

# NOBLE 3D PRINTERS, LLC

## Material Safety Data Sheets

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Emergency Telephone: Chemtrec 1-800-424-9300

### Section 1 – Product Information

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**Common Chemical Name:** Blend of Polyols

**Synonyms:** N/A

**Chemical Family:** Polyether Polyol

**Molecular Weight:** Not Established

### Section 2 - Ingredients

Chemical:	CAS	Amount
Polyether Polyols	Proprietary	50-60%
High Molecular Weight Plasticizer	Proprietary	40-50%

These products are not considered to be hazardous according to OSHA Hazard Communication Standard and contain no chemical subject to Sara title III Section 313 supplier notification requirements.

All products are not listed as Carcinogen in NTP, IARC, or OSHA 1910(z)

### Section 3- Hazardous Identification

<b>Color:</b>	Colorless
<b>Form/Appearance:</b>	Liquid
<b>Odor:</b>	Polyol
<b>Odor Intensity:</b>	Mild

#### Nature of Hazard

**Emergency Overview:** Contact with eyes and skin may cause irritation. Inhalation may result in irritation.

**Eye Contact:** May cause irritation.

**Skin Contact:** Frequent or prolonged contact may irritate and cause dermatitis. Occasional brief contact with the liquid will not result in significant irritation. Skin contact may aggravate an existing dermatitis condition.

**Inhalation:** May cause respiratory irritation.

**Ingestion:** May cause gastric disturbances.

### Section 4 – First Aid

**Eye:** Flush with large amounts of clean water for 15 minutes. If irritation persists, get medical attention.

**Skin:** Wash with soap and water. Get medical attention if irritation develops or persists. Wash clothing before reuse.

**Inhalation:** Remove to fresh air. Aid in breathing if necessary. If breathing is difficult, give oxygen and continue to monitor. Get immediate medical attention.

**Ingestion:** If swallowed, dilute with water and immediately induce vomiting. Do not give fluids if unconscious or having convulsions. Get medical attention immediately.

## Section 5 – Fire Fighting Measures

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**Extinguishing Media:** Water spray, foam, carbon dioxide, or dry chemical  
**Fire Fighting Instructions:** Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Use water spray to cool fire exposed surfaces and to protect personnel. Wear structural fire fighting gear.  
**Flash Point:** > 260 F

## Section 6 – Accidental Release Measures

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**General:** Spills should be contained, solidified, and placed in suitable containers for disposal at a licensed facility.  
**Waste Disposal:** Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.

## Section 7 – Handling and Storage

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**General:** Avoid breathing mist or vapors and repeated or prolonged exposure with skin. Avoid eye contact. Do not drink.  
**Storage:** Store and use in well ventilated area between 70-80F. Avoid excessive temperatures, low or high. Avoid moisture. Containers should be sealed tightly to prevent contamination from foreign materials.

## Section 8 – Exposure Controls & Personal Protection

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**Clothing:** Gloves, coveralls, apron, boots as necessary to prevent skin contact.  
**Eyes:** Chemical goggles; also wear face shield if splashing hazard exists.  
**Respiration:** Approved organic vapor mist respirator as necessary.  
**Ventilation:** Use local exhaust to control vapors/mists.

## Section 9 – Physical & Chemical Properties

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**Color:** Colorless  
**Form:** Liquid  
**Odor:** Polyol  
**Odor Intensity:** Mild  
**Specific Gravity:** 1.01  
**Boiling Pt:** Not Available  
**Freezing Pt:** Not Available  
**Solubility:** Partial

## Section 10 – Stability & Reactivity

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**Stability:** Stable  
**Conditions to Avoid:** Exposure to moisture and temperatures above 130F  
**Incompatibility:** Moisture, acids, and strong oxidizers

## Section 11 – Toxicological Information

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No applicable data for this section.

## Section 12 – Ecological Information

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No applicable data for this section.

## Section 13 – Disposal Information

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**Waste Disposal:** Dispose of in compliance with federal, state, or local environmental control regulations. Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.  
**Container Disposal:** Steel drums must be emptied (as defined by RCRA, Section 261.7 or state regulations that may be more stringent) and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer, or an approved landfill. Drums destined for a scrap dealer or landfill must be punctured or crushed to prevent reuse.

## Section 14 - Transportation Information

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**Section 15 - Regulatory Information**

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**CERCLA:** No  
**SARA Title III, Section 313:** Not Listed  
**Section 311/312:** N/A  
**Section 313:** N/A  
**Hazardous Rating:** Health 2                      Fire 1                      Reactivity 1

**Section 16 - Other Information**

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No Data Available.

