

RUBBERBIND NUV

MATERIAL SAFETY DATA SHEET

1: PRODUCT AND COMPANY IDENTIFICATION

Trade / Commercial Name	RUBBERBIND NUV
Chemical Name	Isocyanate prepolymer
Formula	N/A
Chemical Family	Isocyanate prepolymer
Synonyms	Rubberbind NUV, polyurethane moisture cured
Un No	Hazchem Code
ERG No	0 EAC 0

2. HAZARDS IDENTIFICATION

- Contains diphenylmethane-4,4-diisocyanate $\geq 5\% < 25\%$
- Contains Halogenated Hydrocarbons.
- Harmful Xn.
- **Harmful:** Possible risk of irreversible effects by inhalation and if swallowed
- Irritating to eyes, respiratory system and skin.
- May cause sensitization by inhalation and skin contact.
- Persons who suffer from hypersensitivity of the respiratory tract (e.g. asthmatics and chronic bronchitis sufferers) should avoid handling this product.
- Symptoms affecting the respiratory tract can also occur several hours after overexposure.
- Vapours and aerosols are the primary risk to the respiratory tract.
- Product will react with water and produce carbon dioxide which can lead to dangerous build-up of pressure in sealed containers.
- Ingestion of large amounts may cause intestinal obstruction.
- Repeated exposure to high levels may result in liver or kidney damage.

3. COMPOSITION

Hazardous Components	Diphenylmethane-4,4-diisocyanate $\geq 5\% < 25\%$ Halogenated Hydrocarbons
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4. FIRST AID MEASURES

Skin	Wash affected area with plenty of warm water and soap, but preferably with a cleanser based on polyethylene glycol. Consult a doctor in the event of a skin reaction. Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of.
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Eyes	Flush eyes with lukewarm water for a sufficient length of time (approximately 10 minutes). Hold eyelids open while washing. Consult a doctor.
Ingested	Do not induce vomiting. Consult a doctor.
Inhalation	If vapour is inhaled in high concentrations, expose the person to fresh air, promote rest and keep the person warm. If there is difficulty in breathing, consult a doctor. Information for the physician: The product is an irritant and may trigger sensitisation of the skin and respiratory tract. Treatment of acute irritation and bronchial constriction is primarily symptomatic. Extended medical care may be necessary, depending on the extent of the exposure and the symptoms.

5. FIRE FIGHTING MEASURES

Extinguishing media:

- CO₂, Foam, Dry Chemical; in cases of large fires, water spray should be used.
- Formation of carbon monoxide, nitrogen oxide, isocyanate vapour and traces of hydrogen cyanide are possible in a fire.
- Self-contained breathing apparatus for firemen.
- Evacuate personnel located downwind. Do not allow contaminated extinguishing water into the soil, groundwater or surface waters.

6. ACCIDENTAL RELEASE MEASURES

Small spills:

- Put on protective equipment (see section 8).
- Evacuate all persons from the area. Avoid breathing of the fumes.
- Contain (avoid spillage from entering drains or water courses) and decontaminate.
- Product will react with water and produce a solid polymer and carbon dioxide, the solid polymer is an insoluble product (polyurea).
- Cover with damp, fluid-binding material (sand, sawdust or chemical binder based on calcium silicate hydrate)
- Transfer to waste container after approx. 1 hour (CO₂ formation). Keep damp and in the open air in a safe place for 7 to 14 days.
- Restrict access to area.
- Waste should be disposed of as described in Chapter 13, "Advise on disposal".

Large spills:

- Evacuate all personnel not properly equipped with protective equipment and appropriate breathing apparatus.
- Only experienced and properly trained personnel should be authorised to attempt to isolate and contain the spill.
- Spilled material should not be washed down a drain, into a river or any surface water.
- A 3 % protein based foam can be sprayed over the material to reduce vapours until an effective decontamination material can be obtained.

