

MATERIAL SAFETY DATA SHEET : PROTECTAKOTE

[Prepared in accordance with European Regulation 1907/2006/EC, Article 31, Addendum II]

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name: PROTECTAKOTE

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

Application of the substance: Moisture-cured polyurethane coating

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Zest Polyurethanes

Alternator Avenue, Montague Gardens, Cape Town, South Africa, 7441, Tel: +27 (021) 555-3090

Further information obtainable from: The Technical Manager, Zest Polyurethanes

1.4 Emergency telephone number: The Technical Manager, Zest Polyurethanes, Tel: +27 (021) 555-3090

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Directive 67/548/EEC and Directive 2001/59/EC: R10, R20, R36/37/38, R42.

Classification according to Directive 67/548/EEC and Directive 2006/102/EC: S24, S25, S42, S43, S62.

Information concerning particular hazards for human and environment: Flammable, irritant, may cause sensitisation by inhalation.

Classification system: The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

2.2 Label elements

Labelling according to EU guidelines:

The product has been marked in accordance with EU Directives / respective national laws.

The product has been classified and marked in accordance with EU Directive / Ordinance on Hazardous Materials.

The R and S phrases may be omitted if packaging contains no more than 0.125 litre.

Risk phrases:

R10 Flammable
R20 Harmful by inhalation
R36/37/38 Irritating to eyes, respiratory system and skin
R42 May cause sensitisation by inhalation

Safety phrases:

S24 Avoid contact with skin
S25 Avoid contact with eyes
S42 During spraying wear a cartridge-type respirator with cartridge for organic fumes
S43 In case of fire, use foam/carbon dioxide/dry powder. Use water fog to cool. Do NOT use water jets!
S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label where possible

2.3 Other hazards




Harmful. Contains isocyanate. Temporary or minor injury possible even if treatment is given. Limited evidence exists that MDI may have a carcinogenic effect (see item 3.2). May have short-term environmental effects.

Results of PBT and vPvB assessment: Not applicable.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with non-hazardous additions.

Dangerous components:			
CAS: 1330-20-7 EINECS: 215-535-7	XYLENE (XYLOL): xylene (mixed isomers)	  F, Xn R10, R20/21, R38 S2, S25	20 – 30% by mass
CAS: 101-68-8 EINECS: 202-966-0	ISOCYANATE: 4,4' – methylene diisocyanate (MDI)	 Xn, Xi R20, R36/37/38, R40, R42, R43, R48/20 S23, S36/37, S45	0.1 – 1.0% by mass

Refer to Section 16 for hazard symbol codes and statements of R and S phrases listed in this table.

MATERIAL SAFETY DATA SHEET : PROTECTAKOTE

[Prepared in accordance with European Regulation 1907/2006/EC, Article 31, Addendum II]

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

After skin contact: Use hand cleaner/soap and water. Remove contaminated clothing. If skin irritation continues, consult a doctor.

After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After inhalation: Move to fresh air. In case of any discomfort, seek medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation sensitiser with accumulative effects. Risk of dermatitis. May cause lung damage if swallowed.

4.3 Indication of any immediate medical attention and special treatment needed

If ingested, do not induce vomiting. Seek immediate medical attention.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents: Foam. Carbon dioxide. Dry powder. Fog to cool and control.

Unsuitable extinguishing agents, for safety reasons: Do NOT use water jets. Containers can become pressurised if contents are contaminated with water.

5.2 Special hazards arising from the substance or mixture

Flammable with toxic fumes.

5.3 Advice for firefighters

Wear protective equipment and respirators. Blown or distorted containers should be handled with extreme caution.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions

Do not allow to enter drains or sewers / surface or ground water.

6.3 Methods and material for containment and cleaning up

Ensure adequate ventilation. Hazardous in liquid state. Solidify by reaction with water before disposal.

6.4 Reference to other sections

See section 7 for information on safe handling.

See section 8 for information on personal protection equipment.

See section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Information about protection against fire and explosion: Flammable. No open flames. No smoking.

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: Store separately from any reactive substances, especially oxidisers.

Information about storage in one common facility: As above.

Further information about storage conditions: Keep containers tightly sealed.

7.3 Specific end use(s)

Open with care. Cover lid / bung with a cloth while releasing pressure.

Generates carbon dioxide gas from reaction with water. Do not seal if contaminated with water due to danger of bursting.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical facilities: Adequate ventilation. See items 7.1 and 7.2.

8.1 Control parameters

Ingredients with limit values that require monitoring in the workplace: Monitoring is not required. The product has no quantities of materials with critical values.

Additional information:

Component:	IOELV TWA (8 hours):		IOELV STEL (15 minutes):		Notes:
xylene (1330-20-7)	50 ppm	221 mg/m ³	100 ppm	442 mg/m ³	Skin
MDI (101-68-8)	0.005 ppm	0.02 mg/m ³	0.01 ppm	0.07 mg/m ³	Sensitiser

MATERIAL SAFETY DATA SHEET : PROTECTAKOTE

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8.2 Exposure controls

General protective and hygiene measures: Wash hands before breaks and at the end of work. Do not inhale gases/fumes.

