









SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: LRF Adhesive O Part A
TRADE NAME: N/A
**CHEMICAL NAME /
SYNONYM:** N/A
CHEMICAL FAMILY: N/A
MANUFACTURER: GAF
ADDRESS: 1 Campus Drive, Parsippany, NJ 07054
**24 HOUR EMERGENCY
PHONE: (CHEMTREC)** 800-424-9300
INFORMATION ONLY: 800-766-3411
PREPARED BY: Corporate EHS
APPROVED BY: Corporate EHS

SECTION 2: HAZARD IDENTIFICATION

NFPA and HMIS RATINGS:

	NFPA Hazard Rating		HMIS Hazard Rating
	2		2
	2		2
	1		1
Special Hazards	-	Personal Protection	X

GHS LABEL ELEMENTS:

GHS CLASSIFICATION: Eye Irritant - Category 2A
Skin Irritant - Category 2
Skin Sensitizer - Category 1
Respiratory Sensitizer
Target Organ (SE) - Category 3
Target Organ (RE) - Category 2
Acute Toxicity - Category 4

GHS PICTOGRAMS:



SIGNAL WORD: Danger

HAZARD STATEMENTS:

May cause damage to organs through prolonged or repeated exposure
Causes skin irritation
Causes serious eye irritation
May cause an allergic reaction
May cause allergy or asthma symptoms or breathing difficulties if inhaled
Harmful if inhaled

ADDITIONAL HAZARD IDENTIFICATION INFORMATION:

PRIMARY ROUTE OF EXPOSURE: Inhalation, Skin Contact, Eye Contact

SIGNS & SYMPTOMS OF EXPOSURE

EYES: Contact may cause eye irritation. May result in corneal opacity (clouding of the eye surface).

SKIN: Causes skin burns, irritation and possible allergic reaction. In those who have developed skin sensitization, these symptoms can develop as a result of contact with a very small amount of the liquid material.

INGESTION: Harmful if swallowed. Can burn mouth, throat and stomach. Gastrointestinal symptoms include nausea, vomiting and abdominal pain.

INHALATION: Inhalation of MDI vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function.

ACUTE HEALTH HAZARDS: See above.

CHRONIC HEALTH HAZARDS: As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Sensitization may be either temporary or permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material.

CARCINOGENICITY: None known.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% (BY WT)	OCCUPATIONAL EXPOSURE LIMITS		
			OSHA	ACGIH	OTHER
Polymeric MDI	9016-87-9	<55	NE	NE	NE
Methylene Bisphenol Isocyanate (MDI)	101-68-8	38	0.02 ppm – ceiling	0.005 ppm	0.005 ppm; 0.02 ppm – ceiling (10 min.)
MDI Mixed Isomers	26447-40-5	1 – 10	NE	NE	NE

NE = Not Established

SECTION 3: HAZARDS IDENTIFICATION

PRIMARY ROUTE OF EXPOSURE: Inhalation, Skin Contact, Eye Contact

SIGNS & SYMPTOMS OF EXPOSURE

- EYES:** Contact may cause eye irritation. May result in corneal opacity (clouding of the eye surface).
- SKIN:** Causes skin burns, irritation and possible allergic reaction. In those who have developed skin sensitization, these symptoms can develop as a result of contact with a very small amount of the liquid material.
- INGESTION:** Harmful if swallowed. Can burn mouth, throat and stomach. Gastrointestinal symptoms include nausea, vomiting and abdominal pain.
- INHALATION:** Inhalation of MDI vapors may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function.

ACUTE HEALTH HAZARDS: See above.

CHRONIC HEALTH HAZARDS: As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent.

Sensitization may be either temporary or permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material.

CARCINOGENICITY: None known.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYES: After initial flushing remove any contact lenses and continue to flush eyes with water for at least 15 minutes while holding eyelids open. Seek medical attention.

SKIN: Remove contaminated clothing and shoes. Wash affected area with large amounts of soap and water. Seek medical attention.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get immediate medical attention.

INGESTION: If the material is swallowed, give 2 glasses of water. Do not induce vomiting. Contact a physician for immediate medication attention. Never give anything by mouth to a victim who is unconscious convulsions.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: There is no antidote to counteract the effects of MDI. Care should be supportive and treatment should be based on the judgment of the physician in response to the action of the patient.

SECTION 5: FIRE FIGHTING PROCEDURES

SUITABLE EXTINGUISHING MEDIA: Water, CO2, foam or dry chemical. DO NOT use water jet.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide and carbon dioxide.

RECOMMENDED FIRE FIGHTING PROCEDURES: Firefighters should wear full protective clothing including self contained breathing apparatus.

UNUSUAL FIRE & EXPLOSION HAZARDS: This product reacts with water producing carbon dioxide gas which may create excessive pressure in containers. Reacts exothermically with polyol and alcohols. Reacts exothermically and possibly violently with acids, amines and alkaline solutions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Contain spilled material. Absorb spill with inert material. Place in a closed container, but do not seal. For larger spills, absorb with

inert material, then place in a chemical waste container. Place in a closed container, but do not seal. Neutralize spill with mixture of 90% water, 3-8% ammonia and 2-7% detergent. Add at a 10 to 1 ratio and let stand for 48 hours allowing CO₂ to escape. Do not discharge into drains, surface waters or groundwater.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE:

Recommended storage temperature is 55 – 85 °F. Shelf life is 18 months at 85 °F. Avoid temperature extremes. Keep containers closed when not in use. Store in a cool, dry, well ventilated area between. Provide appropriate ventilation. Keep containers closed to avoid contamination. All handling equipment should be electrically grounded.