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To the best of our knowledge, the information contained herein is accurate. However Noble 3D Printers, LLC, does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be handled with care. Although we have described herein all of the hazards to which we are currently aware, we cannot guarantee that these are the only hazards which exist. While the descriptions, designs, data, and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Further, you expressly understand and agree that the descriptions, designs, data, and information furnished by Noble 3D Printers, LLC hereunder are given gratis and Noble 3D Printers, LLC, assumes no obligation or liability for the description, designs, data, and information given or results obtained, all such being given and accepted at your risk.

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REVISION 1.0  
10/21/2014

# NOBLE 3D PRINTERS, LLC

## Material Safety Data Sheets

NOBLE 3D PRINTERS, LLC  
6005 ENCHANTED PEAK AVE.  
LAS VEGAS, NV 89110  
1-855-4-NOBLE-1  
(1-855-466-2531)

**Emergency Telephone: Chemtrec 1-800-424-9300**

### Section 1 – Product Information

8.5 ACB8 D5 FH B

**Common Chemical Name:** Aliphatic Diisocyanate Prepolymer

**Synonyms:** HMDI

**Chemical Family:** Aliphatic Isocyanate

**Molecular Weight:** N/A

### Section 2 - Ingredients

Chemical:	CAS	Amount
Dicyclohexylmethane-4,4' Diisocyanate Prepolymer	Proprietary	<70%
1,6 Hexamethylene based Polyisocyanate	Proprietary	10%-20%

All products are not listed as Carcinogen in NTP, IARC, or OSHA 1910(z)

### Section 3- Hazardous Identification

<b>Color:</b>	Translucent Clear
<b>Form/Appearance:</b>	Liquid
<b>Odor:</b>	Slightly Musty
<b>Odor Intensity:</b>	Mild

#### Nature of Hazard

**Emergency Overview:** May cause skin, eye, and respiratory tract irritation. Harmful if inhaled; May cause allergic respiratory reaction; May cause lung damage; toxic gases/fumes are given off during burning or thermal decomposition.

**Eye Contact:** May cause irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor may cause irritation with symptoms of burning and tearing.

**Skin Contact:** Can cause skin irritation and may cause allergic skin reaction. It is also a skin sensitizer. May cause irritation with symptoms of reddening, itching, and swelling. Persons previously sensitized can experience allergic reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove. Skin contact may aggravate an existing dermatitis condition.

**Acute Inhalation:** MDI vapors or mist at concentrations above the TLV can irritate (burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) causing running nose, sore throat, coughing, chest discomfort, shortness of breath, and reduced lung function. Persons with preexisting, non specific bronchial hyperreactivity can respond to concentrations below the exposure limits with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limit may lead to bronchitis, bronchial spasm, and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

**Chronic Inhalation:** As a result of previous repeated overexposures or a single large dose, certain individuals can 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 and individual can experience these symptoms upon exposure to dust, cold air, or other irritants. Sensitization can be temporary or permanent.

**Ingestion:** May cause irritation. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Neither HMDI nor polymeric MDI are listed by the NTP, IARC or regulated by OSHA as carcinogens.

#### Section 4 – First Aid

**Eye:** Holding eyelids open, flush with large amounts of clean water for 15 minutes. If irritation persists, get medical attention.

**Skin:** Wash with soap and water. Get medical attention if irritation develops or persists. Wash clothing before reuse.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. Asthmatic type symptoms may develop and may be immediate or delayed up to several hours. Extreme asthmatic reactions can be life threatening. Treatment is essentially symptomatic. Seek medical attention.

**Ingestion:** Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of this compound.

**Notes to Physician:** Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic steroid preparation frequently. Workplace vapors have produced reversible cornea epithelial edema impairing vision. Skin: This compound is a known skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burns. If burned, treat as thermal burn. 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. Treatment is essentially symptomatic. An individual having a skin or pulmonary sensitization reaction to this material should be removed from exposure to any isocyanate.

#### Section 5 – Fire Fighting Measures

**Extinguishing Media:** Water spray, foam, carbon dioxide, or dry chemical

**Fire Fighting Instructions:** Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Use water spray to cool fire exposed surfaces and to protect personnel. Wear structural fire fighting gear. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion. At temperatures greater than 400 F polymeric MDI can polymerize and decompose which can cause pressure build-up in closed containers.

**Flash Point:** 392 F

**Autoignition Temp:** N/A

#### Section 6 – Accidental Release Measures

**General:** Spills should be contained, ventilated, solidified, and placed in suitable containers for disposal at a licensed facility.

**Waste Disposal:** Incinerate or bury in a licensed facility. Do not discharge into waterways or sewer systems without proper authority.

#### Section 7 – Handling and Storage

**General:** Avoid breathing mist or vapors and repeated or prolonged exposure with skin. Avoid eye contact. Do not drink.