Personal protective equipment:



Respiratory protection:

A cartridge-type respirator with cartridge for organic fumes is essential for spraying operations.



Eye protection:

Wear tightly sealed goggles or face shield.



Hand protection:

Wear nitrile rubber gloves.

Material of gloves: The selection of suitable gloves also depends on marks of quality, which vary from manufacturer to manufacturer. The resistance of the glove material cannot be calculated in advance and therefore has to be checked prior to the time of application.

Penetration of glove material: Observe the exact breakthrough time supplied by the manufacturer.

Skin protection: Wear overalls and safety boots.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

General information:

Appearance:

Physical state:

Liquid

Colour:

Various

Odour:

Sweetish

Odour threshold:

Not determined

pH value:

8.0

Change in condition:

Melting point/Melting range:

< -46 °C

Boiling point/Boiling range:

140 °C

Flash point

27 °C (ASTM D56)

Flammability (solid, gaseous)

Flammable

Ignition temperature:

> 200 °C

Decomposition temperature:

200 °C

Self-igniting:

Product is not self-igniting.

Danger of explosion:

Explosion of mixtures with oxygen possible.

Produces carbon dioxide gas when mixed with water. Subsequent sealing of drums can lead to pressure burst.

Explosion limits:

Upper:

2.1 % by volume

Lower:

11.5 % by volume

Vapour pressure at 20 °C:

14.2 hPa

Density at 20 °C:

1.03 g/cm³

Relative density:

1.03 (water = 1.00)

Vapour density:

Not determined

Evaporation rate:

Not determined

Solubility in / Miscibility with water:

Not miscible, reacts with water

Segregation coefficient (n-octanol/water):

Not determined

Viscosity:

Dynamic at 20 °C:

80 – 110 ku (Krebbs units)

Kinematic:

Not determined

Solvent content:

Organic solvents:

< 30 % by mass

Water:

< 0.1 % by mass

Solids content:

> 70 % by mass or 65 % by volume

MATERIAL SAFETY DATA SHEET : PROTECTAKOTE

[Prepared in accordance with European Regulation 1907/2006/EC, Article 31, Addendum II]

9.2 Other information

No further relevant information available.

VOC (EU):	< 30 % by mass
VOC(EU):	< 310 g/l
VOCV:	< 35 % by volume

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

Reacts with water.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: Could produce static discharge – use earthing.

10.3 Possibility of hazardous reactions

Stable if stored under normal conditions.

10.4 Conditions to avoid

When exposed to abnormally high temperatures containers will bulge and possibly burst.

10.5 Incompatible materials

Oxidisers. Reacts with water, generating carbon dioxide gas.

10.6 Hazardous decomposition products

Hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke may be produced.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: LD₅₀ / LC₅₀ values relevant for classification:

XYLENE:		MDI:	
Oral (LD ₅₀)	4300 mg/kg (rat)	Oral (LD ₅₀)	9200 mg/kg (rat)
Dermal (LD ₅₀)	> 1700 mg/kg (rabbit)	Dermal (LD ₅₀)	> 5000 mg/kg (rabbit)
Inhalation (LC ₅₀)	27.6 mg/l / 4 hours (rat)	Inhalation (LC ₅₀)	0.49 mg/l / 4 hours (rat)

No carcinogenic, mutagenic, or genetic effects have been established. Limited evidence exists that MDI may have a carcinogenic effect.

Primary irritant effect: Skin and Inhalation sensitiser.

XYLENE

On the skin: Practically non-irritating.

On the eyes: Irritant.

Orally: Low toxicity.

Through inhalation: Harmful. Can irritate the respiratory tract and cause headaches and giddiness.

Sensitisation: Prolonged skin contact may defat the skin resulting in possible irritation and dermatitis. Prolonged inhalation may cause CNS disturbances.

MDI

On the skin: Slight to moderate irritation. May stain skin.

On the eyes: Moderate eye irritation. May cause transient corneal damage.

Orally: Low toxicity. May cause gastrointestinal irritation.

Through inhalation: Can cause severe irritation of the respiratory tract with burning sensation of the nose and throat. Effects can be delayed.

Sensitisation: Respiratory sensitisation may occur. Chronic exposure by inhalation may result in a permanent decrease of lung function. May cause sensitisation by skin contact.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity: None of the components is persistent in the aquatic environment.

12.2 Persistence and degradability

Biodegradable. Once solidified, can be disposed of in landfill sites (consult local regulations).

12.3 Bioaccumulative potential

Not bioaccumulative.

12.4 Mobility in soil

Low due to solidification by reaction with water.

Additional ecological information:

General notes: May have short-term environmental effects. Contain, monitor and remove.

