

# Material Safety Data Sheet

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### DUROPROOF™ PU

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Classified as **Hazardous** according to criteria of ASCC<sup>1</sup> and not Dangerous Goods according to the ADG<sup>2</sup> Code

UN NO.....:	1263	D.G. Class.:	3	Pack. Group...:	III
HAZCHEM:	3Y	SUB. RISK.:	None allocated	SUSDP.....:	S6

**PROPER SHIPPING NAME:** None allocated

**PRODUCT USE:** Surface coating

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Polyurethane polymer	None allocated	25-40
Aromatic 100 solvent	64742-95-6	10-40
Aliphatic hydrocarbon solvent (Stoddard)	64742-47-8	8-20
Petroleum hydrocarbon oil	64741-81-7	15-30
Toluene diisocyanate	26471-62-5	<0.3
Carbon black	1333-86-4	5-10

See Section 8, Exposure Controls / Personal Protection

## 3. HAZARDS IDENTIFICATION

Irritating to eyes, respiratory system and skin.  
 Harmful by inhalation and if swallowed.  
 May cause sensitisation by inhalation and in contact with skin.  
 Harmful: May cause lung damage if swallowed.

## 4. FIRST AID MEASURES

**Eyes:** Immediately flush with water for 15 minutes. Get medical advice if irritation develops or

- persists.
- Skin:** Take of all contaminated clothing. Wash contaminated area with soapy warm water. Get medical advice if irritation develops or persists. Wash contaminated clothing and clean shoes before reuse.
- Inhalation:** Remove to fresh air. If not breathing, give artificial respiration, preferable mouth to mouth. If breathing is laboured, give oxygen and consult a physician immediately.
- Ingestion:** Consult a physician immediately. Do not induce vomiting unless advised by physician. Give one or two glasses of water to drink. If vomiting occurs, aspiration into the lungs may cause lung damage. Never give anything by mouth to an unconscious person.

## 5. FIRE FIGHTING MEASURES

Flash Point .....	61.1 °C Pensky Marten Closed Cup
Auto-ignition Temperature .....	No data available
Lower Explosive Limit .....	No data available
Upper Explosive Limit .....	No data available

### Suitable Extinguishing Media:

Dry chemical, foam, carbon dioxide, halogenated agents. If water is used, use very large quantities. The reaction between water and hot isocyanate may be vigorous.

### Protective Equipment for Fire Fighting:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

### Unusual Fire and Explosion Hazards:

At higher temperature pressure may build up in sealed containers. If safe to do so, use water to cool containers exposed to fire.

Water contamination will produce carbon dioxide. Do not reseal contaminated container as pressure build-up may rupture them. Thermal decomposition of this product may produce toxic fumes.

## 6. ACCIDENTAL RELEASE MEASURES

Eliminate all sources of ignition. Provide sufficient ventilation. Wear appropriate personal protective equipment including gloves and safety glasses. Do not breathe vapour. Contain spill. Do not allow into drains or waterways. Take up with absorbent material (e.g. sand, vermiculite, or commercially available inorganic absorbent). Use non-sparking tools and equipment. Fill into suitable containers for disposal. Water contamination will produce carbon dioxide. Do not reseal contaminated container as pressure build-up may rupture them. Let it stand for 48 hours, allowing carbon dioxide to vent away. Dispose of empty containers in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

### C1 Combustible Liquid – Store in accordance with Dangerous Goods requirements.

**Handling:** Observe normal standards of industrial hygiene for handling chemicals. Eliminate all sources of ignition. Use in a well-ventilated area. Avoid breathing vapour and contact with skin and eyes. Wear gloves, long sleeved shirt, and eye protection. A sensitised person should not be exposed to the product. Do not contaminate with water.

**Storage:** Store in tightly sealed containers to protect from atmospheric moisture. Store in a cool, dry area. Keep away from ignition sources such as fire, flame and sparks. Keep away from incompatible materials.

**Empty container warning:** Do not reuse empty drums or containers unless professionally cleaned. Empty containers may contain flammable vapours. Do not cut, drill, grind or weld on or near empty containers.

**Other Precautions:** Individuals with existing respiratory disease such as chronic bronchitis, emphysema or asthma should not be exposed to isocyanates. Do not eat, drink or smoke when using the product.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Exposure Limit Information

Component	NOHSC <sup>1</sup>			
	TWA		STEL	
	(ppm)	(mg/m <sup>3</sup> )	(ppm)	(mg/m <sup>3</sup> )
Polyurethane prepolymer (isocyanate terminated)	-	0.02b	-	0.07b
Petroleum hydrocarbon oil	a	-	a	-
Aliphatic hydrocarbon solvent (Stoddard)	a	-	a	-
Aromatic 100 solvent	100c	-	150c	-
Toluene diisocyanate	-	0.02b	-	0.07b
Carbon black	-	3 as dust	-	a

a = not listed

b = isocyanates (as NCO)

c = per ACGIH

TWA = Time Weighted Average

STEL = Short term Exposure Limit

<sup>1</sup> National Occupational Health and Safety Commission (Australia)

### Respiratory Protection

If vapours and mists occur, a respiratory protection program meeting Australian Standards AS-1716 and AS-1715 requirements must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in "Exposure Limit Information". Respirators should be equipped with organic vapour cartridges and filters for protection against dusts and mists.

### Eye Protection

Use chemical splash goggles (Australian Standard AS-1337) or approved equivalent. Eye protection worn must be compatible with respiratory protection system employed. An eye wash station and safety shower should be available in the work area.

