

# SAFETY DATA SHEET



## 1. Identification

**Covestro LLC**  
**1 Covestro Circle**  
**Pittsburgh, PA 15205**  
**USA**

### TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300  
INTERNATIONAL: (703) 527-3887

### NON-TRANSPORTATION

Emergency Phone: Call Chemtrec  
Information Phone: (844) 646-0545

**Product Name:** DESMODUR N 75A BA  
**Material Number:** 84576239  
**Chemical Family:** Aliphatic Polyisocyanate in Organic Solvent  
**Use:** Raw material for coatings, adhesives, sealants, or elastomers in industrial applications  
**Restrictions on use:** Do-It-Yourself Applications, Medical applications

## 2. Hazards Identification

### GHS Classification

Flammable liquids: Category 3  
Acute toxicity (Inhalation): Category 4  
Skin sensitisation: Category 1  
Specific target organ toxicity - single exposure: Category 3 (Respiratory system, Central nervous system)

### GHS Label Elements

Hazard pictograms:



Signal word: Warning

Hazard statements: Flammable liquid and vapour.  
May cause an allergic skin reaction.  
Harmful if inhaled.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.

Precautionary statements: **Prevention:**  
Keep away from heat, sparks, open flames, and hot surfaces. - No smoking  
Keep container tightly closed.

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Ground/bond container and receiving equipment.  
Use explosion-proof electrical, ventilating and lighting equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing dust, mist, gas, vapors or spray.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing must not be allowed out of the workplace.  
Wear permeation resistant protective gloves and clothing. Wear eye and face protection.

**Response:**

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

Call a doctor or emergency medical facility (i.e. 911) if you feel unwell.

If skin irritation or rash occurs: Get medical attention.

Wash contaminated clothing before reuse.

In case of fire: Use dry chemical, carbon dioxide (CO<sub>2</sub>), foam, or water spray (for large fires) to extinguish.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Store locked up.

**Disposal:**

Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

### 3. Composition/Information on Ingredients

#### Hazardous Components

Residual diisocyanate monomer content: < 0.50%, During the following six months, especially if stored at temperatures near the top of the recommended storage temperature range, HDI monomer content may rise to a maximum of: 0.70%

<b>Concentration</b>	<b>Components</b>	<b>CAS-No.</b>
60 - 80%	Homopolymer of Hexamethylene Diisocyanate	28182-81-2
15 - 40%	n-Butyl Acetate	123-86-4
<0.5%	Hexamethylene-1,6-Diisocyanate	822-06-0

The specific chemical identity and/or exact percentage of component(s) have been withheld as a trade secret.

### 4. First Aid Measures

#### Most Important Symptom(s)/Effect(s)

**Acute:** Isocyanate vapors or mist at concentrations above the exposure limits or guidelines can irritate

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(burning sensation) the mucous membranes in the respiratory tract (nose, throat, lungs) with symptoms of runny nose, sore throat, coughing, chest discomfort, shortness of breath and reduced lung function (breathing difficulty). Persons with a preexisting, nonspecific bronchial hyperreactivity can respond to concentrations below the exposure limits or guidelines with similar symptoms as well as asthma attack or asthma-like symptoms. Exposure well above the exposure limits or guidelines may lead to bronchitis, bronchial spasm and pulmonary edema (fluid in lungs). Chemical or hypersensitivity pneumonitis, with flu-like symptoms (e.g. fever, chills), has also been reported. These symptoms can be delayed up to several hours after exposure. These effects are usually reversible.

May cause skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

Inhalation of the solvents may cause central nervous system depression with symptoms of nausea, lightheadedness, drowsiness, dizziness and loss of co-ordination.

**Delayed:** Symptoms affecting the respiratory tract can also occur several hours after overexposure.

### **Eye Contact**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Use lukewarm water if possible. Use fingers to ensure that eyelids are separated and that the eye is being irrigated. Then remove contact lenses, if easily removable, and continue eye irrigation for not less than 15 minutes. Get medical attention if irritation develops.

### **Skin Contact**

If direct skin contact with isocyanates occurs, immediately remove contaminated clothing and shoes. Wipe off the isocyanate product from the skin using dry towels or other similar absorbent fabric. If readily available, apply a polyglycol-based cleanser (e.g. SKC, Inc. (SKC) D-TAM™ Skin Cleanser) or corn oil. Wash with soap and warm water and pat dry. If a polyglycol-based cleanser is not available, wash with soap and warm water for 15 minutes. If available, use a wipe test pad to verify decontamination is complete (e.g. SKC SWYPE™). Get medical attention if irritation develops. Discard or wash contaminated clothing before reuse.

