



# 106 HY Polyurea

High-Performance, Two-Component, Spray-Applied Pure Elastomeric Polyurea Coating

## MSDS Material Safety Data Sheet



### 1. Identification of the Substance/Preparation and Company

Product Name: Flexi Tape

Product Description : High performance joint and crack sealing Tape

Manufacturer/Supplier: **Carbolink India Private Limited**

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Erragadda, Hyderabad- 500018

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### 2. Hazards Identification

Component A

- GHS Classification: Acute Toxicity (Inhalation) – Category 4; Skin Irritation – Category 2; Eye Irritation – Category 2A; Respiratory Sensitization – Category 1; Skin Sensitization – Category 1.
- 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.

Component B

- GHS Classification: Skin Irritation – Category 2; Eye Irritation – Category 2A; Skin Sensitization – Category 1; Chronic Aquatic Toxicity – Category 3.
- Signal Word: WARNING
- Hazard Statements: H315: Causes skin irritation; H319: Causes serious eye irritation; H317: May cause an allergic skin reaction; H412: Harmful to aquatic life with long-lasting effects.

Precautionary Statements

- Prevention: P260: Do not breathe dust/fume/gas/mist/vapors/spray. P280: Wear protective gloves/clothing/eye protection/face protection. P284: In case of inadequate ventilation, wear respiratory protection.
- Response: P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.

### 3. Composition/Information on Ingredients

Component A

- Chemical Characterization: Modified Diphenylmethane Diisocyanate (MDI) Prepolymer.
- Ingredients:
  - 4,4'-Diphenylmethane diisocyanate (CAS No: 101-68-8): 35–50%
  - MDI Prepolymer (Polymer with oligomeric MDI): 50–65%

Component B (Amine Resin Blend)

- Chemical Characterization: Polyoxyalkyleneamine and chain extender mixture.
- Ingredients:
  - Polyoxyalkylenediamine (CAS No: 9046-10-0): 60–80%
  - Diethylmethylbenzenediamine (DETDA) (CAS No: 68479-98-1): 10–25%
  - Proprietary Carbon Black/Pigment blend: 5–15%

### 4. First Aid Measures

**Inhalation:** Remove victim to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek immediate medical attention. (Critical for Component A to monitor for delayed asthmatic reactions).

**Skin Contact:** Immediately strip contaminated clothing. Wash skin thoroughly with plenty of water and soap, or a recognized industrial skin cleaner. Do not use solvents. Seek medical treatment if irritation persists.

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**Eye Contact:** Immediately flush eyes with running water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek urgent ophthalmic medical evaluation.

**Ingestion:** Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water and seek immediate medical help.

## 5. Firefighting Measures

**Suitable Extinguishing Media:** Carbon dioxide (\$CO\_2\$), dry chemical powder, alcohol-resistant foam, or water spray/fog for large fires.

**Unsuitable Extinguishing Media:** High-volume, direct water jets (may spread the fire).

**Specific Hazards:** Closed containers may rupture violently under extreme heat build-up. Combustion products may include highly toxic gases: nitrogen oxides (\$NO\_x\$), carbon monoxide (\$CO\$), carbon dioxide (\$CO\_2\$), hydrogen cyanide (\$HCN\$), and various isocyanate vapors.

**Protective Equipment:** Firefighters must wear full face-piece, positive-pressure self-contained breathing apparatus (SCBA) and full protective bunker gear.

## 6. Accidental Release Measures

**Personal Precautions:** Evacuate non-essential personnel. Eliminate all ignition sources. Ensure adequate ventilation. Do not breathe vapors or spray mists. Wear complete personal protective equipment (PPE) as detailed in Section 8.

**Environmental Precautions:** Prevent material from spreading or entering drains, sewers, watercourses, or soil. Report releases to relevant environmental safety authorities if necessary.

**Clean-up Methods:**

- Component A: Dam up. Absorb with inert material (sand, silica gel, sawdust). Treat spill site with a decontaminant solution (e.g., 90% water, 8% ammonia, 2% liquid detergent). Allow to react in an open container for 48 hours before sealing.
- Component B: Mechanically scoop or absorb with non-combustible absorbent material and place in approved disposal containers.

## 7. Handling and Storage

- **Handling:** Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapors generated during high-pressure spraying. Use only in well-ventilated fields. Wash thoroughly after handling. Empty containers retain product residue and can be hazardous.
- **Storage:** Store in strict compliance with local regulations. Keep drums vertically aligned, tightly sealed in a cool, dry, and well-ventilated indoor warehouse. Storage temperatures should be held between 15°C and 35°C.
- **Special Protection:** Component A is highly sensitive to moisture. Blanket with dry nitrogen gas once opened to prevent premature cross-linking or crusting. Keep away from food, drink, and incompatible materials (see Section 10).

## 8. Exposure Controls/Personal Protection

**Exposure Limits (Component A - MDI):**

- ACGIH TLV (TWA): 0.005 ppm
- OSHA PEL (Ceiling): 0.02 ppm

**Engineering Controls:** Use local exhaust ventilation or specialized structural containment during high-pressure spraying to keep airborne concentrations below occupational exposure thresholds.

**Personal Protective Equipment (PPE)**

Mandatory Spray Application Rule: High-pressure atomization generates aggressive airborne paint mists. A standard cartridge mask is insufficient during active application.