OTHER PRECAUTIONS:

Avoid contact with eyes and skin. Protect from moisture. Do not reuse containers. Keep out of reach of children.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS / VENTILATION:

Use process enclosures, local exhaust ventilation or other engineering controls to control airborne levels below exposure limits.

RESPIRATORY PROTECTION:

When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

EYE PROTECTION:

Wear safety glasses or chemical goggles and add a face shield if splashing is possible.

SKIN PROTECTION:

Selection of specific items such as gloves, boots, apron or full body suit will depend on operation.

OTHER PROTECTIVE EQUIPMENT:

Facilities storing or utilizing this material should be equipped with an eye wash and safety shower.

WORK HYGIENIC PRACTICES:

Wash exposed skin prior to eating, drinking or smoking and at the end of each shift.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR:	Dark brown liquid with aromatic odor.		
FLASH POINT:	> 220 °C	LOWER EXPLOSIVE LIMIT:	No Data
METHOD USED:	TCC	UPPER EXPLOSIVE LIMIT:	No Data

EVAPORATION RATE:	No Data	BOILING POINT:	> 300 °C @ 5 mm Hg
pH (undiluted product):	No Data	MELTING POINT:	No Data
SOLUBILITY IN WATER:	Reacts with water	SPECIFIC GRAVITY:	1.22
VAPOR DENSITY:	No Data	PERCENT VOLATILE:	No Data
VAPOR PRESSURE:	No Data	MOLECULAR WEIGHT:	No Data
VOC WITH WATER (LBS/GAL):	No Data	WITHOUT WATER (LBS/GAL):	No Data

SECTION 10: STABILITY AND REACTIVITY

THERMAL STABILITY:**STABLE X****UNSTABLE** **CONDITIONS TO AVOID (STABILITY):**

Avoid moisture, acids, alcohols, amines, ammonia, bases, metal compounds, and strong oxidizers.

INCOMPATIBILITY (MATERIAL TO AVOID):

Reacts with water, with formation of carbon dioxide. Risk of bursting. Reacts with alcohols, acids, alkalines and amines. Risk of exothermic reaction. Risk of violent reaction. Contact with certain rubbers and plastics can cause brittleness of the substance with subsequent loss in strength.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

Carbon monoxide, hydrogen cyanide, nitrogen oxides, aromatic isocyanates, gases/vapors.

HAZARDOUS POLYMERIZATION:

May occur.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Dermal LD50 Rabbit: > 2,000 mg/kg

Oral LD50 Rat: > 10,000 mg/kg

Inhalation LC50 Rat: 490 mg/m³ (aerosol)

May cause allergic skin reaction. May cause allergic respiratory response. Tissue injury in the upper respiratory tract and lungs has been observed in lab animals after repeated excessive exposure to MDI/polymeric MDI aerosols.

In lab animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:	In aquatic and terrestrial environments, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.
Diphenylmethane Diisocyanate, Isomers and Homologues:	Aquatic Toxicity to Fish: LC50 >1,000 mg/l. for 96 h. (zebra fish) Aquatic Toxicity to Invertebrates: EC50 >1,000 mg/l. for 24 h. (daphnia) Aquatic Toxicity to Plants: EC50 >1,640 mg/l. for 72 h. (algae) Aquatic Toxicity to Microorganisms: EC50 >100 mg/l. for 3 h. (bacteria) Toxicity to Terrestrial Organisms: NOEC=1,000 mg/kg for 14 d. (worms) No data available for Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.
Polymeric Isocyanates:	No data available for Aquatic Toxicity to Fish, Invertebrates, Plants, or Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.
Ozone Depletion Potential:	This product neither contains nor is manufactured with any ingredients known to deplete the ozone layer.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:	Wastes must be tested using methods described in 40 CFR 261 to determine if it meets applicable definitions of hazardous wastes. Comply with state and local regulations for disposal
RCRA HAZARD CLASS:	N/A

SECTION 14: TRANSPORTATION INFORMATION**DOT**

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

SECTION 15: REGULATORY INFORMATION**U.S. FEDERAL REGULATIONS**

TSCA:	This product and its components are listed on the TSCA 8(b) inventory.
CERCLA:	CERCLA Hazardous Substances (40 CFR 302)

Reportable Quantity – Components

Methylene Bisphenol Isocyanate (MDI): 101-68-8, 5000 lbs.

SARA**311/312 HAZARD CATEGORIES:** Fire Hazard, Acute Health Hazard, Chronic Health Hazard**313 REPORTABLE INGREDIENTS:** Methylene Bisphenol Isocyanate (MDI), 101-68-8, 25 – 55%
Polymethylene Polyphenylene Isocyanate, 9016-87-9, 25 – 55%**CALIFORNIA PROPOSITION 65:** None.

Other state regulations may apply. Check individual state requirements. The following components appear on one or more of the following state hazardous substances lists:

Chemical Name	CAS #	CA	MA	MN	NJ	PA	RI
Methylene Bisphenol Isocyanate (MDI)	101-68-8	Yes	Yes	Yes	Yes	Yes	Yes
Polymethylene Polyphenylene Isocyanate	9016-87-9	Yes	Yes	Yes	Yes	Yes	Yes
MDI Mixed Isomers	26447-40-5	Yes	Yes	Yes	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION**ADDITIONAL COMMENTS:** None**DATE OF PREVIOUS SDS:** June 2015**CHANGES SINCE PREVIOUS SDS:** Name change.

This information relates to the specific material designated and may not be valid for such material used on combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee, expressed or implied, is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license of valid patents.