### Hand Protection

Impermeable gloves as necessary to prevent skin contact. E.g. nitrile, butyl rubber or neoprene gloves.

### Protective Clothing

Clothing made of the following material has excellent resistance to this material: Tyvec, butyl, nitrile rubber or neoprene.

### Engineering Controls (Ventilation)

Use explosion-proof local exhaust ventilation sufficient to maintain exposure levels below exposure limit concentrations. Refer to Australian Standard AS-1668.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and colour .....	Black
State .....	Liquid
Odour Characteristic .....	Aromatic
pH .....	Not applicable
Viscosity .....	30,000 cps (min) 24 °C
Specific Gravity (Water = 1) .....	1.1
Vapour Density (Air = 1) .....	Greater than air
Vapour Pressure .....	No data available
Melting Point .....	No data available
Boiling Point .....	148 – 288 °C
Solubility in Water .....	Insoluble. Reacts slowly.

Flash Point ..... 61.1 °C Pensky Marten Closed Cup

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## 10. STABILITY AND REACTIVITY

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Considered stable under normal conditions of use and handling.

### **Hazardous decomposition products**

Combustion products: oxides of carbon, oxides of nitrogen and ammonia. Trace amounts of hydrogen cyanide.

### **Hazardous polymerisation**

May occur if contaminated with water or other incompatible substances.

### **Materials to avoid**

This material will react with any materials containing active hydrogens. Avoid water contact, alcohols, amines, alkalis and acids.

### **Conditions to avoid**

High temperatures in the presence of alkalis, tertiary amines, and metal compounds will accelerate polymerisation. Possible evolution of carbon dioxide may rupture containers if contaminated.

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## 11. TOXICOLOGICAL INFORMATION

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### **Acute Data**

Toluene Diisocyanate (Mixer Isomer) CAS ## 26471-62-5 → LD50: >2g/kg (rat, dermal); LD50: 5.8g/kg (oral, rat); LC50: 10ppm/4hrs (mouse)  
 Aromatic 100 CAS # 64742-95-6 → LD50: 4.7g/kg (rat, dermal) ; LC50: >3370 ppm/8hrs (rat)  
 ALIPHATIC HYDROCARBON SOLVENT (STODDARD) CAS # #8052-41-3/#64742-47-8 →LD50 (dermal)(rabbit): 3g/kg; LD50 (oral): 5g/kg (rat)

**Inhalation:** May cause weakness, fatigue and dizziness. Vapor and/or mist may cause irritation to nose and throat. May cause respiratory tract irritation. May cause coughing and tightness in chest with difficulty in breathing.

**Ingestion:** May cause irritation of the mouth, pharynx, oesophagus and stomach.

**Skin irritation:** May cause irritation resulting in redness, rash and itching.

**Eyes irritation:** May cause irritation if not washed out immediately.

**Chronic effects:** Prolonged and Repeated contact may cause asthma like conditions, CNS depression (central nervous depression), sensitization, allergic skin reaction (rash, hive-like, acme, itching) and respiratory and skin sensitization. This can be avoided with using proper personnel protective equipment. Repeated overexposure to vapors and/or material may injure the liver, kidneys and respiratory system unless suitable engineering controls and/or personal protective equipment and clothing are used. Aromatic Process Oil contains polycyclic aromatic hydrocarbons, some of which have been shown to cause skin cancer following prolonged and repeated skin contact. Carbon Black is classified by IARC to be known as animal carcinogen and a possible human carcinogen (GROUP 2B). A long term NTP study showed that oral exposure to Toluene Diisocyanate (TDI) caused cancer in rats and mice. A lifetime inhalation study sponsored by International Isocyanate Institute did not show carcinogenic activity in rats.

**Signs and Symptoms of Exposure:** Chronic cough, tightness in the chest and difficulty breathing. Redness of eyes, irritation of skin causing redness, itching, irritation of the mouth, pharynx, oesophagus and stomach through ingestion.

**Medical Conditions generally Aggravated by Exposure:** Pre-existing eye, skin, liver, kidney and respiratory disorders may be aggravated by exposure.

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## 12. ECOLOGICAL INFORMATION

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No available data.

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## 13. DISPOSAL CONSIDERATIONS

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Containers hazardous when empty. Do not reuse empty drums or containers unless professionally cleaned. Empty containers may contain flammable vapours. Do not cut, drill, grind or weld on or near empty containers. Dispose of waste and empty containers in accordance with federal, state and local laws.

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## 14. TRANSPORT INFORMATION

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Not classified as Dangerous Goods according to the Australian Code For The Transport Of Dangerous Goods By Road And Rail (Seventh Edition). See section 1.

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## 15. REGULATORY INFORMATION

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Labelling Requirements:

According to Criteria of National Occupational Health and Safety Commission - Australia

R36/37/38	Irritating to eyes, respiratory system, and skin.
R20/22	Harmful by inhalation and if swallowed.
R42/43	May cause sensitisation by inhalation and in contact with skin.
R65	Harmful: May cause lung damage if swallowed.
S2	Keep out of reach of children
S7/8	Keep container tightly closed and dry
S20/21	When using do not eat, drink or smoke.
S23	Do not breathe vapour/spray.
S24/25	Avoid contact with skin and eyes.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S38	In case of insufficient ventilation, wear suitable respiratory protection.
S62	If swallowed, do not induce vomiting, seek medical advice immediately and show this container or label.
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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## 16. OTHER INFORMATION

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<sup>1</sup> Australian Safety and Compensation Council

<sup>2</sup> Australian Dangerous Goods Code – Seventh Edition

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