

Material Safety Data Sheet



P. O. Box 1528 • MOUNT AIRY, NC 27030-1528
336-789-9161 • FAX 336-789-9586 • www.NCFI.com

Dalton, GA

High Point, NC

Mount Airy, NC

Salt Lake City, UT

PRODUCT IDENTIFICATION

Trade Name: NCFI R-24-023
Chemical Name: Mixture
Synonyms: Polyurethane Resin

Chemical Family: Polyol Resin System
Formula: N/A
Date Prepared: 04/09/13

INGREDIENTS-HAZARD CLASSIFICATION

Name:	CAS NO.	%	PEL
1,1,1,3,3-pentafluoropropane (CF ₃ CH ₂ CHF ₂ or HFC-245fa)	460-73-1	4	None Established 300 ppm TWA recommended
Tertiary Amine Catalyst	Proprietary	3	None Established

¹ Not listed as a carcinogen (NTA, IARC, OSHA)

SHIPPING INFORMATION

Not regulated when shipped by land, water or air.

PHYSICAL DATA

Boiling Point (°F): CF₃CH₂CHF₂, 60°F
Solubility in Water: Slight
Appearance and Odor: Amber liquid, ethereal odor

Specific Gravity: 1.08
% Volatile by Volume: 4

FIRE AND EXPLOSION HAZARD DATA

Flash Point (test method): After CF₃CH₂CHF₂ evaporation, >200°F (P-M)
Extinguishing Media: Water, dry chemicals, CO₂
Special Fire Fighting Procedures: A self-contained breathing apparatus should be worn to protect against toxic and irritating vapors.
Unusual Fire and Explosion Hazards: Overheated containers may rupture due to pressure produced by CF₃CH₂CHF₂. CF₃CH₂CHF₂ burns to form acids and noxious gases.

Flammable Limits (vapor)
Lower: None; Upper: None

REACTIVITY DATA

Stability: Stable
Polymerization: Will not occur
Incompatibility: Isocyanates and other chemicals that react with hydroxyl groups.
Hazardous Decomposition Products: When burned; CO, CO₂, NO_x, aliphatic fragments, halogens, halogen acids and possibly carbonyl halides.

Conditions to Avoid: Temperatures over 85°F
Conditions to Avoid: N/A

HEALTH HAZARD DATA

Permissible Exposure Limit: None established.

Effects of Overexposure: 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.

First Aid Procedures

Eyes: Flush with water for at least 15 minutes. See a physician if irritation develops.

Skin: Wash with soap and water at first opportunity.

Inhalation: Move to fresh air if symptoms develop. If breathing is difficult, give oxygen and call physician.

Ingestion: Do not induce vomiting unless instructed to do so by a medical professional.

SPECIAL PROTECTION INFORMATION

Ventilation: Local exhaust ventilation is recommended when working with this product. Uses requiring heating and/or spraying may require more ventilation or personal protective equipment.

Respiratory Protection: 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, *see OSHA standard 29CFR 1910.134*. All equipment must be NIOSH approved and maintained.

Eye Protection: Goggles or chemical safety glasses.

Gloves: Chemically resistant rubber or plastic.

Other: Avoid eye and skin contact. Eye wash system and showers should be available.

SPILL OR LEAK PROCEDURES

Remove or extinguish ignition or combustion sources.

Contain spill. Absorb with sawdust, etc., and shovel into container. Waste material should be disposed of under conditions which meet federal, state, and local environmental regulations.

Wash area with detergent and water.

SPECIAL PRECAUTIONS

Store between 65°F and 85°F out of sunlight. Keep tightly sealed. Relieve pressure slowly when opening container. R Component drums can be sent to drum reconditioners or disposed of as ordinary industrial waste in compliance with pertinent regulations.

CAUTION: Under no circumstances should empty drums be burned or cut open with an electric or gas torch.

