance with good hygiene practice. The ACGIH TLV for MDI is 0.0005 ppm 8-hr 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 AGCIH publication “industrial ventilation”. Exhaust air may be cleaned by scrubbers or filters to reduce environmental contamination.

OTHER PRECAUTIONS: prevent skin and eye contact. Observe TLV limits. Avoid breathing vapors and 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 tests in an annual evaluation and removed from further exposure. Medical examination should include medical history, vital capacity and forced expiatory volume at one second.

DOT: not regulated

TDG: not regulated

IMO: not regulated

ITATA/ICAO- not regulated

SECTION X- REGULATORY INFORMATION

TSCA: All ingredients are on the TSCA Chemical substance inventory

SARA TITLE III SECTION 313

This product contains the following toxic chemicals in the reporting requirements of section 313 of the emergency planning and community right to know act of 1986 and of CFR 72:

Cas	chemical name	% 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	% by weight
None		

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PROP 65- TERATOGEN

Warning: this product contains a chemical known to the state of California to cause cancer

Cas	chemical name	% by weight
None		

NOTE: To the best of our knowledge, the information contained herein is accurate. However C.D. Products. Inc. assumes no liability whatsoever for the accuracy or completeness of the information contained herein. The final determination of suitability of any material is the sole responsibility of the user. All materials 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.

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PFAC PART B- PAGE 1

SECTION I: PRODUCT IDENTIFICATION

PRODUCT NAME- PFAC

PRODUCT - PART B

PRODUCT CLASS- POLYAMINE

HMS CODE HEALTH-,1 FIRE-,2 REACTIVITY-2

HAZARD RATING: 0=LEAST, 1=SLIGHT, 2= MODERATE, 3=HIGH, 4= EXTREME

SECTION II: HAZARDOUS INGREDIENTS	CAS	%	ACGIH TLV
DI-(METHYLTHIO)-TOLUENEDIAMINE		5-25	NA
Proprietary tri amine		ca.2	NA

SECTION III: PHYSICAL DATA

BOILING RANGE: > +400f

EVAPORATION RATE VS BUTYL ACETATE- SLOWER

VAPOR DENSITY VS AIR: NA

SOLUBILITY IN WATER: negligible

APPEARANCE AND ODOR: various colors

PERCENT VOLATILE BY VOLUME: 0%

SPECIFIC GRAVITY: 1.08 8.757 LB/GAL

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (F): +400F

LEL: N/A

EXTINGUISHING MEDIA: water spray, dry chemical, foam or carbon dioxide.

HAZARDOUS DECOMPOSITION PRODUCTS: carbon dioxide, carbon monoxide, oxides of nitrogen

SPECIAL FIRE FIGHTING PROCEDURES: Wear self contained breathing apparatus, goggles and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: none

SECTION V: HEALTH HAZARD DATA - EFFECTS OF OVER EXPOSURE

INGESTION: Irritation and or damage of the mouth, pharynx esophagus and/or irritation may develop following ingestion .

INHALATION: The tri amine catalyst released from this mixture may induce nasal irritation, dizziness, fatigue, nausea, headache, possible loss of coordination or asphyxiation. Tri amines catalysts may be released during normal processing conditions. Proper precautionary steps should be taken to maintain amine levels below irritating levels. High vapor concentrations of amine catalysts may cause lung damage and glaucopsial.

SKIN ABSORPTION: below

SKIN CONTACT: no irritation is likely to develop following short contact periods with human skin. Skin sensitization and/or irritation may develop after repeated 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 in humans and animals by inhalation is well known, however this new data indicates that this effect may be induced by skin contact.

EYE CONTACT: may cause severe irritation

CHRONIC EFFECTS OF OVER EXPOSURE: no specific information

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EMERGENCY FIRST AID PROCEDURES

EYE CONTACT: immediately flush with water for 15 minutes and seek medical attention

SKIN CONTACT: wash immediately with soap and water. If redness, itching or a burning sensation develops seek medical attention

INGESTION: give 1 – 2 glasses of water to drink. do not induce vomiting, seek medical attention

INHALATION: remove to fresh air

SECTION VI: REACTIVITY DATA

STABILITY: stable

HAZARDOUS POLYMERIZATION: will not occur

CONDITIONS TO AVOID: excessive heat, open flames, strong acids, epoxy resins

SECTION VII: SPILL OR LEAK PROCEDURE

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: eliminate ignition sources, absorb with inert material, eg- sand, scoop up and put into disposal container. flush area with water, prevent washdowns from entering the sewers and water ways. Uncontrolled spills which exceed one gallon may be reportable to the National Response Center. For small spills, the styrene may be allowed to evaporate and the dry resin then disposed of.

WASTE DISPOSAL METHOD: Incinerate in furnace or dispose of in accordance with applicable local, state, and federal regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY: use with adequate ventilation. NIOSH/MSA approved respirators

should be used where ventilation is not adequate. Niosh approved air-line respirators with auxiliary escape air tanks or self contained breathing apparatus should be used in confined spaces.

VENTILATION: local exhaust recommended when appropriate to control employee exposure.

PROTECTIVE GLOVES: Neoprene, nitrile rubber -should be worn

EYE PROTECTION: chemical splash goggles

OTHER PROTECTIVE EQUIPMENT: normal work clothing covering arms and legs

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: avoid skin contact, remove and launder contaminated clothing. Empty containers may contain residual flammable vapors so all hazard precautions should be observed

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: dispose of in accordance with local, state and federal regulations.

DOT: not regulated

TDG: not regulated

IMO: not regulated

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SECTION X- REGULATORY INFORMATION

TSCA: All ingredients are on the TSCA Chemical substance inventory

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SARA TITLE III

CATEGORY: immediate health, delayed health, fire

SECTION 313

This product contains the following toxic chemicals in the reporting requirements of section 313 of the emergency planning and community right to know act of 1986 and of CFR 72:

Cas	chemical name	% by weight
75218	ethelene oxide	0.002

PROP 65 – CARCINOGEN

Warning: this product contains a chemical known to the state of California to cause cancer

Cas	chemical name	% by weight
None		

PROP 65- TERATOGEN

Warning: this product contains a chemical known to the state of California to cause cancer

Cas	chemical name	% by weight
None		

CERCLA: Requires notification to the NRC of the release of quantities of hazardous substances equal to or grater than the RQ in CFR 302.4 components present in this product at levels which could require reporting under the stature are: Ethylene Oxide.

NOTE: To the best of our knowledge, the information contained herein is accurate. However C.D. Products. Inc. assumes no liability whatsoever for the accuracy or completeness of the information contained herein. The final determination of suitability of any material is the sole responsibility of the user. All materials 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.