



## Section 1: Identification

### Product Identifier

Trade Name: R-24-024  
 Chemical Name: Polyurethane Resin  
 Recommended Use: Component for the manufacture of Polyurethanes  
 Restrictions on Use:

### Chemical Manufacturer Information

Name:	NCFI Polyurethanes	Phone:	(800) 346-8229
Address:	1515 Carter St Mount Airy, NC 27030	Fax:	(336) 789-9586
Website:	www.NCFI.com	Emergency Phone:	CHEMTREC: 800-424-9300

## Section 2: Hazard Identification

### Classification of the substance or mixture:

<b>GHS Classification:</b>	
• Skin irritation, Category 3	• Eye irritation, Category 2

### GHS Labeling:



<b>Hazard Statements:</b>	
• May cause skin irritation	• May cause eye irritation
• May cause respiratory irritation	•

<b>Precautionary Statements:</b>	
• Do not breathe fume/gas/mist/vapors/spray	• Wear protective gloves/eye protection/face protection
• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	• IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
• IF ON SKIN: Wash with plenty of soap and water	

### Other Hazards:



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## Section 3: Composition

### Hazardous Components

Type of product: Mixture

CAS#	Weight %	Name
Proprietary	<1	Tertiary amine catalysts
460-73-1	<4	1,1,1,3,3-Pentafluoropropane (CF <sub>3</sub> CH <sub>2</sub> CHF <sub>2</sub> or HFC-245fa)

## Section 4: First Aid Measures

<b>Inhalation:</b>	Move to fresh air if symptoms develop. If breathing is difficult, give oxygen and call physician.
<b>Eye Contact:</b>	Flush with water for at least 15 minutes. See a physician if irritation develops.
<b>Ingestion:</b>	Do not induce vomiting unless told to do so by a medical professional
<b>Most Important symptoms and effects, acute and delayed:</b>	May cause skin or eye irritation upon contact. Avoid breathing vapors. The dense vapors can displace and reduce breathing air in confined or unventilated spaces causing asphyxiation. Overexposure may cause tremors, confusion, irritation, and may result in cardiac sensitization.
<b>Indication of immediate medical attention and special treatment, if applicable:</b>	N/A
<b>Skin Contact:</b>	Wash with soap and water at first opportunity.

## Section 5: Fire-Fighting Measures

<b>Suitable extinguishing media:</b>	Water, dry chemicals, CO <sub>2</sub>
<b>Unsuitable extinguishing media:</b>	None
<b>Special hazards arising from the chemical:</b>	Overheated containers may rupture due to pressure produced by CF <sub>3</sub> CH <sub>2</sub> CHF <sub>2</sub> . CF <sub>3</sub> CH <sub>2</sub> CHF <sub>2</sub> burns to form acids and noxious gases.
<b>Precautions for fire-fighters:</b>	A self-contained breathing apparatus should be worn to protect against toxic and irritating vapors.

## Section 6: Accidental Release Measures

<b>Personal precautions, protective equipment, and emergency procedures:</b>	Clear area. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.
<b>Environmental precautions:</b>	Do not discharge into drains/surface waters/groundwater
<b>Methods and material for containment and cleanup:</b>	Absorb with sawdust, etc., and shovel into container. Waste material should be disposed of under conditions which meet federal, state, and local environmental regulations.



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## Section 7: Handling and Storage

<b>Precautions for safe handling:</b>	Store between 65°F and 85°F out of sunlight. Relieve pressure slowly when opening container. Under no circumstances should empty drums be burned or cut open with an electric or gas torch.
<b>Conditions for safe storage, including any incompatibilities:</b>	Keep tightly sealed.

## Section 8: Exposure Controls and PPE

### Exposure Limits

Component:	Type	Value
Tertiary Amine Catalysts <sup>1</sup>	TWA	None established
1,1,1,3,3-Pentafluoropropane <sup>1</sup> (CF <sub>3</sub> CH <sub>2</sub> CHF <sub>2</sub> or HFC-245fa)	TWA	300 ppm recommended

<sup>1</sup>Not listed as a carcinogen (NTA, IARC, OSHA)

### Exposure Controls

<b>Respiratory Protection:</b>	The specific respirator selected must be based on contamination levels of this material found in the workplace and the working limits of the respirator. A supplied air, full-face mask, positive pressure or continuous flow respirator or a supplied air hood is required when airborne concentrations are unknown or exceed threshold limit values. A positive pressure, self-contained breathing apparatus can be used in emergencies or other unusual situations. Full-face air purifying respirators equipped with organic vapor cartridges can be used in certain situations, <i>see OSHA standard 29CFR 1910.134</i> . All equipment must be NIOSH approved and maintained.
<b>Hand, eye, skin, body protection:</b>	Wear goggles or chemical safety glasses and chemically resistant rubber or plastic gloves. Avoid eye and skin contact. Eye wash system and showers should be available.