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PRODUCT IDENTIFICATION

Trade Name: NCFI A-24-023

Chemical Family: Aromatic Isocyanate

Chemical Name: Polymethylene polyphenylisocyanate

Formula: N/A

Synonyms: Polymeric MDI

Date Prepared: 04/09/13

INGREDIENTS-HAZARD CLASSIFICATION

Name:	CAS NO.	%	PEL
Diphenylmethane diisocyanate (MDI) ¹	101-68-8	50	0.02 ppm ceiling
Higher polymers of similar structure	9016-87-9	50	None Established.

¹ Not listed as a carcinogen (NTA, IARC, OSHA)

SHIPPING INFORMATION

Not regulated when shipped by land, water or air when packaged in single containers of 5000 pounds or less.

PHYSICAL DATA

Boiling Point (°F): 625°F

Specific Gravity: 1.24

Solubility in Water: Insoluble, reacts

% Volatile by Volume: None

Appearance and Odor: Brown liquid, slight aromatic odor

FIRE AND EXPLOSION HAZARD DATA

Flash Point (test method): 390°F (P-M)

Extinguishing Media: Water, dry chemicals, CO₂

Special Fire Fighting Procedures: A self-contained breathing apparatus should be worn to protect against toxic and irritating vapors.

Unusual Fire and Explosion Hazards: 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 (CO₂ is evolved).

REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Contamination with water

Polymerization: May occur from contact with water, alcohols, glycols or other materials containing active hydrogens.

Incompatibility: Water, alcohols, amines, strong bases.

Hazardous Decomposition Products: By high heat or fire; CO, CO₂, NO_x, benzene, toluene, aliphatic fragments, traces of HCN

HEALTH HAZARD DATA

Permissible Exposure Limit: 0.02 ppm ceiling for MDI.

Effects of Overexposure: May cause skin or eye irritation upon contact. Inhalation of MDI vapors may cause breathlessness, chest discomfort, coughing and reduced pulmonary functions. Exposure may produce asthma-like symptoms, also may lead to allergic sensitivity.

First Aid Procedures

Eyes: Flush with flowing water for at least 15 minutes, then obtain medical attention.

Skin: Remove contaminated clothing and wash off with soap & water.

Inhalation: Remove to fresh air, administer oxygen if necessary.

Ingestion: Drink large amounts of water. See a physician.

SPECIAL PROTECTION INFORMATION

Ventilation: MDI has a very low vapor pressure at room temperature. General/local ventilation typically control exposure levels very adequately. Uses requiring heating and/or spraying may require more aggressive engineering controls or personal protective equipment. Monitoring is required to determine engineering controls.

Respiratory Protection: 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, *see OSHA standard 29CFR 1910.134*. All equipment must be NIOSH approved and maintained.

Eye Protection: Wear goggles or chemical safety glasses.

Gloves: Chemically resistant rubber or plastic.

Other: Avoid eye and skin contact. Eye wash system and safety showers should be available.

SPILL OR LEAK PROCEDURES

Contain spill. Absorb with sawdust, etc., and shovel into open top drum. Decontaminate absorbent and spill area with 2% detergent/water solution. Let waste stand for 1 to 2 days, then dispose of waste in a licensed facility. Respiratory protection/ventilation is recommended during clean-up.

SPECIAL PRECAUTIONS

Store between 65°F and 85°F out of sunlight. Keep tightly sealed to prevent moisture contamination. Relieve pressure slowly when opening container. Once opened, protect contents from water with dry atmosphere (-40°F dew point). If isocyanate becomes contaminated, do not reseal. Empty isocyanate drums or other container should be decontaminated by filling with water or decontamination solution, preferably outdoors. Allow to stand for 24-48 hours, open to the atmosphere. **DO NOT SEAL DRUMS OR CONTAINERS.** Drain the drums and puncture to prevent reuse. Dispose of as ordinary industrial waste.