- Respiratory Protection: Applicators and surrounding personnel must wear a positive-pressure, supplied-air respirator (SAR) or a loose-fitting hood system with air supply lines.
- Eye/Face Protection: Chemical splash goggles paired with a full face shield.
- Skin Protection: Permeation-resistant chemical gloves (Nitrile, Butyl rubber, or Neoprene), protective chemical suits, and steel-toed safety boots.
- Hygiene Measures: Food and drink must be restricted from the active workspace. Wash hands before breaks and immediately after finishing work.

## 9. Physical and Chemical Properties

Property	Component A	Component B
Total Width / Coating Width	Liquid	Liquid (Pigmented)
Color	Clear to pale yellow	Visually customizable / Dark
Odor	Faint, aromatic	Faint, amine-like
Boiling Point	> 300°C	> 280°C
Flash Point	> 175°C (Closed Cup)	> 160°C (Closed Cup)
Vapor Pressure	< \$0.00001\$mmHg at 25°C	< \$0.1\$mmHg at 20°C

Property	Component A	Component B
Density / Specific Gravity	1.10 – 1.15 g/cm <sup>3</sup>	1.00 – 1.05 g/cm <sup>3</sup>
Solubility in Water	Reacts slowly to form CO <sub>2</sub> gas	Moderately soluble
Volatile Organic Compounds	0% (VOC-Free)	0% (VOC-Free)

## 10. Stability and Reactivity

**Reactivity:** Component A reacts exothermically with water, alcohols, amines, and strong bases. Reaction with moisture creates carbon dioxide (SCO<sub>2</sub>) gas, which can pressurize sealed containers to the point of rupture.

**Chemical Stability:** Structurally stable under recommended storage and handling profiles.

**Possibility of Hazardous Reactions:** Polymerization can occur if Component A is exposed to temperatures above 200°C or comes into contact with strong basic catalysts.

**Conditions to Avoid:** Exposure to moisture, extreme heat, open flames, and direct sunlight.

**Incompatible Materials:** Strong oxidizing agents, acids, bases, alcohols, copper alloys, and water.

**Hazardous Decomposition Products:** Under fire conditions only—monomeric MDI, isocyanate vapors, oxides of carbon and nitrogen, and trace hydrogen cyanide.

## 11. Toxicological Information

### Acute Toxicity:

- Component A: Oral LD<sub>50</sub> (Rat) > 10,000 mg/kg; Inhalation LC<sub>50</sub> (Rat) ~ 0.49 mg/L (as respirable aerosol).
- Component B: Oral LD<sub>50</sub> (Rat) ~ 738 mg/kg; Dermal LD<sub>50</sub> (Rabbit) > 2,000 mg/kg.

**Skin Corrosion/Irritation:** Causes localized skin irritation, redness, and swelling.

**Serious Eye Damage/Irritation:** Causes significant eye irritation with stinging, tearing, and conjunctival redness.

### Respiratory/Skin Sensitization:

**Component A:** May cause severe allergic respiratory reaction (asthma-like symptoms). Once sensitized, even trace exposure below TLVs can trigger an attack. May cause permanent allergic skin reactions.

**Carcinogenicity:** MDI (Component A) is classified by IARC as Category 3 (Not classifiable as to its carcinogenicity to humans) due to lack of conclusive human evidence.

## 12. Ecological Information

**Ecotoxicity:** Component B is harmful to aquatic environments. Diethylmethylbenzenediamine (DETDA) is classified as toxic to aquatic life with long-lasting effects.

- Component B Fish LC<sub>50</sub> (96h): 10–100 mg/L.
- Component A (MDI) EC<sub>50</sub> (Daphnia magna, 24h): > 1,000 mg/L (due to low solubility and reaction forming inert polyureas).

**Persistence and Degradability:** Not readily biodegradable. Component A reacts with water to form stable, inert, non-biodegradable solid polyurea compounds.

**Bioaccumulative Potential:** Low potential for bioaccumulation.

**Mobility in Soil:** Low mobility expected due to rapid chemical reaction (Component A) or adsorption properties.

## 13. Disposal Considerations

**Waste Treatment Methods:** Generation of waste should be avoided or minimized wherever possible. Do not dump liquid chemical waste into drains, sewers, or natural waterways.

**Product Disposal:** Dispose of surplus, unreacted components via a certified hazardous waste disposal contractor in full accordance with national and local environmental regulations.

**Contaminated Packaging:** Empty drums should be completely drained, securely closed, and sent to an authorized drum reconditioner or hazardous waste facility. Do not cut, weld, or pierce empty metal drums due to residual internal vapors.

**Cured Material Disposal:** Completely reacted, fully cured, and dry 106 HY Polyurea membranes are non-hazardous inert solids and can be disposed of via conventional industrial landfill rules.

## 14. Transport Information

**UN Number:** Not regulated.

**UN Proper Shipping Name:** Not regulated.

**Transport Hazard Class:** Not regulated.

## 15. Regulatory Information

Safety, Health, and Environmental Regulations: Complies with local regulations.

## 16. Other Information

Preparation Date: July 23, 2024

Revision Date: July 23, 2024

**Disclaimer:** The information provided in this MSDS is based on our current knowledge and experience. The user must determine the product's suitability for the intended application. Carbolink reserves the right to change the properties of its products. Always refer to the most recent local Product Data Sheet, available upon request