

SAFETY DATA SHEET

Product Name:	ZIIS DuraJoint PU85 Part B (Isocyanate)
Formulation / Internal Code:	ACX-5501
Material / Code:	DuraJoint PU85-B
Recommended Use:	Isocyanate component (Part B) of a two-component, 100% solids, rapid-curing polyurea control joint filler for concrete floors. Mixed 1:1 by volume with Part A (Resin/Curative) for filling saw-cut control joints, construction joints, and moving cracks in heavy-duty traffic areas, freezer applications, and industrial floors. Complies with ACI 302.1R guidelines. Part B contains high-purity 4,4'-MDI as the reactive isocyanate.
Restrictions on Use:	For professional/industrial use only. Not for consumer use. Do not use in expansion joints or joints subject to high movement. Not for potable water contact.

1. Identification

Manufacturer / Supplier: ZIIS INC. / ZIIS America Inc., LLC / Utah Foam Products Inc.

Address: 3609 S 700 W, South Salt Lake, UT 84119, US

Telephone: 801-265-9456 | **Email:** sales@ziis.com | **Web:** www.ziis.com

Emergency Telephone: 1-800-424-9300 (US) / 1-613-996-6666 (Canada) [CHEMTREC]

Contact Person: EH&S; / Regulatory Department

2. Hazard(s) Identification

Hazard Classification (GHS / OSHA HCS 2012):

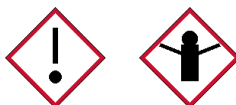
Health Hazards:

- Acute toxicity, inhalation (vapor/dust/mist) – Category 4
- Skin corrosion/irritation – Category 2
- Serious eye damage/eye irritation – Category 2A
- Respiratory sensitization – Category 1
- Skin sensitization – Category 1
- Carcinogenicity – Category 2
- Specific target organ toxicity (single exposure) – Category 3 (respiratory tract irritation)
- Specific target organ toxicity (repeated exposure) – Category 2

Unknown Acute Toxicity: Acute toxicity, oral ~13%; dermal ~13%; inhalation vapor ~71%; dust/mist ~71%.

GHS Label Elements

GHS Pictograms:



Signal Word: **DANGER**

Hazard Statements:

- H332 – Harmful if inhaled.
- H315 – Causes skin irritation.
- H319 – Causes serious eye irritation.
- H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 – May cause an allergic skin reaction.
- H351 – Suspected of causing cancer.
- H335 – May cause respiratory irritation.
- H373 – May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements – Prevention:

- P201 – Obtain special instructions before use.
- P202 – Do not handle until all safety precautions have been read and understood.
- P260 – Do not breathe dust/fume/gas/mist/vapors/spray.
- P264 – Wash thoroughly after handling.
- P271 – Use only outdoors or in a well-ventilated area.
- P272 – Contaminated work clothing should not be allowed out of the workplace.

P280 – Wear protective gloves/protective clothing/eye protection/face protection.

P284 – [In case of inadequate ventilation] wear respiratory protection.

Precautionary Statements – Response:

P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342+P311 – If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 – If eye irritation persists: Get medical advice/attention.

P302+P352 – IF ON SKIN: Wash with plenty of soap and water.

P333+P313 – If skin irritation or rash occurs: Get medical advice/attention.

P362+P364 – Take off contaminated clothing and wash it before reuse.

P308+P313 – IF exposed or concerned: Get medical advice/attention.

P312 – Call a POISON CENTER/doctor if you feel unwell.

Precautionary Statements – Storage: P405 – Store locked up. P403+P233 – Store in a well-ventilated place. Keep container tightly closed.

Precautionary Statements – Disposal: P501 – Dispose of contents/container to an approved treatment and disposal facility in accordance with applicable laws and regulations.

Hazard(s) not otherwise classified (HNOX): None known.

3. Composition / Information on Ingredients

Mixtures – Part B is the isocyanate component consisting of high-purity 4,4'-MDI.

Chemical Identity	CAS Number	Content (wt%)*
4,4'-Diphenylmethane-diisocyanate (4,4'-MDI)	101-68-8	100%

* All concentrations are percent by weight unless ingredient is a gas. The specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

Other ingredients: Proprietary polyisocyanate prepolymer, additives, and stabilizers making up the balance to 100%.

