

Material Safety Data Sheet

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Infosafe No™	LPWZG	Issue Date : November 2007	ISSUED by BARNES	CS: 1.4.18
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Product Name : **4PU - PART A**

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	4PU - PART A
Company Name	Barnes Products Pty Ltd (ABN 004 011 456)
Address	6 Homedale Road Bankstown NSW 2200
Emergency Tel.	(02) 9793 7555
Telephone/Fax Number	Tel: (02) 9793 7555 Fax: (02) 9793 7091
Recommended Use	Casting resin.
Other Information	Information provided has been prepared in good faith and believed to be correct. Barnes Products Pty Limited make no warranty either express or implied as to completeness, accuracy thereof, misuse or misinterpretation of this information.

2. HAZARDS IDENTIFICATION

Hazard Classification	HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. Hazard classification according to the criteria of NOHSC. Dangerous goods classification according to the Australia Dangerous Goods Code.
Risk Phrase(s)	R20 Harmful by inhalation. R36/37/38 Irritating to eyes, respiratory system and skin. R42/43 May cause sensitisation by inhalation and skin contact
Safety Phrase(s)	S23 Do not breathe gas/fumes/vapour/spray S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S45 In case of accident or if you feel unwell seek medical advice immediately

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
	4,4-Methylenediphenyl diisocyanate	101-68-8	30-60 %
	Modified MDI	25686-28-6	30-60 %
	Diisodecyl phthalate	26761-40-0	10-30 %

4. FIRST AID MEASURES

Inhalation	Remove the source of contamination or move the victim to fresh air. Ensure airways are clear and give oxygen if breathing is difficult. Apply artificial respiration if not breathing. Seek medical attention.
Ingestion	DO NOT INDUCE VOMITING. Wash out mouth with water. Seek medical attention.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If symptoms develop seek medical attention.
Eye	If contact with the eye(s) occurs, wash with copious amounts of water holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. In all cases of eye contamination it is a sensible precaution to seek medical advice.
First Aid Facilities	Eye wash and normal washroom facilities.
Advice to Doctor	Treat symptomatically.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 131 126).

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use carbon dioxide, dry chemical or foam.
Hazards from Combustion Products	Under fire conditions this product may emit toxic and/or irritating fumes including carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide.
Specific Hazards	Combustible liquid. This product will burn if exposed to fire. Water contamination will produce carbon dioxide. Do not re-seal contaminated containers as pressure build up may rupture them.

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Precautions in connection with Fire Fire-fighters should wear full protective clothing and self contained breathing apparatus (SCBA) operated in positive pressure mode. Water spray may be used to keep fire exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures Wear appropriate personal protective equipment and clothing to minimise exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unnecessary personnel. If possible contain the spill. Place inert non-combustible absorbent material such as vermiculite, sand or dirt onto spillage. Use clean non-sparking tools to collect the material and place into a suitable labelled container. Do not dilute material but contain. Dispose of waste according to federal, Environmental Protection Authority and state regulations. If this material enter the waterways contact the Environmental Protection Authority, or your local Waste Management Authority.

7. HANDLING AND STORAGE

Precautions for Safe Handling Use in a well ventilated area. DO NOT store or use in confined spaces. Avoid breathing in mists or vapours. Do not use near welding or other ignition sources and avoid sparks. If contamination of the MDI is suspected, do not re-seal container because of possible rupture due to pressure build up. Always slowly vent container when opening to relieve any pressure build up. Wear appropriate protection. It is essential that all who come into contact with this material maintain high standards of personal hygiene ie. washing hands prior to eating, drinking, smoking or using toilet facilities.

Conditions for Safe Storage Store in a cool, dry well-ventilated area away from heat, sources of ignition and out of direct sunlight. Protect from freezing. Protect from water and moisture. A nitrogen blanket should be used for bulk storage between 18 - 24°C. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Do NOT pressurise, cut, heat or weld containers as they may contain hazardous residues.

Storage Temperatures 18°C - 24°C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards	Name	STEL		TWA		Footnote
		mg/m3	ppm	mg/m3	ppm	
	4,4-Methylenediphenyl diisocyanate	0.07		0.02		Isocyanates, all (as-NCO)

Biological Limit Values No Biological limit available.