## Section 9: Physical and Chemical Properties

### Basic chemical and physical properties

<b>Appearance:</b>	Liquid	<b>Flammability:</b>	No
<b>Color:</b>	Black	<b>Upper/lower flammability or explosive limits:</b>	N/A
<b>Odor:</b>	Ethereal odor	<b>Vapor pressure:</b>	N/A
<b>Odor threshold:</b>	N/A	<b>Vapor density:</b>	N/A
<b>pH:</b>	N/A	<b>Relative density:</b>	1.07g/mL
<b>Melting pt/freezing pt:</b>	<32°F	<b>Solubility(ies):</b>	Slightly soluble in water
<b>Boiling pt/boiling range:</b>	60°F	<b>Partition coefficient (n-octanol/water):</b>	N/A
<b>Flash point:</b>	>200°F	<b>Auto-ignition temperature:</b>	>500°F
<b>Evaporation rate:</b>	Slower than ether	<b>Decomposition temperature:</b>	>500°F



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## Section 10: Stability and Reactivity

<b>Chemical stability:</b>	Stable
<b>Possibility of hazardous reactions:</b>	N/A
<b>Conditions to avoid:</b>	Temperatures over 85°F
<b>Incompatible materials:</b>	Isocyanates and other chemicals that react with hydroxyl groups.
<b>Hazardous decomposition products:</b>	When burned, CO, CO <sub>2</sub> , NO <sub>x</sub> aliphatic fragments, halogens, halogen acids and possibly carbonyl halides.

## Section 11: Toxicological Information

<b>Acute toxicity:</b>	May cause skin irritation
<b>Chronic toxicity:</b>	Not available
<b>Likely routes of exposure:</b>	Skin
<b>Symptoms related to physical, chemical and toxicological characteristics:</b>	May cause skin irritation
<b>Delayed and immediate effects and chronic effects from short and long-term exposure:</b>	May cause skin irritation; avoid contact with eyes
<b>Numerical toxicity measures:</b>	Not available

## Section 12: Ecological Information

<b>Ecotoxicity:</b>	Not a marine pollutant
<b>Persistence and degradability:</b>	No known significant effects
<b>Bioaccumulative potential:</b>	Does not bioaccumulate
<b>Mobility in soil:</b>	

## Section 13: Disposal

<b>Waste disposal:</b>	R component drums can be sent to drum reconditioners or disposed of as ordinary industrial waste in compliance with pertinent regulations
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## Section 14: Transport

<b>UN number:</b>	Not regulated
<b>UN Proper shipping name:</b>	Not regulated
<b>Transport Hazard class(es):</b>	Not regulated
<b>Packing group, if applicable:</b>	Not regulated
<b>Marine pollutant (YorN):</b>	N
<b>Special precautions:</b>	None



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## Section 15: Regulatory

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### Relevant safety, health, and environmental regulations

<b>Inventory Status:</b>	All components TSCA listed
<b>US Regulations:</b>	No ingredients listed
<b>US Superfund Amendments and Reauthorization Act (SARA) Title III Section 313 information:</b>	No ingredients listed

## Section 16: Other

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<b>SDS Preparation Date:</b>	06/26/2014
<b>Revision Date:</b>	

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## Section 1: Identification

### Product Identifier

**Trade Name:** A-24-024  
**Chemical Name:** Diphenylmethane Diisocyanate (MDI)  
**Recommended Use:** Component for production of polyurethanes  
**Restrictions on Use:**

### Chemical Manufacturer Information

**Name:** NCFI Polyurethanes  
**Address:** 1515 Carter St Mount Airy, NC 27030  
**Website:** [www.NCFI.com](http://www.NCFI.com)  
**Phone:** (800) 346-8229  
**Fax:** (336) 789-9586  
**Emergency Phone:** CHEMTREC: 800-424-9300