4. First-Aid Measures

Description of necessary first-aid measures

Inhalation: Call a physician or poison control center immediately. Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. If experiencing respiratory symptoms (wheezing, tightness), seek immediate medical attention. Symptoms may be delayed.

Skin Contact: Get medical attention immediately. Immediately remove contaminated clothing and shoes. Wash skin thoroughly with soap and plenty of water for at least 15 minutes. If skin irritation, rash, or allergic reaction develops, get medical attention. Destroy or thoroughly clean contaminated shoes and clothing before reuse.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention if irritation persists or vision changes occur.

Ingestion: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth with water. Do NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed: Harmful if inhaled. Causes skin and eye irritation. May cause allergic skin reaction and respiratory sensitization (asthma-like symptoms). May cause respiratory tract irritation. Prolonged/repeated exposure may cause organ damage. Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed: Treat symptomatically. Symptoms may be delayed following exposure. Provide supportive care. For isocyanate exposure, monitor for pulmonary edema and sensitization. Contact poison control for specific guidance.

Personal Protection for First-aid Responders: Self-contained breathing apparatus (SCBA) and full protective clothing (chemical-resistant suit, gloves, eye/face protection) must be worn in case of fire or significant release. Avoid skin/eye contact and inhalation of vapors.

5. Fire-Fighting Measures

General Fire Hazards: No unusual fire or explosion hazards noted. Product is not flammable under normal conditions but may burn if involved in a fire. During fire, hazardous gases may be formed including carbon oxides (CO, CO₂), nitrogen oxides (NO_x), isocyanate vapors, and other toxic/irritating fumes.

NFPA 704 Hazard Diamond (for emergency response):



Health: 3 | Flammability: 1 | Instability: 1 | Special: W (Water Reactive)

Suitable Extinguishing Media: Use fire-extinguishing media appropriate for surrounding materials (dry chemical, CO₂, foam, water spray).

Unsuitable Extinguishing Media: Do not use water jet as an extinguisher, as this may spread the fire or cause violent reaction with isocyanates.

Special Protective Equipment and Precautions for Firefighters: Self-contained breathing apparatus (SCBA) and full protective clothing (turnout gear or chemical protective suit) must be worn in case of fire. Fight fire from maximum distance or use unmanned hose holders. Cool containers exposed to fire with water spray. Prevent runoff from entering drains, sewers, or waterways.

Specific Hazards Arising from the Chemical: Thermal decomposition or combustion may liberate toxic gases/vapors including isocyanates, hydrogen cyanide (trace), and irritating particulates. Reacts with water to produce CO₂ gas which may pressurize closed containers.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Evacuate unnecessary personnel. Ventilate closed spaces before entering. Keep upwind. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (chemical-resistant gloves, goggles, respirator with organic vapor/acid gas cartridges or supplied-air for high concentrations, protective clothing). Avoid breathing vapors/mists. Eliminate ignition sources.

Environmental Precautions: Do not contaminate water sources, sewers, or soil. Prevent further leakage or spillage if safe to do so. Avoid release to the environment. Contain spill to prevent migration to drains or waterways.

Methods and Material for Containment and Cleaning Up: Stop leak if safe to do so. Dam and absorb spillages with inert non-combustible absorbent material (sand, earth, vermiculite, or commercial absorbent). Collect spilled material in suitable sealed containers for proper disposal. Do not use water for cleanup as it reacts with isocyanates producing CO₂ and heat. Decontaminate area with dilute ammonia or proprietary isocyanate neutralizer after absorption. Ventilate area thoroughly after cleanup. Dispose of waste according to local regulations.

Notification: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations (local, state, federal). Report releases above RQ if applicable.

7. Handling and Storage

Handling – Technical Measures / Precautions: Observe good industrial hygiene practices. Use only in well-ventilated areas or with local exhaust ventilation. Minimize the risk of inhalation of vapors and mists. Mechanical ventilation may be required. Keep containers tightly closed when not in use.

