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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: Hysol U-05FL Uret ADH Off whit
Product type: Polyurethane adhesive
Company address:
 Henkel Corporation
 1001 Trout Brook Crossing
 Rocky Hill, Connecticut 06067

Item No. : 29350_209545 / IDH No. 702019
Region: United States
Contact Information:
 Telephone: 860.571.5100
 Emergency telephone: 860.571.5100
 Internet: www.loctite.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous components</u>	<u>%</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER</u>
Polyisocyanate based on MDI UNKNOWN	30-60	None	None	None
Methylene bisphenyl isocyanate 101-68-8	30-60	0.005 ppm TWA	0.02 ppm Ceiling 0.2 mg/m ³ Ceiling	None
Methylene bisphenyl isocyanate 26447-40-5	10-30	None	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

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

HMIS:

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

WARNING: MAY CAUSE ALLERGIC SKIN AND RESPIRATORY REACTION.
 MAY BE HARMFUL IF SWALLOWED OR INHALED.
 MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Eye contact, Skin contact, Inhalation, Ingestion

Potential Health Effects

Inhalation:

Acute: Inhalation of dicyclohexylmethane-4,4'-diisocyanate 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 hyperreactivity can respond to concentrations below the TLV with similar symptoms as well as lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). These effects are usually reversible. Chemical or hypersensitive pneumonitis with flu-like symptoms (e.g. fever, chills) have also been reported. Chronic: As a result of previous repeated exposures or a single large dose, certain individuals develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the TLV. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthma attack, could be immediate or delayed (up to several hours after exposure). 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. Overexposure to isocyanates has also been reported to cause lung damage (including decrease in lung function) which may be permanent. Sensitization can either be temporary or permanent.

Skin contact:	Acute: This material is a primary skin irritant. Isocyanates react with skin protein and moisture and can cause irritation which may include the following symptoms: reddening, swelling, rash, scaling or blistering. Dicyclohexylmethane-4,4'-diisocyanate is also a potent sensitizer. Experience indicates that direct contact is the route of exposure most likely to cause sensitization. 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. 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 dicyclohexylmethane-4,4'-diisocyanate.
Eye contact:	Stinging. Liquid, aerosols or vapor are irritating and can cause tearing, reddening and swelling.
Ingestion:	Irritation and corrosive action can occur in the mouth, stomach tissue and digestive tract if swallowed. Symptoms can include sore throat, abdominal pain, nausea, vomiting and diarrhea.
Existing conditions aggravated by exposure:	Asthma. Other respiratory disorders (bronchitis, emphysema, bronchial hyperreactivity). Skin allergies. Eczema.

See Section 11 for additional toxicological information.

4. FIRST AID MEASURES

Inhalation:	Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain 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 shoes. After contact with skin, wash immediately with plenty of water. Wash clothing before reuse. 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.
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. Consult a physician if necessary.
Notes to physician:	Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible corneal epithelial edema impairing vision. Skin: This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound. Respiratory: This compound is a known pulmonary sensitizer. Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Flash point:	Greater than 93°C (200°F) ASTM D3278
Autoignition temperature:	Not available
Flammable/Explosive limits-lower %:	Not available
Flammable/Explosive limits-upper %:	Not available
Extinguishing media:	Carbon dioxide (CO2). Foam. Dry chemical.
Special fire fighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion.
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. Irritating organic vapors.

6. ACCIDENTAL RELEASE MEASURES

Environmental precautions:	Prevent product from entering drains or open waters.
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Clean-up methods:

Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. If temporary control of isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over spill. Large quantities may be pumped into closed, but not sealed containers for disposal. 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. Add about ten parts of neutralizer per part of isocyanate, with mixing. Allow to stand uncovered for 48 hours to let carbon dioxide escape. Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

7. HANDLING AND STORAGE

Handling:

Avoid contact with eyes, skin and clothing. Do not breathe mist or vapors. Wash thoroughly after handling.

Storage:

For safe storage, store between 30°C (86°F) and 40°C (104°F). Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Reacts slowly with water to form carbon dioxide gas. Production of this gas can cause sealed containers to expand and possibly rupture explosively.

Incompatible products:

Water, amines, strong bases, and alcohols. Will cause some corrosion of copper alloys and aluminum.

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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 (FEV₁, 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.

Skin protection:

Rubber gloves recommended. Neoprene gloves. Chemical resistant apron

Eye/face protection:

Safety goggles or safety glasses with side shields. Do not wear contact lenses when handling this product.

See Section 2 for exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Liquid

Color:

Yellow

Odor:

Slight, Aromatic

Vapor pressure:

Less than 0.00001 mm Hg at 25°C (77°F) For MDI

pH:

Not applicable

Boiling point/range:

368°C (694°F)

Melting point/range:

Not available

Specific gravity:

1.14

Vapor density:

8.5 For MDI

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 grams/liter (estimated)

10. STABILITY AND REACTIVITY

Stability:

Stable.

Hazardous polymerization:

May occur. 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

Incompatibility: Will cause some corrosion to copper alloys and aluminum. Water. Amines. Strong bases. Alcohols.

Conditions to avoid: Contamination with water. High temperatures. Storage with incompatible materials.

11. TOXICOLOGICAL INFORMATION

Carcinogen Status

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Polyisocyanate based on MDI UNKNOWN	No	No	No
Methylene bisphenyl isocyanate 101-68-8	No	No	No
Methylene bisphenyl isocyanate 26447-40-5	No	No	No

Literature Referenced Target Organ & Other Health Effects

Hazardous components	Health Effects/Target Organs
Polyisocyanate based on MDI UNKNOWN	No data
Methylene bisphenyl isocyanate 101-68-8	Allergen, Irritant, Respiratory
Methylene bisphenyl isocyanate 26447-40-5	Allergen, Irritant, Respiratory, Mutagen

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: Dispose of according to Federal, State and local governmental regulations.

EPA hazardous waste number: Waste must be tested to determine the applicable EPA hazardous waste numbers.

14. TRANSPORT INFORMATION

The shipping classifications in this section are for non-bulk packaging only (unless otherwise specified). Shipping classification may be different for bulk packaging.

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

WaterTransportation (IMO/IMDG):

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

Packing group:
Marine pollutant:

None
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 5 (a) (2) SNUR: None.
TSCA 12 (b) Export Notification: None.

CERCLA/SARA Section 302 EHS: None.
CERCLA/SARA Section 311/312: Immediate Health Hazard, Delayed Health Hazard, Reactive
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). Methylene bisphenyl isocyanate (CAS# 26447-40-5).

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 Domestic Substances List.
WHMIS hazard class: D.2.A, D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: This material safety data sheet contains changes from the previous version in section(s): 14

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