## Section 2: Hazard Identification

### Classification of the substance or mixture

GHS Classification:	
• Skin irritation, Category 2	• Acute toxicity, Inhalative, Category 4
• Sensitization of respiratory airways, Category 1	• Eye irritation, Category 2
• Carcinogenicity, Category 2	• Sensitization of the skin, Category 1
• Specific target organ toxicity (repeated exposure), Category 2	• Specific target organ toxicity (single exposure), Category 3

### GHS Labeling:



**Danger**

Hazard Statements:	
• May cause an allergic skin reaction	• Causes skin irritation
• Harmful if inhaled	• Causes serious eye irritation
• May cause respiratory irritation	• May cause allergy or asthma symptoms or breathing difficulties if inhaled
• May cause damage to organs through prolonged or repeated exposure	• Suspected of causing cancer

Precautionary Statements:	
• Do not breathe dust/fume/gas/mist/vapors/spray	• IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
• Wear protective gloves/eye protection/face protection	• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
• IF ON SKIN: Wash with plenty of soap and water	

**Other Hazards:** Persons with respiratory conditions should avoid handling this product.



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## Section 3: Composition

### Hazardous Components

Type of product: substance

CAS#	Weight %	Name
101-68-8	38.0%	Diphenylmethane-4,4'-diisocyanate (MDI)
26447-40-5	< 10.0%	MDI Mixed Isomers
9016-87-9	< 55.0%	P-MDI

## Section 4: First Aid Measures

<b>General:</b>	Remove contaminated clothing
<b>Inhalation:</b>	Remove affected individual to fresh air and keep person calm. Assist in breathing if necessary. Immediate medical attention required.
<b>Skin Contact:</b>	Wash affected areas with soap and water. Seek medical attention for irritation.
<b>Eye Contact:</b>	Rinse for at least 15 minutes with water. Immediate medical attention required.
<b>Ingestion:</b>	Rinse mouth and drink plenty of water. Do not induce vomiting. Immediate medical attention required.

## Section 5: Fire-Fighting Measures

<b>Suitable extinguishing media:</b>	Water, dry chemicals, CO <sub>2</sub>
<b>Unsuitable extinguishing media:</b>	High volume water jet
<b>Special hazards arising from the chemical:</b>	At temperatures above 400°F, MDI can polymerize/decompose causing pressure build-up in closed containers and possibly rupture. Avoid water contamination in closed containers which may cause rupture (CO <sub>2</sub> is evolved).
<b>Precautions for firefighters:</b>	Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

## Section 6: Accidental Release Measures

<b>Personal precautions, protective equipment, and emergency procedures:</b>	Clear area. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.
<b>Environmental precautions:</b>	Do not discharge into drains/surface waters/groundwater
<b>Methods/material for containment and cleanup:</b>	Remove mechanically; cover remainder with wet, absorbent material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx. one hour transfer to waste container and do not seal (evolution of CO <sub>2</sub> ?). Keep damp in a safe ventilated area for several days.

Spill area can be decontaminated with the following recommended decontamination solution:

Decontamination Solution #1: 8-10% sodium carbonate and 2% liquid soap in water

Decontamination Solution #2: Liquid/yellow soap (potassium soap with ~15% anionic surfactant): 20 ml; Water: 700 ml; Polyethylene glycol (PEG 400): 350 ml



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## Section 7: Handling and Storage

<b>Precautions for safe handling:</b>	Provide sufficient air exchange and/or exhaust in work rooms. Occupational exposure limits should not be exceeded (refer to Section 8). Contact with skin and eyes and inhalation of vapors must be avoided. Keep away from foodstuffs, drinks, and tobacco. Wash hands before breaks and at end of work.
<b>Conditions for safe storage, including any incompatibilities:</b>	Keep container tightly closed and protect against moisture. Segregate from bases. Store from 32F – 110F.

