

nora PU MR95 Adhesive, Part B

Safety Data Sheet

acc. to OSHA 29 CFR 1910.1200

Revision date: 02/08/2022 Supersedes date: n/a

Revision number: 1.0

nora[®]
by **Interface**[®]

SECTION 1: IDENTIFICATION

Product name: nora[®] PU MR95[™]

Relevant identified uses of the substance or mixture and uses advised against:

- Recommended use: Hardener.
- Uses advised against: No information available.

Details of the supplier of the safety data sheet:

- Responsible Party:
nora systems, Inc.
9 Northeastern Blvd.
Salem, NH 03079
T: 1.800.332.NORA

Information department: see Responsible Party

Emergency telephone number:

- CHEMTREC (Transport/Environmental) 1.800.424.9300 / (Outside U.S.) 1.703.527.3887
- Rocky Mountain Poison Center: 1.866.767.5089

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture:

Acute toxicity – Inhalation (Dust/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2

Hazards not otherwise classified (HNOC):

- Not applicable.

Label Elements:

- Emergency Overview:

Danger

Hazard statements:

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

May cause respiratory irritation

May cause damage to organs through prolonged or repeated exposure



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Appearance: Paste
Physical state: Liquid
Odor: Musty

Precautional Statements:

• Prevention:

Use only outdoors or in a well-ventilated area
Wash face, hands, and any exposed skin thoroughly after handling
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing must not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/eye protection/face protection

• Response:

Get medical advice/attention if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of water and soap
Take off contaminated clothing and wash it before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor

• Storage:

Store in a well-ventilated place. Keep container tightly closed
Store locked up

• Disposal:

Dispose of contents/ container to an approved waste disposal plant

• Unknown acute toxicity:

62 % of the mixture consists of ingredient(s) of unknown toxicity

Other information:

- No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances:

- Not applicable

Mixtures:

Chemical name	CAS No	Weight-%
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	30 – 60
4,4'-Methylenediphenyl diisocyanate	101-68-8	30 – 60
Benzene, 1-isocyanato-2-[(4- isocyanatophenyl)methyl]-	5873-54-1	3 – 7
Benzene, 1,1'-methylenebis[2- isocyanato-	2536-05-2	0.1 – 1

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SECTION 4: FIRST-AID MEASURES

Description of first aid measures:

- General advice: Show this safety data sheet to the doctor in attendance.
- Inhalation: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. May cause allergic respiratory reaction. Artificial respiration and/or oxygen may be necessary. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Seek immediate medical attention/advice.
- Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
- Skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
- Ingestion: May produce an allergic reaction. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
- Self-protection of the first aider: Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid breathing vapors or mists. Avoid contact with skin, eyes, or clothing.

Most important symptoms and effects, both acute and delayed:

- Symptoms: May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/ or wheezing. May cause sensitization by skin contact. Itching. Rashes. Hives. Erythema (skin redness). May cause redness and tearing of the eyes. Burning sensation. Difficulty in breathing.

Indications of any immediate medical attention and special treatment needed:

- Note to physicians: May cause sensitization in susceptible persons. May cause sensitization by inhalation and skin contact. Effects of contact or inhalation may be delayed. Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:

- Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO₂). Foam.
- Large Fire: Water spray or fog.
- Unsuitable Extinguishing Media: Do not scatter spilled material with high pressure water streams.

Special hazards arising from the substance or mixture:

- Specific hazards arising from the chemical: Product is or contains a sensitizer. May cause sensitization by inhalation and skin contact.
- Hazardous combustion products: Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Hydrogen cyanide. Isocyanates.

Explosion data:

- Sensitivity to mechanical impact: None.
- Sensitivity to static discharge: None.

Advice for firefighters:

- Special protective equipment for fire-fighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

- Personal precautions: Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Do not touch or walk-through spilled material. Ensure adequate ventilation. Avoid breathing vapors or mists. Avoid contact with skin, eyes, or clothing. Wash thoroughly after handling.
- Other information: Refer to protective measures listed in Sections 7 and 8.

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Environmental precautions:

- Environmental precautions: Prevent further leakage or spillage if safe to do so. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up:

- Methods for containment: Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Do NOT close container (evolution of carbon dioxide - CO₂). Keep wet and put outdoors in a secured place for a few days. Then dispose to of according to local / national regulations (see Section 13).
- Methods for cleaning up: Use personal protective equipment as required. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. 2%, Liquid dishwashing soap, a mixture of 90% water and 8-10% sodium carbonate. Decontaminate floor with decontamination solution letting stand for at least 15 minutes. Clean contaminated surface thoroughly.

Reference to other sections: Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION. Section 13: DISPOSAL CONSIDERATIONS

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:

- Advice on safe handling: Use personal protective equipment as required. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink, or smoke when using this product. Avoid breathing vapors or mists. Ensure adequate ventilation. Provide extract ventilation to points where emissions occur. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes, or clothing. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse. Use according to package label instructions. Please refer also to Safety Data Sheet of Part A.

