SAFETY DATA SHEET
U.S. Department of Labor
Occupational Safety & Health Administration

Polafloor PUR Brushable - Part A

SECTION 1 - IDENTIFICATION

MANUFACTURER:	Andek Corporation
ADDRESS:	850 Glen Avenue, Moorestown, NJ 08057
TELEPHONE:	1-856-786-6900
	In an emergency, contact CHEMTREC 1-800- 424-9300;
	Outside the United States call +1-703-527-3887
PRODUCT IDENTIFIER:	Polajoint Super - Part A
RECOMMENDED USE:	Industrial Sealant and Repair Material

SECTION 2 – HAZARD IDENTIFICATION

GHS Classification

Acute toxicity (Inhalation):	Category 4
Specific target organ toxicity - Single exposure:	Category 3 (Respiratory system)
Respiratory sensitization:	Category 1
Specific target organ toxicity - Repeated exposure:	Category 1 (Respiratory Tract)
Skin irritation:	Category 2
Skin sensitization:	Category 1
Eye irritation:	Category 2B

GHS Label Elements
Hazard pictograms:

SIGNAL WORD: Danger

HAZARD STATEMENTS:

- Harmful if inhaled.
- May cause respiratory irritation.
- May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Causes damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.
- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes eye irritation.

PREECAUTIONARY STATEMENTS:

Prevention:

- Avoid breathing dust, mist, gas, vapors or spray.
- Do not eat, drink or smoke when using this product.
- Wash skin and face thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing must not be allowed out of the workplace.
- Wear protective gloves.
- In case of inadequate ventilation wear respiratory protection. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134) or regional standards. For additional details, see section 8 of the SDS.

Response:

- Get medical attention if you feel unwell.
- IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs; get medical attention. Wash contaminated clothing before reuse.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.
- IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
- If experiencing respiratory symptoms; call a doctor or emergency medical facility (i.e. 911).

Storage:

- Store locked up.
- Store in a well-ventilated place.
- Keep container tightly closed.

Disposal:

- Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

SECTION 3 – COMPOSITION

CHEMICAL NAME	CAS #	APPROX %
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	35%
Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9	45%
Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5	20%

SECTION 4 – FIRST AID MEASURES

Eye contact

- In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
- Use lukewarm water if possible.
- Use fingers to ensure that eyelids are separated and that the eye is being irrigated.
- Get medical attention.

Skin contact

- Immediately remove contaminated clothing and shoes.
- Wash off with soap and water. Use lukewarm water if possible.
- Wash contaminated clothing before reuse.
- For severe exposures, immediately get under safety shower and begin rinsing.
- Get medical attention if irritation develops.

Inhalation

- Move to an area free from further exposure.
- Get medical attention immediately.
- Administer oxygen or artificial respiration as needed.
- Asthmatic symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening.

Ingestion

- **Do Not** induce vomiting. Wash mouth out with water.
- **Do Not** give anything by mouth to an unconscious person.
- Get medical attention.

Notes to physician

- **Eyes:** Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision.
- **Skin:** This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn.
- **Ingestion:** Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound.
- **Inhalation**: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate**.**

SECTION 5 – FIRE-FIGHTING MEASURES

Flash Point (Method Used): 390ºF Pensky-Martens Closed Cup (ASTM D-93)

Flammable limits: Not established

Extinguishing Media: Dry chemical, carbon dioxide (CO^2), foam, water spray for large fires

Special Fire Fighting Procedures:

- Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves.
- Avoid contact with product.
- Decontaminate equipment and protective clothing prior to reuse.
- During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion.
- Exposure to heated diisocyanate can be extremely dangerous.

Unusual Fire & Explosion Hazards:

- Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO^2 formed).
- Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture.
- Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous.

Decomposition Products:

- May be toxic and irritating.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Spill and Leak Procedures

- Evacuate non-emergency personnel.
- Isolate the area and prevent access.
- Remove ignition sources.
- Notify management.
- Put on protective equipment.
- Control source of the leak.
- Ventilate.
- Contain the spill to prevent spread into drains, sewers, water supplies, or soil.
- Call ChemTrec at 800-424-9300 for assistance and advice.
- Major Spill or Leak (Standing liquid): Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat.
- Minor Spill or Leak (Wet surface): Cover spill area with suitable absorbent material (Kitty Litter, Oil-Dri®, etc). Saturate absorbent material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Swype® test kits have been used for this purpose.
- Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO^2) escape.

Additional Spill Procedures/Neutralization

Neutralization solutions:

(1) Colorimetric Laboratories Inc. (CLI) decontamination solution.
(2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10) and 5% n- Propanol.
(3) A mixture of 80% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10).
(4) A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.

Andek requires that CHEMTREC be immediately notified (800-424-9300) when this product is unintentionally released from its container during its course of distribution, regardless of the amount released. Distribution includes transportation, storage incidental to transportation, loading and unloading. Such notification must be immediate and made by the person having knowledge of the release.

