



Material Safety Data Sheet

Section 1. Chemical Product and Company Identification	
Product Name	Macroplast UR-8230DL
Effective Date	10/10/2002
Product Use	Polyurethane Adhesive
Supersedes	09/29/1998
Company Address	Henkel Adhesives 1345 Gasket Drive Elgin, IL 60120 (847) 608-0200
Transportation Emergency	Chemtrec: 800 424-9300
Non-Transportation Emergency	847 468-9200

Section 2. Composition and Information on Ingredients			
Name	CAS #	% by Weight	Exposure Limits
1) 4,4'-Diphenylmethane Diisocyanate	101-68-8	< 30	TWA: .005 (ppm) from ACGIH (TLV) CEIL: .02 (ppm) from OSHA (PEL)

Section 3. Hazards Identification	
Physical State and Appearance	Brown viscous liquid
Emergency Overview	WARNING! May cause allergic skin reaction. May cause allergic respiratory reaction. Harmful if inhaled. Causes eye and skin irritation. Causes respiratory tract irritation.
Routes of Exposure	Skin Eye contact Inhalation Ingestion
Potential Acute Health Effects	<p><i>Eyes</i> Causes eye irritation.</p> <p><i>Skin</i> Contact with skin causes irritation. May cause skin sensitization. May cause dermatitis. Animal tests have indicated that respiratory sensitization can result from contact with 4,4'-diphenylmethane diisocyanate.</p> <p><i>Inhalation</i> Possible irritation of the respiratory system can occur causing a variety of symptoms such as dryness of the throat, tightness of the chest and shortness of breath. Allergic conditions can occur in certain individuals with high sensitivity to isocyanates; this may result in asthma-like symptoms. May cause respiratory sensitization. May cause lung damage.</p> <p><i>Ingestion</i> Harmful if swallowed. Ingestion is not an expected route of entry.</p>
Potential Chronic Health Effects	May cause long term lung damage. Chronic skin contact may cause dermatitis.

Section 4. First Aid Measures	
Eye Contact	Flush eyes immediately with large amount of water for at least 15 minutes holding eyelids open while flushing. Get prompt medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated skin with soap and water. Seek medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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Ingestion Do not induce vomiting unless directed to do so by medical personnel. Give victim one or two glasses of water or milk. Never give anything by mouth to an unconscious person. Seek medical attention.

Section 5. Fire Fighting Measures

Flammability of the Product OSHA Combustible Liquid: IIIB

Auto-ignition Temperature >200°C (392°F)

Flash Points CLOSED CUP: >200°C (392°F).

Flammable Limits Not determined

Fire Fighting Media and Instructions Use carbon dioxide, dry chemical, foam, or water fog. Qualified persons wearing full fire-fighting suits and approved/certified self-contained breathing apparatus. During a fire, irritating and/or toxic gases and particulate may be generated by thermal decomposition or combustion.

Section 6. Accidental Release Measures

Spill and Leak Warn personnel to move away. Avoid breathing vapors. Contain and absorb with inert material and place in suitable waste disposal container. Before attempting cleanup, refer to hazard caution information in other sections of this MSDS.

Section 7. Handling and Storage

Handling Keep container closed. Use only with adequate ventilation. Avoid breathing vapors or spray mists.

Storage Keep container tightly closed. Store container in a cool, dry, ventilated area. Recommended storage temperature between 60 F and 85 F.

Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Personal Protection

Eyes Safety glasses with side shields. Goggles, face shield, or other full-face protection if potential exists for direct exposure.

Body Wear chemical resistant overalls or long sleeved shirt and long trousers. Disposable outer garments when there is the potential for contact with the material.

Respiratory This product contains isocyanates which have poor warning properties. A MSHA/NIOSH approved respirator or equivalent is recommended.

Hands Use neoprene, nitrile or rubber gloves to prevent skin contact.

Feet Chemical resistant footwear.

Section 9. Physical and Chemical Properties

Physical State and Appearance Brown viscous liquid

Odor Musty

Odor Threshold Not determined

Color Brown.

pH Not applicable.