Conditions for safe storage, including any incompatibilities:

- Storage Conditions: Keep in properly labeled containers. Keep containers tightly closed in a dry, cool, and well-ventilated place. Keep away from food, drink, and animal feeding stuffs. Protect from moisture. Keep at temperatures between 10 and 30 °C.

References to other sections: Section 10: STABILITY AND REACTIVITY. Section 13: DISPOSAL CONSIDERATIONS.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

- The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
4,4'-Methylenediphenyl diisocyanate 101-68-8	TWA: 0.005 ppm	Ceiling: 0.02 ppm Ceiling: 0.2 mg/m ³	IDLH: 75 mg/m ³ Ceiling: 0.020 ppm 10 min Ceiling: 0.2 mg/m ³ 10 min TWA: 0.005 ppm TWA: 0.05 mg/m ³

Chemical name	Argentina	Brazil	Chile	Columbia
4,4'-Methylenediphenyl diisocyanate 101-68-8	TWA: 0.005 ppm	TWA: 0.005 ppm	TWA: 0.004 ppm TWA: 0.05 mg/m ³	-

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Chemical name	Costa Rica	Peru	Uruguay	Venezuela
4,4'-Methylenediphenyl diisocyanate 101-68-8	-	-	-	TWA: 0.005 ppm

Exposure controls:

- Engineering controls: Showers, Eyewash stations, Ventilation systems.

Individual protection measures, such as personal protective equipment (PPE):

- Eye/face protection: Tight sealing safety goggles. If splashes are likely to occur. Face protection shield. Avoid contact with eyes.
- Hand protection: Wear suitable gloves. Impervious gloves. The selection of suitable gloves does not only depend on the material, but also on further marks of quality and various manufacturers.
- Skin and body protection: Wear suitable protective clothing. Wear impervious protective clothing, including boots, gloves, lab coat, apron, or coveralls, as appropriate, to prevent skin contact. Long sleeved clothing.
- Respiratory protection: When workers are facing concentrations above the exposure limit, they must use appropriate certified respirators.
- General hygiene considerations: Wear suitable gloves and eye/face protection. Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink, or smoke when using this product. Avoid breathing vapors or mists. Avoid contact with skin, eyes, or clothing. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

- Physical state: Paste
- Appearance: Liquid
- Color: Brown
- Odor: Musty
- Odor threshold: No information available.

Property	Values	Remarks / Method
pH	No data available.	None known.
Melting point / freezing point	No data available.	None known.
Boiling point and boiling range	208 °C / 406.4 °F	
Flash point	198 °C / 388.4 °F	
Evaporation rate	No data available.	None known.
Flammability (solid, gas)	Not applicable for liquids.	
Flammability Limit in Air		None known.
Upper flammability or explosive limits	No data available.	
Lower flammability of explosive limits	No data available.	
Vapor pressure	< 0.0001	mmHg @ 25 °C
Vapor density	No data available.	None known.
Relative density	No data available.	None known.
Water solubility	Insoluble	None known.
Solubility(ies)	No data available.	None known.
Partition coefficient	No data available.	None known.

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Autoignition temperature	No data available.	None known.
Decomposition temperature	No data available.	None known.
Kinematic viscosity	No data available.	None known.
Dynamic viscosity	150 - 250 mPa.s	@ 25 °C

Other information:

- Explosive properties: No information available.
- Oxidizing properties: No information available.
- Solvent content (%): No information available.
- Solid content (%): No information available.
- Softening point: No information available.
- Molecular weight: No information available.
- VOC content (%): No information available.
- Density: 1.234 g/cm³
- Bulk density: No information available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: No information available.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Exothermic reaction with. Amines. Contact with water (moisture) liberates carbon dioxide, which causes pressure increase in closed containers. Alcohols.

Hazardous polymerization: Hazardous polymerization may take place during a fire due to heat. Closed containers could violently rupture.

Conditions to avoid: Excessive heat. Protect from moisture.

Incompatible materials: Water. Amines. Strong acids. Strong bases. Strong oxidizing agents. Alcohols. Copper.

Hazardous decomposition products: Carbon oxides Nitrogen oxides (NOx) Isocyanates.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Product Information:

- Inhalation: Harmful by inhalation. May cause sensitization in susceptible persons. May cause irritation of respiratory tract.
- Eye contact: Causes serious eye irritation. May cause redness, itching, and pain.
- Skin contact: Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May cause sensitization by skin contact. Causes skin irritation.
- Ingestion: May cause additional affects as listed under "Inhalation". Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical, and toxicological characteristics:

- Symptoms: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Asthma-like and/ or skin allergy-like symptoms. Coughing and/ or wheezing. Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.

Acute toxicity:

Numerical measures of toxicity.

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (inhalation-dust/mist) 1.50 mg/l

Unknown acute toxicity.