SECTION 7 – HANDLING & STORAGE

Storage temperature:

Minimum:	10 °C (50 °F)
Maximum:	30 °C (86 °F)

Storage period

6 Months @ 25 °C (77 °F)**:** after receipt of material by customer

Handling/Storage Precautions

- **Do Not** breathe vapors, mists, or dusts.
- Use adequate ventilation to keep airborne isocyanate levels below the exposure limits.
- Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded.
- Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation.
- This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations.
- Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist.
- Avoid contact with skin and eyes.
- Wear appropriate eye and skin protection.
- Wash thoroughly after handling.
- **Do Not** breathe smoke and gases created by overheating or burning this material.
- Decomposition products can be highly toxic and irritating.
- Store in tightly closed containers to prevent moisture contamination.
- **Do Not** reseal if contamination is suspected.

Further Info on Storage Conditions

Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard 29 CFR 1910.1200.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

4,4'-Diphenylmethane Diisocyanate (MDI) (101-68-8)

US ACGIH Threshold Limit Values
Time Weighted Average (TWA): 0.005 ppm
US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Ceiling Limit Value: 0.02 ppm, 0.2 mg/m3

Industrial Hygiene/Ventilation Measures

- Local exhaust should be used to maintain levels below the TLV whenever MDI is heated, sprayed, or aerosolized.
- Standard reference sources regarding industrial ventilation (e.g., ACGIH Industrial Ventilation Manual) should be consulted for guidance about adequate ventilation. To ensure that published exposure limits have not been exceeded, monitoring for airborne diisocyanate should become part of the overall employee exposure characterization program. NIOSH, OSHA, and others have developed sampling and analytical methods.

Respiratory protection

- Airborne MDI concentrations greater than the ACGIH TLV-TWA (TLV) or OSHA PEL-C (PEL) can occur in inadequately ventilated environments when MDI is sprayed, aerosolized or heated. In such cases, respiratory protection must be worn.
- The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR).
- If an APR is selected then (a) the cartridge must be equipped with an end-of-service life indicator (ESLI) certified by NIOSH, or(b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. The recommended APR cartridge is an organic vapor/particulate filter combination cartridge (OV/P100).

Hand protection
Gloves should be worn. Nitrile rubber showed excellent resistance. Butyl rubber, neoprene and PVC are also effective.

Eye protection
When directly handling liquid product, eye protection is required. Examples of eye protection include a chemical safety goggle or chemical safety goggle in combination with a full face shield when there is a greater risk of splash.

Skin and body protection
Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact. Animal tests and other research indicate that skin contact with MDI can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

Medical Surveillance
- All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation.
- A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas.
- Applicants who have a history of adult asthma should be restricted from work with isocyanates.
- Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates.
- A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates.
- Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted.

Additional Protective Measures
Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid
Physical state: Liquid
Color: Dark brown
Odor: Musty
Odor Threshold: None established.
pH: None established.
Melting Point/freezing point: None established.
Initial boiling point/ boiling range: 406ºF
Flash point: 390ºF
Evaporation rate: None established.
Flammability (solid, gas): None established.
Upper/lower flammability or explosive limits: None established.
Vapor pressure: <0.0001 mmHg @25ºC (77ºF)
Vapor density: None Established
Relative density: 1.234kg/Lt
Solubility: Insoluble (reacts with water to evolve CO^2 gas
Partition coefficient: N-Octanol/water: N/A
Auto-ignition temperature: None established.
Decomposition temperature: Polymerises @ 200ºC
Viscosity: 500 centipoises @ 25ºC

SECTION 10 – STABILITY AND REACTIVITY

Hazardous Reactions
Contact with moisture, other materials that react with isocyanates, or temperatures above 350º F (177º C), may cause polymerization

Materials to avoid
Water, Amines, Strong bases, Alcohols, Copper alloys

Hazardous decomposition products
By Fire and High Heat: Carbon dioxide (CO^2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke, isocyanate, isocyanic acid and other undetermined compounds

SECTION 11 – TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE:
Skin Contact, Inhalation, Eye Contact

EFFECTS FROM SHORT AND LONG TERM EXPOSURE:
Repeated dose toxicity for Polymeric MDI
90 Days, inhalation: NOAEL: 1 mg/m3, (rat, Male/Female, 6 hrs/day 5 days/week) Irritation to lungs and nasal cavity.
2 years, inhalation: NOAEL: 0.2, (rat, Male/Female, 6 hrs/day 5 days/week) Irritation to lungs and nasal cavity.

Repeated dose toxicity for 4,4'-Diphenylmethane Diisocyanate (MDI)
90 Days, inhalation: NOAEL: 0.3 mg/m3, (rat, Male/Female, 18 hrs/day, 5 days/week) Irritation to lungs and nasal cavity.