Safe Handling Advice: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wear appropriate personal protective equipment (gloves, eye/face protection, protective clothing, respirator as needed). Avoid contact with eyes, skin, and clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling and before breaks. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.

Contact Avoidance Measures: Avoid contact with water, moisture, alcohols, amines, strong acids, strong bases, and oxidizing agents. These materials react with isocyanates.

Hygiene Measures: Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and wash before reuse. Do not eat, drink, or smoke in work areas.

Storage – Safe Storage Conditions: Store locked up in a cool, dry, well-ventilated place. Keep container tightly closed. Protect from moisture and freezing. Store between 60°F and 90°F (16°C and 32°C) for optimal shelf life. Keep away from heat, sparks, open flames, and incompatible materials. Containers may develop pressure; handle with care.

Safe Packaging Materials: Store in original unopened containers. Use HDPE, lined steel, or other compatible containers. Do not store in unlined metal containers.

8. Exposure Controls / Personal Protection

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit	Source
4,4'-Methylene bis(phenylisocyanate) (MDI)	TWA	0.005 ppm	ACGIH TLV (2025)
	Ceiling	0.02 ppm (0.2 mg/m ³)	OSHA PEL (29 CFR 1910.1000)
Diphenylmethane diisocyanate (MDI)	TWA	0.005 ppm	ACGIH / Similar to MDI

Note: Exposure limits for MDI are very low due to sensitization potential. Monitor airborne concentrations. No specific limits established for the proprietary prepolymer.

Appropriate Engineering Controls: Use only outdoors or in a well-ventilated area. Provide adequate general and local exhaust ventilation to maintain airborne concentrations below recommended exposure limits. Use process enclosures, local exhaust at point of generation, or other engineering controls as needed. Emergency eyewash and safety shower stations should be available in the work area.

Individual Protection Measures (PPE)

Eye/Face Protection: Wear safety glasses with side shields or chemical splash goggles. Face shield recommended for splash risk.

Skin Protection – Hand: Wear chemical-resistant gloves (nitrile, neoprene, or butyl rubber recommended; avoid latex). Check glove manufacturer for breakthrough time and suitability for isocyanates. Replace gloves at first sign of wear or contamination.

Skin and Body Protection: Wear chemical-resistant protective clothing (coveralls, apron, sleeves) appropriate for the risk of exposure. Wear chemical-resistant footwear. Launder contaminated clothing separately before reuse.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended limits, or in case of inadequate ventilation, an approved respirator must be worn. For MDI vapors/mists: NIOSH-approved air-purifying respirator with organic vapor/acid gas cartridges + P100 particulate filter, or supplied-air respirator (SAR) or SCBA for higher concentrations or IDLH conditions. Follow OSHA 1910.134 and manufacturer instructions. A respiratory protection program is required.

Hygiene Measures: Wash hands thoroughly before breaks, eating, drinking, smoking, or using the toilet. Remove contaminated clothing and PPE immediately after handling. Wash contaminated clothing before reuse. Avoid skin contact. Observe good industrial hygiene practices.

9. Physical and Chemical Properties

Property	Value / Description
Physical state / Form	Liquid (may crystallize below -40°C)
Color	Pale yellow to light brown
Odor	Slightly musty or amine-like
Odor threshold	No data available
pH	No data available (not applicable)
Freezing point	-40 °C (may supercool as liquid)
Boiling point	-200 °C (decomposes)
Flash point	> 200 °C / > 392 °F (closed cup, typical for MDI)
Flammability (solid/gas)	Not flammable
Upper/lower flammability limits	No data available
Auto-ignition temperature	No data available
Decomposition temperature	> 200 °C
Kinematic viscosity	Low to moderate (typical MDI ~ 10-20 mPa·s at 25°C)
Solubility in water	Reacts with water (hydrolyzes); not soluble
Partition coefficient (n-octanol/water)	Log Kow ~ 5.2 (high, but rapid hydrolysis in environment)
Vapor pressure	Very low (~ 0.0001 mmHg at 25°C)
Relative density (specific gravity)	~1.22 at 25°C
Relative vapor density	Vapors heavier than air (~8.5); may travel and collect in low areas
Evaporation rate	Slower than ether
Particle characteristics	Not applicable (liquid)

10. Stability and Reactivity

Reactivity: Reacts with water, alcohols, amines, and other active hydrogen compounds to produce CO₂ gas, heat, and urea linkages. May react with strong oxidizing agents.