Other Exposure Information As published by the National Occupational Health and Safety Commission (NOHSC):
TWA - the Time-Weighted Average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

According to current knowledge these concentrations should neither impair the health of, nor cause undue discomfort to, nearly all workers.

All atmospheric contamination should be kept to as low a level as is workable. Exposure Standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals, they are not a measure of relative toxicity.

Engineering Controls Provide sufficient ventilation to keep airborne levels below the exposure limit. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a local exhaust ventilation system is required. Refer to AS1940 - The storage and handling of flammable and combustible liquids and AS2430 - Explosive gas atmospheres for further information concerning ventilation requirements.

Respiratory Protection If engineering controls are not effective in controlling airborne exposure then the use of an approved air purifying respirator equipped with an organic vapour sorbent filter should be used suitable for protecting against airborne contaminants. Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Expert advice may be required to make this decision. Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices.

Eye Protection Safety glasses with side shields, goggles or full-face shield as appropriate recommended. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with

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Hand Protection	Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications. Wear gloves of impervious material such as PVC or rubber gloves. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.
Body Protection	Wear appropriate clothing including chemical resistant apron where clothing is likely to be contaminated. It is advisable that a local supplier of personal protective clothing is consulted regarding the choice of material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pale yellow, viscous liquid.
Odour	Slight aromatic or musty odour.
Melting Point	Approx. < 15.5°C
Boiling Point	Decomposes @ 341°C
Solubility in Water	Reacts.
Specific Gravity	1.2
pH Value	Not available
Vapour Pressure	<0.00001 mmHg @ 20°C
Vapour Density (Air=1)	8.6
Flash Point	204°C
Flammability	Classified as a Class C2 (COMBUSTIBLE LIQUID) for the purposes of storage and handling, in accordance with the requirements of AS1940. This product should be stored and used in a well ventilated area away from naked flames, sparks and other sources of ignition.
Flammable Limits - Lower	Not available
Flammable Limits - Upper	Not available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Heat, direct sunlight, open flames or other sources of ignition.
Incompatible Materials	Water, acids, bases, metal compounds and surface active materials.
Hazardous Decomposition Products	Thermal decomposition may result in the release of toxic and/or irritating fumes including Isocyanate vapours, carbon dioxide, carbon monoxide, nitrogen oxides and traces of hydrogen cyanide.
Hazardous Reactions	Product reacts with water to form heat and carbon dioxide as well as hard insoluble urea.
Hazardous Polymerization	May occur with incompatible reactants, especially strong bases, water or temperature over 175°C. Temperatures over 49°C accelerate the reaction with water.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	Acute toxicity: LD50 (oral, rat): > 20 g/kg LD50 (Dermal, rabbits): 15.8 g/kg LC50 (Inhalation) 4hr: Approx. 370 mg/l (Dapnea, Limnea, Invertebrates and Zebra fish)
Inhalation	Harmful by inhalation. Irritating to respiratory system. May cause sensitization by inhalation. Inhalation of product vapours will cause irritation of the nose, throat and respiratory system.
Ingestion	Ingestion of this product may irritate the gastric tract causing nausea and vomiting.
Skin	Irritating to skin and may cause sensitisation by skin contact. Symptoms include redness and itchiness.
Eye	Irritating to eyes. On eye contact this product will cause tearing, stinging, blurred vision, and redness.
Chronic Effects	Not available.

12. ECOLOGICAL INFORMATION

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Ecotoxicity	No data is available for this material.
Persistence / Degradability	Not available.
Mobility	Not available.
Environ. Protection	Do not allow product to enter drains, waterways or sewers.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations	Dispose of waste according to federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.
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14. TRANSPORT INFORMATION

Transport Information	Not classified as a Dangerous Good, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
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15. REGULATORY INFORMATION

Poisons Schedule	Not Scheduled
Hazard Category	Harmful, Irritant

16. OTHER INFORMATION

Date of preparation or last revision of MSDS	MSDS Created: November 2007
Contact Person/Point	...End Of MSDS...