### **Inhalation**

Move to an area free from further exposure. Extreme asthmatic reactions that may occur in sensitized persons can be life threatening. Get medical attention immediately. Administer oxygen or artificial respiration as needed. Asthmatic symptoms may develop and may be immediate or delayed up to several hours.

### **Ingestion**

Do NOT induce vomiting. Wash mouth out with water. Do not give anything by mouth to an unconscious person. Get medical attention.

### **Notes to Physician**

Eyes: Stain for evidence of corneal injury. If cornea is burned, instill antibiotic/steroid preparation as needed. Workplace vapors could produce reversible corneal epithelial edema impairing vision. Skin: This compound is a skin sensitizer. Treat symptomatically as for contact dermatitis or thermal burn. Ingestion: Treat symptomatically. There is no specific antidote. Inducing vomiting is contraindicated because of the irritating nature of the compound. Inhalation: Treatment is essentially symptomatic. An individual having a dermal or pulmonary sensitization reaction to this material should be removed from further exposure to any diisocyanate.

## 5. Firefighting Measures

**Suitable Extinguishing Media:** Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam, water spray for large fires.

**Unsuitable Extinguishing Media:** High volume water jet

### Fire Fighting Procedure

Firefighters should wear NFPA compliant structural firefighting protective equipment, including self-contained breathing apparatus and NFPA compliant helmet, hood, boots and gloves. Avoid contact with product. Decontaminate equipment and protective clothing prior to reuse. During a fire, isocyanate vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion.

### Hazardous Decomposition Products

By Fire and High Heat: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

### Unusual Fire/Explosion Hazards

Closed container may forcibly rupture under extreme heat or when contents are contaminated with water (CO<sub>2</sub> formed). Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot diisocyanate can be vigorous. Flammable Liquid. Vapors may spread long distances and ignite. Vapors or mist may be a fire and explosion hazard when exposed to high temperature or ignition. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback. Vapors or fumes may form explosive mixture with air.

## 6. Accidental Release Measures

### Spill and Leak Procedures

Implement site emergency response plan. Evacuate non-emergency personnel. The magnitude of the evacuation depends upon the quantity released, site conditions, and the ambient temperature. Isolate the area and prevent access of unauthorized personnel. Notify management. Call CHEMTREC at 1-800-424-9300 for assistance and advice.

Wear necessary personal protective equipment (PPE) as specified in the SDS or the site emergency response plan. Ventilate and remove ignition sources. Control the source of the leak. Contain the released material by damming, diking, retaining, or diverting into an appropriate containment area. Absorb or pump off as much of the spilled material as possible. When using absorbent, completely cover the spill area with suitable absorbent material (e.g., vermiculite, kitty litter, Oil-Dri®, etc.). Allow for the absorbent material to absorb the spilled liquid. Shovel the absorbent material into an approved metal container (i.e., 55-gallon salvage drum). Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all liquid has been removed from the surface. For spills involving a solid product, remove mechanically (sweep up, vacuum, shovel etc.) and collect and place into an approved metal container.

Decontaminate the spill surface area using a neutralization solution (see list of solutions on the SDS); scrubbing the surface with a broom or brush helps the decontamination solution to penetrate into porous surfaces. Wait at least 15 minutes after first application of the neutralization solution. Cover the area with absorbent material and shovel this into an approved metal container. Residual surface contamination can be checked using a wipe test pad to verify decontamination is complete (e.g. SKC Surface Swype™). If the wipe test pad demonstrates that isocyanate remains on the surface (red color on pad), repeat applications of neutralization solution, with scrubbing, followed by absorbent until the surface is decontaminated (no color

change on wipe pad). Apply lid loosely to metal waste container (do not tighten the lid because carbon dioxide gas and heat can be generated from the neutralization process). With the lid still loosely in place, move the container to an isolated, well-ventilated area to allow release of carbon dioxide. After 72 hours, seal the container, and properly dispose of the waste material and any contaminated equipment (i.e., broom or brush) in accordance with existing federal, state and local regulations.