Chemical Stability: Material is stable under normal conditions of storage, handling, and use (dry, 60-90°F).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Exothermic reaction with water/moisture may cause pressure buildup in closed containers or foaming.

Conditions to Avoid: Avoid heat, open flames, sparks, contamination, moisture/water ingress, freezing, and storage above recommended temperatures. Avoid contact with incompatible materials.

Incompatible Materials: Water, moisture, alcohols, amines (including polyols/amines in Part B if mixed improperly), strong acids, strong bases, strong oxidizing agents, and materials containing active hydrogens.

Hazardous Decomposition Products: Thermal decomposition or combustion may produce carbon oxides (CO, CO₂), nitrogen oxides (NO_x), isocyanate vapors, hydrogen cyanide (trace amounts under extreme conditions), and other toxic/irritating gases and particulates.

11. Toxicological Information

Information on likely routes of exposure

Inhalation: Harmful if inhaled. In high concentrations, vapors, fumes, or mists may irritate nose, throat, and mucous membranes. May cause respiratory tract irritation and sensitization (asthma-like symptoms, wheezing, chest tightness). Symptoms may be delayed.

Skin Contact: Causes skin irritation. May cause an allergic skin reaction (redness, itching, rash, eczema). Prolonged or repeated contact may cause sensitization.

Eye Contact: Causes serious eye irritation. May cause redness, tearing, pain, and blurred vision.

Ingestion: May be ingested by accident. Ingestion may cause irritation of the digestive tract, nausea, and malaise. Not expected to be a primary route of occupational exposure.

Information on toxicological effects

Acute Toxicity:

Oral: Not classified for acute toxicity based on available data. Specified substance (4,4'-MDI): LD50 (Rat) > 31,600 mg/kg.

Dermal: Not classified for acute toxicity based on available data. Specified substance (4,4'-MDI): LD50 (Rabbit) 10,000 mg/kg.

Inhalation: ATEMix ~11 mg/L (vapor); ATEMix ~1.5 mg/L (dust/mist). Harmful if inhaled (Category 4).

Skin Corrosion/Irritation: Category 2 – Causes skin irritation. 4,4'-MDI: in vivo (Rabbit) Category 2, 24-72 h.

Serious Eye Damage/Eye Irritation: Category 2A – Causes serious eye irritation.

Respiratory or Skin Sensitization: Respiratory sensitizer Category 1 – May cause allergy or asthma symptoms or breathing difficulties if inhaled. Skin sensitizer Category 1 – May cause an allergic skin reaction. MDI is a known respiratory sensitizer; repeated exposure may lead to occupational asthma.

Germ Cell Mutagenicity: No data available / Not classified based on available information.

Carcinogenicity: Category 2 – Suspected of causing cancer. No IARC, NTP, or OSHA specifically regulated carcinogens identified in this product at reportable levels. Some diisocyanates have been associated with lung effects in long-term studies.

Reproductive Toxicity: No data available / Not classified based on available information.

Specific Target Organ Toxicity – Single Exposure (STOT SE): Category 3 – May cause respiratory tract irritation.

Specific Target Organ Toxicity – Repeated Exposure (STOT RE): Category 2 – May cause damage to organs (respiratory system, lungs) through prolonged or repeated exposure. Repeated inhalation of MDI may cause lung damage and sensitization.

Aspiration Hazard: Not classified based on available data.

Other Effects: Prolonged or repeated skin contact may cause dermatitis. Respiratory sensitization may be permanent in some individuals.

12. Ecological Information

Ecotoxicity: No data available for the product. MDI reacts rapidly with water to form insoluble polyureas; acute aquatic toxicity is expected to be low under normal environmental conditions. Do not release to waterways.

Persistence and Degradability: No data available. MDI hydrolyzes rapidly in water; degradation products are not readily biodegradable.