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Component Information:

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	LD50 > 10000 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus)	=1.5 mg/L (Rattus) 4 h
4,4'-Methylenediphenyl diisocyanate 101-68-8	=31600 mg/kg (Rattus) = 9200 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus) OECD 402	=1.5 mg/L (Rattus) 4 h
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl) methyl]- 5873-54-1	LD50 >2000 mg/Kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus) OECD 402	=1.5 mg/L (4h) Rat
Benzene, 1,1'-methylenebis[2-socyanato- 2536-05-2	LD50 > 2000 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus) OECD 402	=1.5 mg/L (4h) Rat

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

- Skin corrosion/irritation: Classification based on data available for ingredients. Irritating to skin.

Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)

Method	Species	Exposure Route	Effective Dose	Exposure Time	Results
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit				Mild skin irritant

- Serious eye damage/eye irritation: Classification based on data available for ingredients. Causes serious eye irritation.

4,4'-Methylenediphenyl diisocyanate (101-68-8)

Method	Species	Exposure Route	Effective Dose	Exposure Time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	Eye	0.1 mL	24 hours	Non-irritant

- Respiratory or skin sensitization: May cause sensitization by inhalation. May cause sensitization by skin contact.

Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)

Method	Species	Exposure Route	Results
OECD Test No. 406: Skin Sensitization	Guinea pig		No sensitization responses were observed
OECD Test No. 429: Skin Sensitization: Local Lymph Node Assay	Mouse		Sensitizing

4,4'-Methylenediphenyl diisocyanate (101-68-8)

Method	Species	Exposure Route	Results
OECD GD 39	Rat	Inhalation	Sensitizing

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- Germ cell mutagenicity: Based on available data, the classification criteria are not met.
- Carcinogenicity: Based on available data, the classification criteria are not met

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	-	Group 3	-	-
4,4'-Methylenediphenyl diisocyanate 101-68-8	-	Group 3	-	-

Legend:

Isocyanic acid, polymethylenepolyphenylene ester (9016-87-9)

Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Carcinogenic

4,4'-Methylenediphenyl diisocyanate (101-68-8)

Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Limited evidence of a carcinogenic effect

- Reproductive toxicity: Based on available data, the classification criteria are not met.
- STOT – single exposure: May cause respiratory irritation.
- STOT – repeated exposure: May cause damage to organs through prolonged or repeated exposure.
Target organ effects: Eyes, Skin, Lungs, Respiratory system.
- Aspiration hazard: Based on available data, the classification criteria are not met.
- Other adverse effects: No information available.
- Interactive effects: No information available.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	ErC50 (72h) >1640 mg/L Algae (scenedesmus subspicatus) (OECD 201)	CL50 (96h) >1000 mg/L (Danio rerio)	-	EC50 (24H) >1000 mg/L Daphnia magna
4,4'-Methylenediphenyl diisocyanate 101-68-8	ErC50 (72h) >1640 mg/L Algae (scenedesmus subspicatus) (OECD 201)	>1000 mg/l (Danio rerio)	-	EC50 (24H) >1000 mg/L Daphnia magna
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	ErC50 (72h) >1640 mg/L Algae (scenedesmus)	LC50 (96 h) > 1000 mg/l (Danio rerio)	-	EC50 (24H) >1000 mg/L Daphnia magna

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5873-54-1	subspicatus) (OECD 201)	OECD 203		
Benzene, 1,1'-methylenebis[2-isocyanato-2536-05-2	-	LC50 (96 h) > 1000 mg/l (Danio rerio) OECD 203	-	-

Persistence and degradability: No information available.

Bioaccumulative potential: There is no data for this product.

Component Information

Chemical name	Partition coefficient
4,4'-Methylenediphenyl diisocyanate 101-68-8	4.51

Mobility in soil: No information available.

Other adverse effects: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods:

- Disposal of Wastes: It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
- Contaminated packaging: Dispose of in accordance with federal, state, and local regulations. Handle contaminated packages in the same way as the product itself. Do not reuse empty containers.

SECTION 14: TRANSPORT INFORMATION

DOT: Not regulated.

IATA: Not regulated.

IMDG: Not regulated.

SECTION 15: REGULATORY INFORMATION

Global Inventories:

TSCA	Listed
DSL	Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL - Canadian Domestic Substances List

Listed - The components of this product are either listed or exempt from listing on inventory.

Not Listed - One or more components of this product are not listed on inventory.

US Federal Regulations:

SARA 313:

- Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal regulations, Part 372.

Chemical name	CAS No.	SARA 313 – Threshold Values %
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	1.0

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4,4'-Methylenediphenyl diisocyanate	101-68-8	1.0
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	1.0
Benzene, 1,1'-methylenebis[2-isocyanato-	2536-05-2	1.0

SARA 311/312 Hazard Categories:

- Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

Europe:

- Restrictions of Use of Hazardous Substances (RoHS) Directive 2011/65/EU: This product does not contain Lead (7439-92-1), Cadmium (7440-43-9), Mercury (7439-97-6), Hexavalent chromium (7440-47-3), Polybrominated biphenyls (PBB), and Polybrominated diphenyl ethers (PBDE) above the regulated limit mentioned in this regulation.

SVHC:

- Substances of Very High Concern for Authorization: This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59).

SECTION 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Contact: see Responsible Party

Revision date: 02/08/2022

Revision note: Not applicable.

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet