



Safety Data Sheet

CAS No
Date Issued: 12-08-2021
Bakkie Bond (Ultrathane 520-003)

Company Details

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1. Product and Company Identification

<u>Trade / Commercial Name</u>	Bakkie Bond (Ultrathane 520-003)		
<u>Chemical Name</u>	Flammable liquid, N.O.S.		
<u>Formula</u>			
<u>Chemical Family</u>	MDI based prepolymer solution		
<u>Synonyms</u>			
<u>Un No</u>	1993	<u>Hazchem Code</u>	1[Z]
<u>ERG No</u>	128	<u>EAC</u>	

2. Hazards Identification

Contains Diphenylmethane-4,4-diisocyanate $\geq 5\% < 25\%$
Harmful Xn
Flammable F
Highly flammable
Irritating to eyes, respiratory system and skin.
May cause sensitization by inhalation and skin contact.
Repeated exposure may cause skin dryness and cracking
Vapours may cause drowsiness and dizziness
For their own protection, 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.
The vapour is heavier than air and may travel along the ground; distant ignition is possible

3. Composition

<u>Hazardous Components</u>	Diphenylmethane-4,4-diisocyanate $\geq 5\% < 25\%$
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4. First Aid Measures

<u>First Aid Skin</u>	Wash 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. Seek medical advice.
<u>First Aid Eyes</u>	Flush eyes with lukewarm water for a sufficiently long period of time (10 minutes). Hold eyelids open while washing. Consult a doctor.

First Aid Ingested

Do not induce vomiting. Rinse mouth. Consult a doctor.

First Aid Inhalation

If aerosol or vapour is inhaled in high concentrations:

Remove person to fresh air and keep him warm, let him rest. If there is difficulty in breathing, consult a doctor.

Information for the physician: The product irritates the respiratory tract 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.

Vapour/air mixtures are explosive.

Self contained breathing apparatus for firemen.

Remove all sources of ignition.

Evacuate personnel located downwind.

Keep drums cool by spraying with water.

Do not allow contaminated extinguishing water into the soil, groundwater or surface waters.

6. Accidental Release Measures

Small spills: Put on protective equipment (see paragraph 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, "Advice 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.

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.

Remove all sources of ignition. Do not eat, drink or smoke during work.

Take precautionary measures against static discharges.

Prevent generation of mists.

Vapour/air mixtures are explosive.

In all areas where 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.

Store in a cool, well ventilated area, away from heat and sources of ignition.

Keep separated from foodstuffs.

Prevent cooling below 20°C and heating above 40°C.

Protection against fire and explosion.

Store away from strong oxidants, strong bases, inorganic acids.

Attacks some plastics, rubber and coatings.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits Values for diphenylmethane-4,4-diisocyanate:

TWA 0,005 ppm; 0,05 mg/m³

Short term OEL-RL; 0,02 ppm; 0,05 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.

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)

Do not eat, drink or smoke during work.

Wash hands before breaks and after work.

9. Physical & Chemical Properties

White to slightly yellow, low viscosity liquid, characteristic odour

Boiling Point: $\pm 66^{\circ}\text{C}$ (Not tested - value for solvents)

Freezing Point: Not available

Relative Density : $1,01 \pm 0,02$ @ 25°C

Vapour Pressure : Not tested

Value for MDI: $< 0,00001$ mbar @ 20°C

Flash Point: $- 9^{\circ}\text{C}$ (Not tested - value for solvents)

Flammable Limits: Not determined
Not soluble in water; reacts with water
Viscosity: < 500 cps @ 25°C
pH: Not applicable

10. Stability And Reactivity

<u>Conditions to Avoid</u>	Stable at ambient temperatures. Remove sources of heat and ignition.
<u>Incompatible Materials</u>	Reacts with water forming CO ₂ , in closed containers risk of bursting due to increase of pressure. Exotherm reaction with alcohols and amines. Violent reaction with strong oxidants, strong bases, inorganic acids. Attacks some plastics, rubber and coatings.
<u>Other</u>	In fire situations, carbon monoxide, nitrous oxides, isocyanate vapours and a small amount of hydrogen cyanide can be produced.

11. Toxicological Information

Analogous to diphenylmethane-diisocyanate, isomers and homologues:

LD₅₀ Oral, rat (female): >15 000 mg/kg

LC₅₀ inhalation, rat: 490 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

A harmful contamination of the air can be reached rather quickly on evaporation of the solvents at 20°C.

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. The solvents may cause effects on the central nervous system, resulting in narcosis.

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.

No detrimental effects to health are known where the product is handled properly and industrial hygiene precautions are observed.

EFFECTS OF CHRONIC EXPOSURE:

May cause sensitisation by inhalation or skin contact.

Repeated or prolonged contact with skin may cause dermatitis or defat the skin.

Animal tests show that the solvent possibly causes toxic effects upon human reproduction.

12. Ecological Information

No ecological problems are expected when the product is handled and used with due care.

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.

Can be slightly hazardous to water.

Biodegradability: 0 % after 28 days (respirometer test)

Acute fish toxicity: LC₅₀ = >1 000 mg/l (Brachydanio rerio 96h)

Daphnia: EC₅₀ = > 1 000 mg/l (24h)

Acute bacteria toxicity: EC₅₀=>100 mg/l (Tested on activated sludge microorganism 3h)

13. Disposal Considerations

<u>Disposal Method Product</u>	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.
<u>Disposal Method Packaging</u>	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

<u>UN No</u>	1993	<u>Hazchem Code</u>	1[Z]
<u>ERG No</u>	128	<u>EAC</u>	
<u>IMDG-Shipping Name</u>	FLAMMABLE LIQUID, N.O.S.		
		<u>IMDG-Packaging Group</u>	II
<u>Marine Pollutant</u>	No		
<u>Class</u>	Class: 3 Flammable Liquid Group: II		
<u>Subsidiary Risks</u>	None		

15. Regulatory Information

<u>EEC Hazard Classification</u>	3
<u>Risk Phases</u>	Harmful Xn Flammable F Highly flammable Irritating to eyes, respiratory tract and skin May cause sensitisation by inhalation and skin contact Repeated exposure may cause skin dryness and cracking Vapours may cause drowsiness and dizziness
<u>Safety Phases</u>	Keep locked up and out of reach of children Keep container in a well-ventilated place Keep away from sources of ignition Do not breathe vapour/spray Do not empty into drains Take precautionary measures against static discharges Wear suitable protective clothing and gloves In case of accident or if you feel unwell, seek medical advice immediately and show the label where possible
<u>National Legislation</u>	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.

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