**Storage:** Store and use in well ventilated area between 70-80F. Avoid excessive temperatures, low or high. Avoid moisture.

#### Section 8 – Exposure Controls & Personal Protection

**Clothing:** Prevent skin contact. Gloves, coveralls, apron, boots as necessary to prevent skin contact.

**Eyes:** Chemical goggles; also wear face shield if splashing hazard exists.

**Respiration:** Atomizing of product not recommended. Approved organic vapor mist respirator as necessary.

**Ventilation:** Use local exhaust to control vapors/mists.

#### Section 9 – Physical & Chemical Properties

**Color:** Clear liquid

**Form:** Liquid

**Odor:** Slightly musty odor

**Odor Intensity:** Mild

**Specific Gravity:** 1.05

**Boiling Pt:** Not Available  
**Freezing Pt:** Not Available  
**Solubility:** Partial

### Section 10 – Stability & Reactivity

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**Stability:** Stable  
**Conditions to Avoid:** Contact with moisture and exposure to temperatures below 70F and above 350F  
**Incompatibility:** Moisture, amines, strong bases, alcohols.  
**Hazardous Polymerization:** Temperatures above 350 F and fire.

### Section 11 – Toxicological Information

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**Acute Toxicity:**  
**Oral:** Greater than 11,000 mg/kg (rat)  
**Dermal:** LD50: Greater than 10,000 mg/kg (rabbit)  
**Inhalation:** 4 hour LC50 for polymeric MDI in rats 434 mg/m<sup>3</sup>, 510 mg/m<sup>3</sup> 1 hour guinea pig.  
**Eye:** Slight irritation (rabbit)  
**Skin:** Slight to moderate irritation (rabbit) 24 hours  
**Sensitization:** Has been shown to produce dermal sensitization in laboratory animals. Evidence of respiratory sensitization has also been observed in guinea pigs. In addition, there is some evidence suggestive of cross-sensitization between different types of diisocyanates.

### Section 12 – Ecological Information

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**Ecological Data for Dicyclohexylmethane-4,4' Diisocyanate**  
**Biodegradation**  
Aerobic, 0% Exposure time: 28 days  
**Theoretical Biological Oxygen Demand**  
2,195 mg/g  
**Acute and Prolonged Toxicity to Fish**  
LC50: 1.2 mg/l (zebra fish, 96 hours)  
**Acute Toxicity to Aquatic Invertebrates**  
EC0:>8.3mg/l (water flea, 48 hours)  
**Toxicity to Aquatic Plants**  
EC50:>5 mg/l, End Point: growth (green algae, 72 hours)  
**Toxicity to Microorganisms**  
EC50: 19mg/l, (activated sludge microorganisms, 3 hours)

### Section 13 – Disposal Information

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**Waste Disposal:** Dispose of in accordance with applicable federal, state, and local regulations. Incineration is the preferred method.  
**Container Disposal:** Steel drums must be emptied (as defined by RCRA, Section 261.7 or state regulations that may be more stringent) and can be sent to a licensed drum reconditioner for reuse, a scrap metal dealer, or an approved landfill. If containers or drums are to be disposed, ensure all product residues are removed prior to disposal. Drums destined for a scrap dealer or landfill must be punctured or crushed to prevent reuse. Do not heat or cut empty containers with electric or gas torch. Gases may be highly toxic.

### Section 14 - Transportation Information

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**Technical Shipping Name:** Other regulated substances, liquid, n.o.s. (contains Dicyclohexylmethane-4,4'Diisocyanate)  
**Hazardous Class or Division:** 9  
**UN/NA Number:** NA 3080  
**Packing Group:** III  
**Hazardous Substance:** Dicyclohexylmethane-4,4' Diisocyanate  
**DOT Product RQ lbs:** 11,111 lbs  
**Hazard label:** Class 9  
**Hazard Placard:** Class 9

\*\*\*\*When in individual containers of less than the product RQ (793 gallons), this material ships as NON-REGULATED\*\*\*\*

**IMO / IMDG Code (Ocean)**

Hazardous Class Division Number: Non Regulated

**ICAO / IATA (Air)**

Hazardous Class Division Number: Non Regulated

**Section 15 - Regulatory Information**

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This product is hazardous under the criteria of the Federal OSHA Hazardous Communication Standard 29 CFR 1910.1200

<b>CERCLA:</b>	Reportable Quantity: Over 5,000 lbs
<b>SARA Title III, Section 302:</b>	Not Listed
<b>Section 311/312:</b>	Acute Heath Hazard. Chronic Heath Hazard
<b>Section 313:</b>	Dicyclohexylmethane-4,4' Diisocyanate
<b>Hazardous Rating: Health 3</b>	Fire 1                      Reactivity 1

**Section 16 - Other Information**

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No Data Available.

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