#### **Additional Spill Procedures/Neutralization**

Products or product mixtures that have been shown to be effective neutralization solutions for decontaminating surfaces, tools, or equipment that have been in contact with an isocyanate include, but are not limited to:

- SKC, Inc. (SKC): 1-800-752-8472
  - o Isocyanate Decontamination Solution
- Spartan Chemical Company: 1-800-537-8990
  - o Spartan® ShineLine Emulsifier Plus (stripping solution)
  - o Spartan® SC-200 Heavy Duty Cleaner
- ZEP Commercial Heavy Duty Floor Stripper
- A mixture of 90% water, 10% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10)
- A mixture of 75% water, 20% non-ionic surfactant, and 5% n-propanol
- A mixture of 80% water, 10% non-ionic surfactant, 5% isopropanol, 5% ammonium hydroxide (household ammonia)

For more information about neutralization solutions, please refer to spill cleanup and neutralization information available on Covestro's Product Safety First website. [www.productsafetyfirst.covestro.com](http://www.productsafetyfirst.covestro.com)  
Note: Always wear proper PPE when cleaning up an isocyanate spill or when decontaminating surfaces, tools, or equipment using a neutralization solution. It may take two or more applications of the neutralization solution to decontaminate the surface. Residual surface contamination can be checked using a surface wipe method such as the SKC Swype™ pad.

## **7. Handling and Storage**

### **Handling/Storage Precautions**

Do not breathe vapors, mists, or dusts. Use adequate ventilation to keep airborne isocyanate levels below the exposure limits. Wear respiratory protection if material is heated, sprayed, used in a confined space, or if the exposure limit is exceeded. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Individuals with lung or breathing problems or prior allergic reactions to isocyanates must not be exposed to vapor or spray mist. Avoid contact with skin and eyes. Wear appropriate eye and skin protection. Wash thoroughly after handling. Do not breathe smoke and gases created by overheating or burning this material. Decomposition products can be highly toxic and irritating. Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Ground and bond containers and equipment before transferring to avoid static sparks.

### **Storage Period:**

9 Months @ 25 °C (77 °F): after receipt of material by customer

### **Storage Temperature**

**Minimum:** 5 °C (41 °F)

**Maximum:** 25 °C (77 °F)

### **Storage Conditions**

Store separate from food products.

Employee education and training in the safe use and handling of this product are required under the OSHA

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Material Number: 84576239

Hazard Communication Standard 29 CFR 1910.1200.

**Substances to Avoid**

Water, Amines, Strong bases, Alcohols, Copper alloys

**8. Exposure Controls/Personal Protection**

The recommendations in this section should not be a substitute for a personal protective equipment (PPE) assessment performed by the employer as required by 29 CFR 1910 Subpart I.

**Exposure Limits**

**Homopolymer of Hexamethylene Diisocyanate (28182-81-2)**

Covestro Exposure Limit

Time weighted average 0.5 mg/m<sup>3</sup>

Covestro Exposure Limit

Short Term Exposure Limit (STEL): 1.0 mg/m<sup>3</sup> (15-min)

**n-Butyl Acetate (123-86-4)**

US. ACGIH Threshold Limit Values, as amended

Time weighted average 50 ppm

US. ACGIH Threshold Limit Values, as amended

Short term exposure limit 150 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended

Permissible exposure limit 150 ppm, 710 mg/m<sup>3</sup>

**Hexamethylene-1,6-Diisocyanate (822-06-0)**

US. ACGIH Threshold Limit Values, as amended

Time weighted average 0.005 ppm

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

**Industrial Hygiene/Ventilation Measures**

Good industrial hygiene practice dictates that worker protection should be achieved through engineering controls, such as ventilation, whenever feasible. When such controls are not feasible to achieve full protection, the use of respirators and other personal protective equipment is mandated. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent emissions into the workplace. If oven off-gases are not vented properly (i.e. they are released into the work area), it is possible to be exposed to airborne monomeric HDI.

**Respiratory Protection**

A respirator that is recommended or approved for use in isocyanate-containing environments (air-purifying or fresh air-supplied) may be necessary for spray applications or other situations such as high temperature use which may produce inhalation exposures. A supplied-air respirator (either positive pressure or continuous flow-type) is recommended. Before an air-purifying respirator can be used, air monitoring must be performed to measure airborne concentrations of HDI monomer and HDI polyisocyanate. Specific conditions under which air-purifying respirators can be used are outlined in the following sections. Observe OSHA regulations for respirator use (29 CFR 1910.134). SPRAY APPLICATION: A. Good industrial