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- Use a solution of 8 - 10 % sodium carbonate and 2 % liquid soap in water to decontaminate and to convert the residue into harmless polyurea polymer and carbon dioxide.

7. HANDLING AND STORAGE

Handling:

- Observe the usual precautionary measures for chemicals.
- Avoid contact with skin.
- In all areas where isocyanate aerosol and/or vapour concentrations are produced, exhaust ventilation must be provided in such a way that the OEL is not exceeded.
- The air should be drawn away from personnel handling the product and the efficiency of the exhaust equipment should be periodically checked.

Storage:

- Keep containers tightly closed and dry.
- Keep separated from foodstuffs.
- Prevent cooling below 20°C and heating above 40°C.
- Protection against fire and explosion: Explosion protection not required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Values for isocyanates, all (as -NCO):
TWA OEL-RL 0,02 mg/m³
Short term OEL-RL: 0,07 mg/m³
SENSITISER

Controls

- The control measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure.
- The best protection is to enclose operations and/or provide local exhaust ventilation at the site of substance release.
- Use a non-sparking, grounded ventilation system separate from other exhaust ventilation systems. Exhaust directly to the outside.
- Supply sufficient replacement air to make up for air removed.
- Spraying of the product and using the material at higher temperatures will increase the risk.
- Have a safety shower/eye wash fountain readily available in the immediate work area.

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Personal Protection

- If engineering controls and work practices are not effective in controlling this material, then wear suitable personal protection equipment.

Respiratory protection:

- Required at inadequately ventilated workplaces. If product is sprayed, wear air-fed mask or (for short periods only) a combination of charcoal filter and particulate filter mask (German type A2-P2).

Eye protection:

- Safety Goggles/face protection.
- Suitable material for protective gloves:
 - Polychloroprene - CR ($\geq 0,5$ mm)
 - Nitrile rubber - NBR ($\geq 0,35$ mm)
 - Butyl rubber - IIR ($\geq 0,5$ mm)
 - Fluorinated rubber - FKM ($\geq 0,4$ mm)
 - Polyvinylchloride - PVC ($\geq 0,5$ mm)
- Store working clothes separately. Wash hands before breaks and at end of work. Decontaminate, destroy and dispose of soiled protective clothing (see section13)
- Safety precautions for handling freshly moulded polyurethane parts:
 - Depending on the production parameters, any uncovered surfaces of polyurethane mouldings produced using this raw material may contain traces of substances (e.g. starting and reaction products, catalysts, release agents) with hazardous characteristics (e.g. harmful, irritating, corrosive, sensitising).
 - In order to prevent skin contact with the traces of these substances, fully buttoned work clothing and protective gloves whose palm and finger areas at least are coated on the outside with nitrile rubber, PVC or polyurethane should be worn when demoulding or handling the freshly moulded polyurethane parts.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	Clear, brown liquid, low odour	Flammable Limits	Not determined
Boiling Point	$> 300^{\circ}\text{C}$	Soluble	Not soluble in water.
Freezing Point	$- 18^{\circ}\text{C}$	Viscosity	6 5000 - 10 000 cps @ 25°C
Relative Density	$1,12 \pm 0,02$ @ 25°C	pH	Not applicable
Vapour Pressure	7 hPa at 20°C 25 hPa at 50°C	Ignition temperature	$> 500^{\circ}\text{C}$
Flash Point	137°C		

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10. STABILITY AND REACTIVITY

- | | |
|-------------------------------|--|
| Conditions to Avoid | <ul style="list-style-type: none">• Stable at ambient temperatures.• Thermal decomposition: Polymerises at about 200°C with evolution of CO₂. |
| Incompatible Materials | <ul style="list-style-type: none">• Reacts with water forming CO₂, in closed containers risk of bursting due to increase of pressure.• Exotherm reaction with alcohols and amines. |
| Other | <ul style="list-style-type: none">• In fire situations, carbon monoxide, nitrous oxides, hydrogen chloride, isocyanate vapours and a small amount of hydrogen cyanide can be produced. |

