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1. PRODUCT AND COMPANY IDENTIFICATION

Product name: DURABOND URETHANE RESIN
Product type: Polyurethane adhesive

IDH number: 744487
Item number: 30676_209675
Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: 860.571.5100
Emergency telephone: 860.571.5100
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state: Liquid
Color: yellow
Odor: Aromatic, Slight

HEALTH: *3
FLAMMABILITY: 1
PHYSICAL HAZARD: 1
Personal Protection: See MSDS Section 8

DANGER: HARMFUL IF INHALED.
MAY CAUSE LUNG DAMAGE.
MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION.
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Acute: Methylene bisphenyl isocyanate (MDI) vapors or mist at concentrations above the TLV can irritate the mucous membranes in the respiratory tract (nose, throat, lungs) causing runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing obstruction). Persons with preexisting, nonspecific bronchial hyper-reactivity can respond to concentrations below the TLV with similar symptoms as well as lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitive pneumonitis with flu-like symptoms (e.g. fever, chills) have also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible. Chronic: As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. Chronic overexposure to isocyanates has been reported to cause lung damage. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Sensitization can either be temporary or permanent. Over exposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent.

Skin contact: Acute: Experience indicates that direct contact is the route of exposure most likely to cause sensitization. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Cured material is difficult to remove. Chronic: Prolonged contact can cause reddening, swelling, rash, scaling, blistering and in some cases, skin sensitization. Individuals who have skin sensitization can develop these symptoms from contact with liquid or vapor. Animal tests have indicated that respiratory sensitization can result from skin contact with MDI. Once sensitized, an individual may react even to airborne levels below the TLV with the following symptoms: itching and tingling of the earlobes and neck, rash, hives, swelling of the arms and legs or other symptoms common to allergic dermatitis.

Eye contact: Stinging. Liquid, aerosols or vapor are irritating and can cause tearing, reddening and swelling.

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Existing conditions aggravated by exposure: Skin allergies. Eczema. Asthma. Other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity).

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Polyisocyanate based on MDI	Unknown	30 - 60
Methylenebis(phenylisocyanate)	101-68-8	30 - 60
Methylene bisphenyl isocyanate	26447-40-5	10 - 30

4. FIRST AID MEASURES

Inhalation: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Get immediate medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult a physician should this development occur.

Skin contact: Remove contaminated clothing and footwear. Immediately flush skin with plenty of water (using soap, if available). For severe exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposure, seek medical attention if irritation develops or persists after area is washed. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye contact: Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.

Ingestion: Do not induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

Notes to physician: Treat symptomatically and supportively.Stain for evidence of corneal injury.Inducing vomiting is contraindicated because of the irritating nature of this compound.If cornea is burned, instill antibiotic steroid preparation frequently.Respiratory:Skin:This compound is a known skin sensitizer.Treat symptomatically as for contact dermatitis or thermal burns.Ingestion:Eyes:Workplace vapors have produced reversible corneal epithelial edema impairing vision.Treat symptomatically.There is no specific antidote.This compound is a known pulmonary sensitizer.

5. FIRE FIGHTING MEASURES

Flash point: > 93.33 °C (> 199.99 °F) Estimated

Autoignition temperature: Not available

Flammable/Explosive limits - lower: Not available

Flammable/Explosive limits - upper: Not available

Extinguishing media: Dry chemical. Carbon dioxide. Foam.

Special firefighting procedures: During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Unusual fire or explosion hazards: Closed containers may rupture (due to build up of pressure) when exposed to extreme heat.

Hazardous combustion products: Oxides of carbon. Oxides of nitrogen. Hydrogen cyanide. Isocyanates. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Remove all sources of ignition. Large quantities may be pumped into closed, but not sealed containers for disposal. For Minor Spills or Leaks: Cover spill area with suitable absorbent material. Saturate absorbent material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution with scrubbing, followed by absorbent until surface is decontaminated. Check for surface contamination using suitable test kit. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO2) escape. For minor spills, absorb isocyanates with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well ventilated area (outside) and treat with neutralizing solution: mixture of 80% water and 20% non-ionic surfactant Tergitol TMN-10; or 90% water, 3-8% concentrated ammonia and 2% detergent.