hygiene practice dictates that when isocyanate-based coatings are spray applied, some form of respiratory protection should be worn. During the spray application of coatings containing this product the use of a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exists: -the airborne isocyanate concentrations are not known; or -the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or -the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or -operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing spray paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -The airborne isocyanate monomer concentrations are known to be below 0.05 ppm averaged over eight (8) hours (10 times 8 hour TWA exposure limit); and -the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits). In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup. NON-SPRAY OPERATIONS: A. During non-spray operations such as mixing, batch-making, brush or roller application, etc., at elevated temperatures (for example, heating of material or application to a hot substrate), it is possible to be exposed to airborne isocyanate vapors. Therefore, when the coatings system will be applied in a non-spray manner, a supplied-air (either positive pressure or continuous flow-type) respirator is mandatory when ONE OR MORE of the following conditions exists: - the airborne isocyanate concentrations are not known; or - the airborne isocyanate monomer concentrations exceed 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); or - the airborne polyisocyanate (polymeric, oligomeric) concentrations exceed 5 mg/m<sup>3</sup> averaged over 8 hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits); or - operations are performed in a confined space (See OSHA Confined Space Standard, 29 CFR 1910.146). A properly fitted air-purifying (combination organic vapor and particulate) respirator, proven by test to be effective in isocyanate-containing paint environments, and used in accordance with all recommendations made by the manufacturer, can be used when ALL of the following conditions are met: -the airborne concentrations of the isocyanate monomer are below 0.05 ppm averaged over eight (8) hours (10 times the 8 hour TWA exposure limit); and - the airborne polyisocyanate (polymeric, oligomeric) concentrations are known to be below 5 mg/m<sup>3</sup> averaged over eight (8) hours or 10 mg/m<sup>3</sup> averaged over 15 minutes (10 times the 8 hour TWA or the 15 minute STEL exposure limits) and - a NIOSH-certified End of Service Life Indicator or a change schedule based upon objective information or data is used to ensure that cartridges are replaced before the end of their service life. In addition, prefilters should be changed whenever breathing resistance increases due to particulate buildup.

#### **Hand Protection**

Ensure gloves remain in good condition during use and replace if any deterioration is observed.

Gloves should be worn. For protection from isocyanates, nitrile rubber, butyl rubber, or neoprene gloves are recommended. For protection from solvents in this product, nitrile rubber gloves may be appropriate, but a personal protective equipment (PPE) assessment should be performed by the employer.

#### **Eye Protection**

When handling liquid product, chemical goggles should be worn., Chemical safety goggles in combination with a full face shield if a splash hazard exists.

#### **Skin Protection**

Avoid all skin contact. Depending on the conditions of use, cover as much of the exposed skin area as possible with appropriate clothing to prevent skin contact., Gloves, long sleeved shirts and pants.

#### **Medical Surveillance**

All applicants who are assigned to an isocyanate work area should undergo a pre-placement medical evaluation. A history of eczema or respiratory allergies such as hay fever, are possible reasons for medical exclusion from isocyanate areas. Applicants who have a history of adult asthma should be restricted from

work with isocyanates. Applicants with a history of prior isocyanate sensitization should be excluded from further work with isocyanates. A comprehensive annual medical surveillance program should be instituted for all employees who are potentially exposed to diisocyanates. Once a worker has been diagnosed as sensitized to any isocyanate, no further exposure can be permitted. Refer to the Covestro pamphlet (Medical Surveillance Program for Isocyanate Workers) for additional guidance.

#### **Additional Protective Measures**

Emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

### **9. Physical and Chemical Properties**

<b>State of Matter:</b>	liquid
<b>Color:</b>	Clear to yellow
<b>Odor:</b>	solvent-like
<b>Odor Threshold:</b>	No Data Available
<b>pH:</b>	No Data Available
<b>Boiling Point:</b>	ca. 125 °C (257 °F) @ 1,013 hPa
<b>Flash Point:</b>	ca. 35 °C (95 °F) (DIN 53213)
<b>Evaporation Rate:</b>	No Data Available
<b>Lower Explosion Limit:</b>	1.7 %(V) for the solvent
<b>Upper Explosion Limit:</b>	7.6 %(V) for the solvent
<b>Vapor Pressure:</b>	HDI Polyisocyanate: 9.3 X 10 <sup>-6</sup> @ 68 F (20 C) mmHg
<b>Vapor Density:</b>	No Data Available
<b>Density:</b>	ca. 1.07 g/cm <sup>3</sup> @ 20 °C (68 °F) (DIN 53217)
<b>Relative Vapor Density:</b>	No Data Available
<b>Specific Gravity:</b>	1.06 @ 20 °C (68 °F)
<b>Solubility in Water:</b>	Insoluble - Reacts slowly with water to liberate CO <sub>2</sub> gas
<b>Partition Coefficient: n-octanol/water:</b>	No Data Available
<b>Auto-ignition Temperature:</b>	ca. 400 °C (752 °F)
<b>Decomposition Temperature:</b>	No Data Available
<b>Unblocking Temperature:</b>	No Data Available
<b>Dynamic Viscosity:</b>	ca. 160 mPa.s @ 23 °C (73.4 °F) (DIN EN ISO 3219/A.3)
<b>Kinematic Viscosity:</b>	No Data Available
<b>Bulk Density:</b>	1,060.46 kg/m <sup>3</sup>
<b>Molecular Weight:</b>	500 Approximate Value, For the polyisocyanate
<b>Pour point:</b>	< -60 °C (-76 °F) (ISO 3016)
<b>Self Ignition:</b>	not applicable