Bioaccumulative Potential: No data available. Specified substance (4,4'-MDI) Log Kow: 5.22 (potential for bioaccumulation, but rapid hydrolysis limits environmental exposure).

Mobility in Soil: No data available. Low mobility expected due to reaction with water/soil components.

Other Adverse Effects: No data available. Avoid release to the environment.

13. Disposal Considerations

Disposal Methods: Dispose of waste at an approved treatment and disposal facility in accordance with applicable federal, state, and local laws and regulations. Do not discharge into drains, sewers, or waterways. Incineration in approved facility with proper controls for isocyanate emissions is preferred. Contaminated absorbent and debris should be disposed as hazardous waste. Empty containers may retain product residue; do not reuse. Decontaminate empty containers with dilute ammonia or approved neutralizer before disposal or recycling.

Contaminated Packaging: Dispose of in accordance with local regulations. Do not puncture or incinerate pressurized containers.

14. Transport Information

TDG (Canada): Not regulated as dangerous goods.

DOT (US): Not regulated as dangerous goods for ground transport in this packaging/configuration (reference similar MDI products).

IMDG (Sea): Not regulated as dangerous goods.

IATA (Air): Not regulated as dangerous goods.

Further Information: The above shipping descriptions may not be accurate for all container sizes, quantities, or modes of transportation. Classification may change based on packaging, concentration, or specific formulation. Always refer to the Bill of Lading and consult regulations for your specific shipment. MDI may be regulated in bulk or certain concentrations; verify with carrier and regulations.

15. Regulatory Information

US Federal Regulations

TSCA (Toxic Substances Control Act): All components are listed on the TSCA Inventory or exempt. 4,4'-MDI (CAS 101-68-8) and polymeric MDI are active.

TSCA Section 12(b) Export Notification: None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4): 4,4'-Methylene bis(phenylisocyanate) – Reportable Quantity 5,000 lbs.

SARA Title III / EPCRA:

- Section 302 Extremely Hazardous Substances: None present in regulated quantities.
- Section 304 Extremely Hazardous Substances Reporting: None above threshold.
- Section 311/312 Hazard Categories: Immediate (Acute) Health Hazard; Delayed (Chronic) Health Hazard.
- Section 313 Toxic Chemical Release Inventory (TRI): 4,4'-Methylene bis(phenylisocyanate) listed if above de minimis (typically 1.0% or threshold).

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention: None present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances: None present in regulated quantities.

US State Regulations

California Proposition 65: No ingredient requiring a warning under CA Prop 65 is present at levels requiring warning for this product.

International Regulations

Montreal Protocol, Stockholm Convention, Rotterdam Convention, Kyoto Protocol: Not applicable to this product.

VOC Content: When appropriately mixed with Part B, the mixed product has a VOC (less water and exempt solvent) of <5 g/L (regulatory VOC ~0 g/L). VOC Method 310: 0.00%. 100% solids formulation.

16. Other Information

Date of Preparation / Last Revision: 06/30/2026 – Version 1.1

Prepared by: ZIIS INC. EH&S; / Regulatory Compliance

Key / Legend: GHS = Globally Harmonized System; OSHA HCS = Hazard Communication Standard; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; TWA = Time Weighted Average; STEL = Short Term Exposure Limit; Ceiling = Ceiling Limit; RQ = Reportable Quantity; ATEmix = Acute Toxicity Estimate of mixture.

Disclaimer

ZIIS INC. (Utah Foam Products Inc.) warrants that its products are free from manufacturing defects and meet published characteristics when tested in accordance with ASTM and ZIIS standards. The information contained in this Safety Data Sheet is based on data available to ZIIS at the time of preparation and is believed to be accurate. However, no warranty, express or implied, including warranties of merchantability or fitness for a particular purpose, is made. The user assumes all risks associated with the use of this product. ZIIS will not be liable for any consequential, special, or incidental damages resulting from any claimed breach of warranty. This SDS does not constitute a guarantee of product performance or safety in all applications. Always read and follow label directions and consult the product Technical Data Sheet. Safety Data Sheets are updated periodically; ensure you have the current version.

END OF SAFETY DATA SHEET