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Use only with adequate ventilation. Keep container closed.

Storage: For safe storage, store between 20 °C (68°F) and 40 °C (104°F)
Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Production of this gas can cause sealed containers to expand and possibly rupture explosively. Reacts slowly with water to liberate carbon dioxide gas.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyisocyanate based on MDI	None	None	None	None
Methylenebis(phenylisocyanate)	0.005 ppm TWA	0.02 ppm (0.2 mg/m3) Ceiling1	None	None
Methylene bisphenyl isocyanate	None	None	None	None

Engineering controls: Local exhaust should be used to maintain levels below the TLV whenever MDI is processed, heated or spray applied. Standard reference sources regarding industrial ventilation (i.e., ACGIH Industrial Ventilation) should be consulted for guidance about adequate ventilation. Air monitoring: Isocyanate exposure levels must be monitored. Monitoring of airborne isocyanates in the breathing zone of individuals should become part of the overall employee exposure characterization program. Monitoring techniques have been developed by NIOSH and OSHA. Medical Surveillance: Medical supervision of all employees who handle or come in contact with isocyanates is recommended. These should include preemployment and periodic medical examinations with pulmonary function tests (FEV, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanates. Once a person is diagnosed as sensitized to an isocyanate, no further exposure can be permitted.

Respiratory protection: A positive pressure, supplied-air respirator or a self-contained breathing apparatus is recommended when: airborne concentrations of isocyanate are known to exceed 0.005 ppm; operations are performed in a confined space or area with limited ventilation; material is heated or sprayed.

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene, Butyl-rubber, or nitrile-rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	yellow
Odor:	Aromatic, Slight
Odor threshold:	Not available
pH:	Not available
Vapor pressure:	< 0.00001 mm hg (25 °C (77°F)) For MDI
Boiling point/range:	Not determined
Melting point/ range:	Not applicable
Specific gravity:	1.19
Vapor density:	Not determined
Flash point:	> 93.33 °C (> 199.99 °F) Estimated
Flammable/Explosive limits - lower:	Not available
Flammable/Explosive limits - upper:	Not available
Autoignition temperature:	Not available
Evaporation rate:	Not available
Solubility in water:	Negligible. Reacts slowly with water to liberate carbon dioxide gas.
Partition coefficient (n-octanol/water):	Not available
VOC content:	< 1 %; < 10 g/l Estimated

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage and use.

Hazardous reactions: Contact with moisture, other materials which can react with isocyanates, or temperatures above 204.4°C (400°F), may cause polymerization.

Hazardous decomposition products: None identified.

Incompatible materials: Water Amines. Strong bases. Alcohols. Will cause some corrosion of copper alloys and aluminum.

Conditions to avoid: Store away from incompatible materials. High temperatures. Contamination with water.

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyisocyanate based on MDI	No	No	No
Methylenebis(phenylisocyanate)	No	No	No
Methylene bisphenyl isocyanate	No	No	No

Hazardous components	Health Effects/Target Organs
Polyisocyanate based on MDI	No Data
Methylenebis(phenylisocyanate)	Irritant, Respiratory, Allergen
Methylene bisphenyl isocyanate	Allergen, Irritant, Mutagen, Respiratory

12. ECOLOGICAL INFORMATION

Ecological information: Fish toxicity: Brachydanio 96 hours - LC0= 0.69 mg/L; LC50- 1.20 mg/L; LC100= 2.76 mg/L. (Values for isocyanate).

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Methylenebis(phenylisocyanate) (CAS# 101-68-8).

California Proposition 65: No California Proposition 65 listed chemicals are known to be present.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.
WHMIS hazard class: D.1.A, D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format., This Material Safety Data Sheet contains changes from the previous version in Section(s): 2, 15

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