NUMERICAL MEASURES OF TOXICITY:

CHEMICAL NAME	Oral	Dermal	Inhalation	Eye Irritation
Polymeric MDI	Acute - LD50: > 2,000 mg/kg (rat, Male/Female)	rabbit, Slightly irritating	Acute - LC50: 490 mg/m3, 4 h (rat)	N/A
4,4'-Diphenylmethane Diisocyanate (MDI)	N/A	Acute - LD50: > 10,000 mg/kg (rabbit)	Acute - LC50: 369 mg/m3, 4 h (rat, Male/Female) LC50: > 2240 mg/m3, 1 h (rat) (OECD Test Guideline 403)	Rabbit - Slightly irritating

SYMPTOMS ASSOCIATED WITH EXPOSURE:
Polymeric MDI - Dermal sensitization according to Buehler (epicutaneous test): negative (guinea pig, OECD Test Guideline 406)

Toxicological studies at the product:
4,4'-Diphenylmethane Diisocyanate (MDI) -
Dermal: sensitizer (guinea pig, Maximization Test)
Inhalation: sensitizer (Guinea pig)

CHEMICAL LISTED IN NTP OR IARC?
Polymeric MDI:
Carcinogenicity
Rat, Male/Female, inhalation, 2 Years, 6 hrs/day 5 days/week,
Exposure to a level of 6 mg/m3 polymeric MDI was related to the occurrence of lung tumors. This level is significantly over the TLV for MDI.

Mutagenicity
Rat, female, inhalation, gestation days 6-15, 6 hrs/day, NOAEL (teratogenicity): 12 mg/m3, NOAEL (maternal): 4 mg/m3
No Teratogenic effects observed at doses tested. Fetotoxicity seen only with maternal toxicity.

4,4'-Diphenylmethane Diisocyanate (MDI):
Carcinogenicity
Rat, Female, inhalation, 2 Years, 17 hrs/day, 5 days/week, negative

Mutagenicity
Genetic Toxicity in Vitro:
Ames: (Salmonella typhimurium, Metabolic Activation: with/without)
Positive and negative results were reported. The use of certain solvents which rapidly hydrolyze diisocyanates is suspected of producing the positive mutagenicity results.
Genetic Toxicity in Vivo: Micronucleus Assay: (mouse), negative

SECTION 12 – ECOLOGICAL INFORMATION

DATA FROM TOXICITY TEST (AQUATIC AND/OR TERRETRIAL ORGANISM WHERE AVAILABLE):

CHEMICAL NAME	Algae/Aquatic Plants	Fish	Toxicity to Microorganism	Crustacea (Aquatic Invertebrates)
Polymeric MDI	NOEC: 1,640 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72 h)	LC0: > 1,000 mg/l (Danio rerio (zebra fish), 96 h) LC0: > 3,000 mg/l (Oryzias latipes (Orange-red killifish), 96 h)	EC50: > 100 mg/l, (activated sludge, 3 h)	EC50: > 1,000 mg/l (Water flea (Daphnia magna), 24 h)
4,4'-Diphenylmethane Diisocyanate (MDI)	N/A	LC50: > 500 mg/l (Zebra fish (Brachydanio rerio), 24 h)	N/A	EC50: > 500 mg/l (Water flea (Daphnia magna), 24 h)

BIODEGRADATION:
Polymeric MDI: 0 %, Exposure time: 28 d, i.e. not readily degradable.

BIOACCUMULATION POTENTIAL:
Polymeric MDI: Oncorhynchus mykiss (rainbow trout), Exposure time: 112 d, < 1 BCF. Does not bioaccumulate.

MOBILITY IN SOIL: Not determined.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Method
Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

Empty Container Precautions
Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

SECTION 14 – TRANSPORT INFORMATION

UN #	NA3082
UN PROPER SHIPPING NAME:	Other regulated substances, liquid, n.o.s. (contains 4,4'- Diphenylmethane Diisocyanate [MDI])
HAZARD CLASS:	9
PACKING GROUP:	III
ENVIRONMENTAL HAZARDS:	N/A
GUIDANCE ON TRANSPORT IN BULK:	N/A
TRANSPORT LABELS REQUIRED:	Class 3

Additional Transportation Information:
When in individual containers of less than the Product RQ, this material ships as non-regulated.

SECTION 15 – REGULATORY INFORMATION

US Federal Regulation:
SARA 311/312 Hazard Categories

CHEMICAL NAME	CWA reportable quantities	CWA Toxic Pollutants	CWA Priority Pollutants	CWA Hazardous Substances	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity RQ
4,4'-Diphenylmethane Diisocyanate (MDI)	5000 lbs	Listed	N/A	Hazardous	Acute	Required	5000 lbs.

US State Right to Know Regulations: New Jersey, Massachusetts, Rhode Island or Pennsylvania substance lists

CHEMICAL NAME	CAS #
Polyisocyanate Prepolymer based on MDI	CAS# is a trade secret
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8
Polymeric Diphenylmethane Diisocyanate (pMDI)	9016-87-9
Diphenylmethane Diisocyanate (MDI) Mixed Isomers	26447-40-5

California Prop 65:
To the best of our knowledge this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm

SECTION 16 – OTHER INFORMATION (HMIS RATING)

Health	2*
Flammability	1
Physical Hazard	1
Personal Protection	H

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
* = Chronic Health Hazard

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