Melting/Freezing Point Not determined

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Specific Gravity	1.1 (Water = 1), 9.20 lb/gal
Vapor Pressure	< 0.00001 (mm Hg @ 20 C)
Vapor Density	>1 (Air = 1)
Volatility	Non-volatile.
Evaporation Rate	Not applicable
Viscosity	3,000 - 7,000 cps @ 77F
Solubility	Insoluble in water (reacts).
Dispersion Properties	Not dispersed in water.
Boiling Point	Not determined
Water/oil distribution coefficient	Not determined
Physical Chemical Comments	Slowly reacts with water to produce carbon dioxide gas and inert polymer fragments. Soluble in most organic solvents.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Slowly reacts with moisture to produce carbon dioxide.
Incompatibility with Various Substances	Reactive or incompatible with oxidizing agents, acids, alkalis, amines. Slightly reactive with moisture.
Hazardous Decomposition Products	Monomeric isocyanate, hydrogen cyanide, nitrogen dioxide, carbon monoxide, carbon dioxide, irritating and/or toxic gases and particulate may be generated by thermal decomposition or combustion.
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

Product LC ₅₀ /LD ₅₀	Polymeric MDI (CAS #9016-87-9): Acute oral toxicity (LD50): >5000 mg/kg (Rat). Acute dermal toxicity (LD50): >5000 mg/kg (Rabbit).
Toxicological Effects	Carcinogenicity: The ingredients of this product are not classified as carcinogenic by ACGIH or IARC, not regulated as carcinogens by OSHA, and not listed as carcinogens by NTP. Mutagenicity: There is no substantial evidence of mutagenic potential. Reproductive Effects: No adverse reproductive effects are anticipated. Teratogenicity and Fetotoxicity: No birth defects were identified in two independent animal (rat) studies.

Section 12. Ecological Information

Ecotoxicity	Polymeric MDI (CAS #9016-87-9): LC50 (Zebra Fish) > 1000 mg/l EC50 (Daphnia magna) (24-hour) >1000mg/l EC50 (E. Coli) > 100mg/l
Toxicity of the Products of Biodegradation	Slowly reacts with water to produce carbon dioxide gas and inert non-biodegradable polymer fragments.

Section 13. Disposal Considerations

Waste Information Product residues must be managed in compliance with USEPA (40CFR Part 261), state and local environmental control regulations.

Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification Not a DOT regulated material

Proper Shipping Name Not applicable

UN/NA Identification Number Not applicable

Packing group Not applicable

Hazardous Substances Reportable Quantity 4,4'-Diphenylmethane Diisocyanate (CAS# 101-68-8): 5000 LBS.

Special Provisions for Transport Non-regulated when 4,4'-Diphenylmethane Diisocyanate is less than 5000 lbs. in any single container.

TDG Classification Not a TDG controlled material.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 8(b) inventory: All components are listed on the inventory or exempt.
 SARA 302/304/311/312 extremely hazardous substances: No products were found.
 SARA 302/304 emergency planning and notification: No products were found.
 SARA 302/304/311/312 hazardous chemicals: No products were found.
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.
 SARA 313 toxic chemical notification and release reporting: Diisocyanate Compounds (N120) < 30%
 Clean Water Act (CWA) 307: No products were found.
 Clean Water Act (CWA) 311: No products were found.
 Clean air act (CAA) 112 accidental release prevention: 4,4'-Diphenylmethane Diisocyanate
 Clean air act (CAA) 112 regulated flammable substances: No products were found.
 Clean air act (CAA) 112 regulated toxic substances: No products were found.

Canadian Regulatory Lists Canadian Domestic Substances List (DSL): All components are listed or exempt.

WHMIS (Canada) WHMIS Class: D1A, D2A, D2B
 This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 MSDS headings.

International Regulations No additional information.

State Regulations Rhode Island RTK hazardous substances: 4,4'-Diphenylmethane Diisocyanate
 Pennsylvania RTK: 4,4'-Diphenylmethane Diisocyanate: (environmental hazard)
 Florida: 4,4'-Diphenylmethane Diisocyanate
 Minnesota: 4,4'-Diphenylmethane Diisocyanate
 Massachusetts RTK: 4,4'-Diphenylmethane Diisocyanate
 New Jersey spill list: 4,4'-Diphenylmethane Diisocyanate
 California prop. 65: No products were found.

Section 16. Other Information

Hazardous Material Information System (U.S.A.)

Health	*	2
Fire Hazard		1
Reactivity		1
Personal Protection		

National Fire Protection Association (U.S.A.)



Validated by Henkel Adhesives Regulatory Department on 10/14/2002.

Verified by Henkel Adhesives Regulatory Department. Printed 10/14/2002.

Transportation Emergency Chemtrec: 800 424-9300

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. It is the users responsibility to determine suitability for the user's purpose and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. However, neither the above named supplier nor any of its subsidiaries assumes responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected to handling, storage, use, misuse or disposal of this product. If this product is used as a component in another product, this MSDS information may not be applicable.