## Section 8: Exposure Controls and PPE

### Exposure Limits

Component	Type	Value
P-MDI	OSHA PEL	CLV 0.02 ppm 0.2 mg/m <sup>3</sup>
Diphenylmethane-4,4'-diisocyanate (MDI)	OSHA PEL	CLV 0.02 ppm 0.2 mg/m <sup>3</sup>

### Exposure Controls

<b>Respiratory Protection:</b>	Respiratory protection required in insufficiently ventilated working areas and during spraying. An air-fed mask, or for short periods of work, a combination of charcoal filter and particulate filter is recommended.
<b>Hand, eye, skin, body protection:</b>	Chemical resistant protective gloves should be worn to prevent all skin contact. Wear eye/face protection. Wear suitable protective clothing

## Section 9: Physical and Chemical Properties

### Basic chemical and physical properties

<b>Appearance:</b>	liquid	<b>Flammability</b>	not applicable
<b>Color</b>	dark amber	<b>Upper/lower flammability or explosive limits</b>	
<b>Odor</b>	Slightly aromatic	<b>Vapor pressure</b>	0.00016 mmHg
<b>Odor threshold</b>	not established	<b>Vapor density</b>	not established
<b>pH</b>	not established	<b>Relative density</b>	1.24
<b>Melting pt/freezing pt</b>	3° C	<b>Solubility(ies)</b>	Reacts with water
<b>Boiling pt/boiling range</b>	625°F	<b>Partition coefficient (n-octanol/water)</b>	not established
<b>Flash point</b>	390°F	<b>Auto-ignition temperature</b>	not applicable
<b>Evaporation rate</b>	not established	<b>Decomposition temperature</b>	not established

## Section 10: Stability and Reactivity

<b>Chemical stability:</b>	Polymerises at about 200° C with evolution of CO <sub>2</sub>
<b>Possibility of hazardous reactions:</b>	Exothermic reaction with amines and alcohols; reacts with water forming CO <sub>2</sub> ; in closed containers, risk of bursting owing to increase of pressure
<b>Conditions to avoid:</b>	Avoid moisture
<b>Incompatible materials:</b>	water, alcohols, strong bases, amines



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<b>Hazardous decomposition products:</b>	By high heat or fire; CO, CO <sub>2</sub> , NO <sub>x</sub> , benzene, toluene, aliphatic fragments and traces of HCN
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## Section 11: Toxicological Information

<b>Acute toxicity (inhalation):</b>	LC50: 490mg/kg , vapor, 4hr rat
<b>Chronic toxicity:</b>	2 years, inhalation; NOAEL: 0.2mg/m <sup>3</sup> , (rat, Male/Female, 6hrs/day 5 days/week)
<b>Likely routes of exposure:</b>	Skin, inhalation
<b>Symptoms related to physical, chemical and toxicological characteristics:</b>	Minor skin irritation; asthma-like symptoms
<b>Delayed and immediate effects and chronic effects from short and long-term exposure:</b>	Possible sensitization
<b>Numerical toxicity measures:</b>	

## Section 12: Ecological Information

<b>Ecotoxicity:</b>	LC0: >1,000mg/l (Zebra fish 96 hrs) LC0: >3,000mg.l (Killifish 96hrs)
<b>Persistence and degradability:</b>	0%
<b>Bioaccumulative potential:</b>	Does not bioaccumulate
<b>Mobility in soil:</b>	

## Section 13: Disposal

<b>Waste disposal:</b>	Incinerate or dispose of in a licensed facility. Do not discharge substance/product into sewer system. Do not burn empty drums or cut open with gas or an electric torch as toxic decomposition products may be liberated. Do not reuse empty containers.
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## Section 14: Transport

### Land transport

<b>USDOT</b>	Not classified as dangerous good
<b>China</b>	Not classified as dangerous good

### Sea transport

<b>IMDG</b>	Not classified as dangerous good
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### Air transport

<b>IATA/ICAO</b>	Not classified as dangerous good
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### Further information

DOT: This product is regulated if the amount in a single receptacle exceeds the Reportable Quantity (RQ). Refer to Section 15 for the RQ of this product.



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## Section 15: Regulatory

<b>Relevant safety, health, and environmental regulations:</b>	
<b>Inventory Status:</b>	TSCA listed
<b>US Regulations:</b>	Not regulated
<b>US Superfund Amendments and Reauthorization Act (SARA) Title III Section 313 information:</b>	Methylene Bis Phenylisocyanate 101-68-8 5000 lbs. See SDS – A Component (Same as Diphenylmethane diisocyanate (MDI) Polymeric Diphenylmethane diisocyanate 9016-87-9 See SDS – A Component

## Section 16: Other

<b>SDS Preparation Date:</b>	06/26/2014
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