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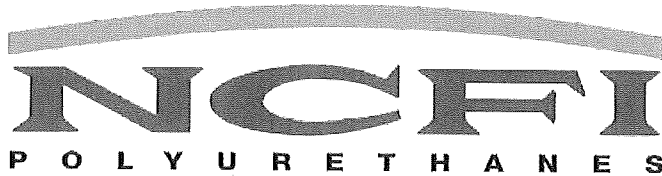
SARA 313 INFORMATION

The isocyanate (A) component product of this NCFI system contains the following chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986, EPCRA Section 313 (40 CFR 372) and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

<u>CHEMICAL NAME</u>	<u>CAS NUMBER</u>	<u>CERCLA RQ</u>	<u>CONCENTRATION</u>
Methylene Bis Phenylisocyanate (Same as Diphenylmethane diisocyanate (MDI))	101-68-8	5000 lbs.	See MSDS – A Component
Polymeric Diphenylmethane diisocyanate	9016-87-9		See MSDS – A Component

IMPORTANT NOTICE

This notification is a part of the Material Safety Data Sheet document and must not be detached. Any copying and redistribution of the Material Safety Data Sheet shall include copying of this notice and attaching the copy to the redistributed Material Safety Data Sheet copies.



PO Box 1528 • Mount Airy, NC 27030 • 800-346-8229 • www.ncfi.com

*** APPLICATOR BULLETIN ***

**GENERAL GUIDELINES FOR NEW AND RETROFIT
APPLICATIONS OF SPRAY POLYURETHANE FOAM**

We recommend the following steps to ensure a safer worksite when polyurethane foam is applied:

1. Persons handling foam system chemicals, or involved in the foam application, should always first read and understand the required Material Safety Data Sheet and Physical Property Bulletin for the system being applied.
2. Any debris, trash, etc. should be removed from the area being sprayed before application begins.
3. Schedule job so that any hot work including soldering, welding, etc. is completed before foam application. Post signs that "no hot work should be done within the vicinity of finished foam" and ensure these signs will be left in place permanently.
4. Smoking or any other ignition source should not be permitted while foam is being applied.
5. No flammable chemicals, such as wasp and hornet killer, should be sprayed in the area of the foam application 24 hours before or after foam application, and only then if the area is well ventilated.
6. For areas not covered with a walking surface, install temporary planking on the attic floors to provide attic traffic paths and working platforms. Cover exposed recessed lighting fixtures, wiring and other fixtures with masking to protect from overspray and damage. Do not apply foam directly to any recessed lighting fixtures.
7. A qualified electrician should conduct a complete electrical inspection in retrofit applications (especially when a fuse box is present instead of a breaker panel) to be sure application is safe and risk of electrical fire is avoided due to substandard, damaged, and/or improper electrical system.

8. At least one approved fire extinguisher should be present in the immediate area of the applicators while preparation and application occurs. One should also be located in the trailer or truck where the foam equipment and chemical is stored.
9. Spraying foam will generate heat. Foam which is applied too thick in single passes can build temperatures which will degrade cell structure and not produce foam with optimum properties. Individual formulations will differ in how thick specific foam may be applied and how it will react if sprayed excessively thick. In the most extreme case, some systems could reach dangerously high temperatures inside the finished foam which could lead to splitting, charring, or even spontaneous combustion.
10. NCFI recommends that spray pass thickness not exceed a maximum of two inches for closed cell foams or twelve inches for open cell foams. If multiple passes are sprayed, ten minutes should be allowed for the exothermic heat to dissipate before each additional pass is applied. For specific recommendations, contact NCFI.
11. Foam should only be applied as specified to the building envelope enclosing the conditioned space.
12. Any substandard foam applied for any reason (due to operator error, improper chemical storage, equipment malfunction, etc.) should be completely removed immediately and disposed of properly.
13. All substrates being insulated with foam must be fully ventilated for at least 24 hours after application so all heat and vapors may fully dissipate.
14. Any foam shavings or trimmings should be removed from the site after application and disposed of properly.
15. Persons involved in the application process should be outfitted with proper Personal Protective Equipment (PPE). Refer to your Contractor Product Stewardship Manual for detailed recommendations.

For any questions or more information please contact NCFI toll free at 800-346-8229.