MATERIAL SAFETY DATA SHEET : PROTECTAKOTE

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12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

No further relevant information available.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Recommendation: Hazardous in liquid state. Solidify by reaction with water before disposal. Danger of bursting – do not seal. Use reputable waste disposal contractors. Destroy used containers. Consult local official regulations.

European waste catalogue	
08 00 00	Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks.
08 01 00	Wastes from MFSU and removal of paint and varnish.
08 01 11	Waste paint and varnish containing organic solvents or other dangerous substances.

Uncleaned packaging

Recommendation: Leave container unsealed for 3 to 4 days to solidify from atmospheric moisture. Once solid, container may be disposed of in a landfill site. Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION



14.1 UN-Number

ADR, IMDG, IATA UN 1263

14.2 UN proper shipping name

ADR 1263 PAINT
IMDG, IATA PAINT

14.3 Transport hazard classes

ADR	IMDG, IATA
	
Class 3 Flammable liquids Label 3	Class 3 Flammable liquids Label 3

IMO class: 3.2
EA code: 127
HAZCHEM code: 3 (Y)

14.4 Packing group

ADR, IMDG, IATA III

14.5 Environmental hazards

Marine pollutant: ND (Not Dangerous)

14.6 Special precautions for user

Warning: Flammable liquids
Danger code (Kemler): 33
EMS Number: F-E~S-E

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport/Additional information: Not applicable
For ADR and IMDG: Transport and packing are in accordance with the regulation for limited quantities. This product is therefore non-dangerous goods.

ADR

Limited quantities (LQ) 1 L and 4 L
Transport category 3

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SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Labelling according to EU guidelines:

The product has been marked in accordance with EU Directives / respective national laws.

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

The R and S phrases may be omitted if packaging contains no more than 0.125 litre.

Conforms to EC regulation number 1907/2006 REACH, Annex II.

Conforms to US Navy Military spec MIL-PRF-32171A – Deck Coatings, high durability/QPL-32171.

Risk phrases:	R10	Flammable
	R20	Harmful by inhalation
	R36/37/38	Irritating to eyes, respiratory system and skin
	R42	May cause sensitisation by inhalation
Safety phrases:	S24	Avoid contact with skin
	S25	Avoid contact with eyes
	S42	During spraying wear a cartridge-type respirator with cartridge for organic fumes
	S43	In case of fire, use foam/carbon dioxide/dry powder. Use water fog to cool. Do NOT use water jets!
	S62	If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label where possible

EC Label Name: PAINT

EC Classification: Flammable. Harmful.

EC Symbols: F, Xn



National legislation

Further information:

HS (G) 178, Spraying of Flammable Liquids, HSE., HS (G) 176, Storage of Flammable Liquids in Tanks, HSE., HS (G) 51, Storage of Flammable Liquid in Containers, HSE., HS (G) 37, An introduction to Local Exhaust Ventilation, HSE., Health and Safety at Work etc Act, 1974, and relevant Statutory Provisions., Environmental Protection Act, 1990 and associated legislation., The Special Waste Regulations, 1996 and amendments., The Chemicals (Hazard Information and Packaging for Supply) Regulations, 1994 and amendments., EH 40, Occupational Exposure Limits, HSE. Revised annually., HS(G) 53, Respiratory Protective Equipment - A Practical Guide for Users, HSE., HS(G) 97, A Step by Step guide to COSHH Regulations, HSE., EH 173, Monitoring Strategies for Toxic Substances, HSE.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

SECTION 16. OTHER INFORMATION

CONTAINS ISOCYANATE - POTENTIAL SENSITISER - ENSURE PRECAUTIONS ARE TAKEN.

PAY SPECIAL ATTENTION TO STORAGE AND HANDLING REQUIREMENTS.

IN CASE OF ANY DISCOMFORT FROM CONTACT WITH THE MIXTURE, ALWAYS SEEK MEDICAL ADVICE.

Hazard codes, R phrases and S phrases listed in item 3.2:

F = Flammable; Xn = Harmful; Xi = Irritant

R10	Flammable	S2	Keep out of the reach of children
R20	Harmful by inhalation	S23	Do not breathe gas/fumes/vapour/spray
R20/21	Harmful by inhalation and in contact with skin	S25	Avoid contact with eyes
R36/37/38	Irritating to eyes, respiratory system and skin	S36/37	After contact with skin, wash immediately with plenty of soap and water
R38	Irritating to skin	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
R40	Limited evidence of a carcinogenic effect		
R42	May cause sensitisation by inhalation		
R43	May cause sensitisation by skin contact		
R48/20	Danger of serious damage to health by prolonged exposure		

This MSDS is prepared in accordance with European Regulation 1907/2006/EC, Article 31, Addendum II.

This MSDS conforms to EC regulation number 1907/2006 REACH, Annex II.

All information is given in good faith, but without any guarantee in respect of accuracy.

No responsibility is accepted for errors or omissions or the consequences thereof.