11. TOXICOLOGICAL INFORMATION

- Analogous to diphenylmethane-diisocyanate:
- LD50 Oral, rat: > 5 000 mg/kg
- LC50 inhalation, rat: 370 mg/m³ as aerosol, 4 h exposure
- Concentration of the saturated vapour of MDI at 25°C: 0,09 mg/m³
- **Skin contact:**
dermal LD50 (rabbit) > 9 000 mg/kg
- **Effects on humans by exposure to the product on the:**
Eyes:
Causes slight temporary reddening and swelling of the conjunctiva and slight reversible clouding of the cornea. In high concentrations vapour product has irritating effect on eyes and mucous membranes
Skin:
Irritant. In case of longer contact with skin, tanning and irritating effects are possible.
Respiratory tract:
In high concentrations vapour of product has irritating effects on eyes and mucous membranes.
- **Special effects/properties:**
Experience on humans:
Irritation of the mucous membranes in the nose, throat and lungs, dryness of the throat, pressure on the chest, sometimes accompanied by breathing difficulties and headaches. Delayed appearance of the symptoms and allergic reaction in susceptible persons possible.

Effects of chronic exposure

- No evidence that this product is a mutagen, carcinogen or teratogen.
- May cause sensitisation by inhalation or skin contact.

12. ECOLOGICAL INFORMATION

- Immiscible with water. Reacts with water producing CO₂ and forming a solid and insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by water soluble solvents. Previous experience shows that polyurea is non-degradable.

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- Can be slightly hazardous to water.
- **Biodegradability:**
0 % after 28 days (respirometer test)
- **Acute fish toxicity:**
LC50 = >1 000 mg/l (Brachydanio rerio 96 h)
- **Daphnia:**
EC50 = > 1000 mg/l (24 h)
- **Acute bacteria toxicity:**
EC50 =>100 mg/l (Tested on activated sludge microorganism 3h)

13. DISPOSAL CONSIDERATIONS

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|----------------------------------|--|
| Disposal Method Product | <ul style="list-style-type: none"> • Product waste: May be transported to a controlled incinerator if local regulations are observed. • Decontaminated waste (solid) can be disposed of in a landfill. Check with local authority. |
| Disposal Method Packaging | <ul style="list-style-type: none"> • Disposal in accordance with local legal provisions. • After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), any product residue adhering to their walls has been rendered harmless, and the product and hazard labelling has been invalidated, they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. • Containers must be turned into scrap or recycled in compliance with national legislation and environmental regulations. |

14. TRANSPORT INFORMATION

ERG No	0	EAC	0
IMDG-Shipping Name	NOT CONTROLLED SUBSTANCE		
IMDG Code	N/A	IMDG-Packaging Group	N/A
Marine Pollutant	No		
Class	Non-hazardous		
Subsidiary Risks	None		

15. REGULATORY INFORMATION

EEC Hazard Classification

- | | |
|--------------------|--|
| Risk Phases | <ul style="list-style-type: none"> • Harmful: Possible risks of irreversible effects through inhalation and if swallowed • Irritating to eyes, respiratory tract and skin • May cause sensitisation by inhalation and skin contact |
|--------------------|--|

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Safety Phases

- Do not breathe vapour/spray
- Avoid contact with skin and eyes
- Wear suitable protective clothing, gloves and eye/face protection
- In case of accident or if you feel unwell, seek medical advice immediately and show the label where possible
- Use only in well-ventilated areas

National Legislation

- National Road Traffic Act 1996 (Act 93 of 1996)
- Occupational Health and Safety Act 1993 (Act 85 of 1993)
- Hazardous Substances Act 1973 (Act 15 of 1973)

16. OTHER INFORMATION

- **Reason for Alteration:** General update.
- The information contained herein is based on the present state of our knowledge.
- It characterizes the product with regard to the appropriate safety precautions.
- It does not represent a guarantee of the properness of the product.
- Date issued: 01/06/2020

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