Company Details

Name National Urethane Industries
Address 18 Skietlood Street
Isando
Kempton Park
South Africa

Emergency Phone Number +27800172743
Tel 011 974 9300
Fax (011) 392-5560

1.Product and Company Identification:

Trade / Commercial Name	**Ultrathane 500-208 F**
Chemical Name	Diphenylmethane-4,4-diisocyanate
Formula	
Chemical Family	Aromatic di-isocyanate
Synonyms	Ultrathane, isocyanate component
Un No	
ERG No.	0
Hazchem Code	
EAC	

2.Hazards Identification:

Contains Diphenylmethane-4,4-diisocyanate >= 25 %
Harmful Xn
Harmful by inhalation
Irritating to eyes, respiratory system and skin.
May cause sensitization by inhalation and skin contact.
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.

3.Composition:

Hazardous Components Diphenylmethane-4,4-diisocyanate >= 25 %

4.First Aid Measures

First Aid Skin	Wash with plenty of water and soap. Consult a doctor in the event of a skin reaction. Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of.
First Aid Eyes	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, 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.
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 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 (CO_2 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.
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 handling chemicals. Avoid contact with skin.
Ensure effective ventilation if product is heated.
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 0°C and heating above 50°C.
Protection against fire and explosion: Explosion protection not required.

8.Exposure Controls/Personal Protection

Occupational Exposure Limits

Values for MDI:
TWA OEL-CL 0,005 mg/m³
Short term OEL-CL: 0,02 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 particlate filter mask (German type A2-P2).
EYE PROTECTION : Safety Goggles/face protection.
Suitable material for protective gloves: PVC
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

Brown liquid, low odour
Boiling Point: > 300°C at 1.013 hPa
Setting Point: - 42°C
Relative Density: 1,20 - 1,24 @ 25°C
Vapour Pressure: 19 hPa @ 20 °C
48 hPa @ 50°C
56 hPa @ 55°C
Flash Point: 220°C at 1.013 hPa
Not soluble in water, reacts with water.
Viscosity: 150 - 250 cPs @ 25°C
pH: Not applicable

10.Stability And Reactivity

Conditions to Avoid	Stable at ambient temperatures. No hazardous decomposition products when stored and handled correctly. Thermal decomposition: Polymerises at about 200°C with evolution of C02.
Incompatible Materials	Reacts with water forming CO2, in closed containers risk of bursting due to increase of pressure. Exotherm reaction with alcohols and amines.
Other	In fire situations, carbon monoxide, nitrous oxides, isocyanate vapours and a small amount of hydrogen cyanide can be produced.

11.Toxicological Information

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
In a long-term inhalation study, rats were exposed over a period of 2 years to mechanically generated respirable aerosols (aerodynamic diameter 95 % less than 5 micron) of polymeric MDI (PMDI) in concentrations of 0,2, 1,0 and 6,0 mg PMDI/m³. The group of animals exposed to the highest concentration suffered an increased incidence of lung tumours, persistent inflammatory changes to the nose, respiratory tract and lungs, and yellowish deposits in the respiratory tract and lungs. The animals in the 1,0 mg/m³ group exhibited slight irritation and inflammatory changes to the nose, respiratory tract and lungs, but did not develop lung tumours and/or deposits. Animals in the 0,2 mg/m³ group suffered no irritation; this concentration was therefore deemed to constitute the "no-effect level".
Effects on humans by exposure to the product on the:
Eyes: Causes slight temporary reddening and swelling of the conjunctiva and slight reversable clouding of the cornea.
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 accompagnied 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.
May cause sensitisation by inhalation or skin contact.

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 96 h)
Daphnia: EC50 = > 1 000 mg/l (24 h)
Acute bacteria toxicity: EC50 =>100 mg/l (Tested on activated sludge microorganism 3 h)

13.Disposal Considerations

Disposal Method Product	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	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.

14.Transport Information

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

15.Regulatory Information

EEC Hazard Classification	
Risk Phrases	Harmful by inhalation Irritating to eyes, respiratory tract and skin May cause sensitisation by inhalation and skin contact
Safety Phrases	Keep locked up and out of reach of children Do not breathe vapour/spray Wear suitable protective clothing and gloves In case of accident or if you feel unwell, seek medical advice immediately(show the label where possible)
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: 30/07/2010
Revision date: 22/02/2019
Revision No.: 1

LAST PAGE

TRANSPORT EMERGENCY CARD - Road transport

In accordance with SANS 10232-4

UN No.	
Class	
Subsidiary risk	
Packing group	N/A
ERG No.	0

PROPER SHIPPING NAME
NOT CONTROLLED SUBSTANCE

APPEARANCE
Brown liquid, low odour

POTENTIAL HAZARD (DANGER)
Low Hazard
Not controlled
Contact could irritate eyes
Fire could produce irritating gases

PERSONAL PROTECTIVE EQUIPMENT
Protective gloves
Protective shoes
Eyewash bottle with clean water

EMERGENCY RESPONSE EQUIPMENT
Broom
Use extinguishing agent suitable for surrounding fire

DRIVER FIRST ACTIONS - Only if it can be carried out without personal risk
Contact the emergency services
Keep upwind
No smoking allowed
Prevent exposure of cargo to open flames
Stop the engine
Warn road users and passers by to keep away from danger area
Contact operator

DRIVER SPECIAL/ADDITIONAL ACTIONS - Only if it can be carried out without personal risk
Stop leaks if it can be done without personal risk

DRIVER ACTIONS IN CASE OF FIRE - Only if it can be carried out without personal risk
Do not attempt to deal with any major fire that involves the load
Use fire extinguisher on small fire only if it can be done without personal risk
Administer oxygen if breathing is difficult

FIRST AID
None likely to be required
In case of contact with substance, flush skin or eyes (or both) with running water
In case of fumes produced during burning, remove person to fresh air

---

SPECIAL INFORMATION FOR EMERGENCY SERVICES
Substance not classified as dangerous and is not controlled.
Remove absorbed substance to safe place for disposal.
Keep containers cool by spraying with water if exposed to fire.
Use extinguishing media appropriate for surrounding fire.

ADDITIONAL INFORMATION
Supplier: National Urethane Industries
Trade Name: Ultrathane 500-208 F
EMERGENCY TELEPHONE NUMBERS 1011
PREPARED BY vls **from the best knowledge currently available; no guarantee is provided that the information is sufficient or correct under all circumstances.**

Preparation date: 05/07/2021 **Expiry date:** 12 months from Preparation date **Reference:** 0