### **10. Stability and Reactivity**

#### **Hazardous Reactions**

Contact with moisture, other materials that react with isocyanates, or temperatures above 350 F (177 C), may cause polymerization, Moisture (water and high humidity) or high heat (temperatures greater than 350 F (177C)) can cause pressure build-up with possible explosive rupture.

#### **Stability**

Stable under normal conditions of use and storage.

#### **Materials to Avoid**

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Material Number: 84576239



Water, Amines, Strong bases, Alcohols, Copper alloys

### Conditions to Avoid

Heat, flames and sparks.

### Hazardous Decomposition Products

By Fire and High Heat: Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

## 11. Toxicological Information

**Likely Routes of Exposure:** Skin Contact  
Inhalation  
Eye Contact  
Ingestion

### Health Effects and Symptoms

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

May cause skin irritation with symptoms of reddening, itching, and swelling. Can cause sensitization. Persons previously sensitized can experience allergic skin reaction with symptoms of reddening, itching, swelling, and rash. Cured material is difficult to remove.

May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling. May cause temporary corneal injury. Vapor or aerosol may cause irritation with symptoms of burning and tearing.

May cause irritation of the digestive tract; Symptoms may include abdominal pain, nausea, vomiting, and diarrhea.

.Inhalation of the solvents may cause central nervous system depression with symptoms of nausea, lightheadedness, drowsiness, dizziness and loss of co-ordination.

**Chronic:** As a result of previous repeated overexposures or a single large dose, certain individuals may develop sensitization to isocyanates (asthma or asthma-like symptoms) that may cause them to react to a later exposure to isocyanates at levels well below the exposure limits or guidelines. These symptoms, which can include chest tightness, wheezing, cough, shortness of breath or asthmatic attack, could be immediate or delayed up to several hours after exposure. Extreme asthmatic reactions can be life threatening. 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 be permanent.

Prolonged contact with skin can cause reddening, swelling, rash, and, in some cases, skin sensitization. Animal tests and other research indicate that skin contact with isocyanates can play a role in causing isocyanate sensitization and respiratory reaction. This data reinforces the need to prevent direct skin contact with isocyanates.

Prolonged vapor contact with the eyes may cause conjunctivitis.

.Reports have associated repeated and prolonged occupational overexposure to solvents with permanent

brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling solvents may be harmful or fatal.

**Delayed:** Symptoms affecting the respiratory tract can also occur several hours after overexposure.

#### **Toxicity Data for: DESMODUR N 75A BA**

Data on the product is not available.

Please find the data available for the components.

#### **Acute Inhalation Toxicity**

Acute toxicity estimate: 2 mg/l, 4 h, dust/mist (Calculation method)

#### **Toxicity Data for: Homopolymer of Hexamethylene Diisocyanate**

#### **Toxicity Note**

Data is based on a similar product, including residual monomer.

#### **Acute Oral Toxicity**

LD50: > 5,000 mg/kg (rat, female) (OECD Test Guideline 423)

#### **Acute Inhalation Toxicity**

LC50: 0.554 mg/l, 4 h, dust/mist (rat)

The test atmosphere generated in the animal study is not representative of workplace environments, how the substance is placed on the market, and how it can reasonably be expected to be used. Therefore the result cannot be directly applied for the purpose of assessing hazard. Based on expert judgment and the weight of the evidence, a modified classification for acute inhalation toxicity is justified.

#### **Acute Dermal Toxicity**

LD50: > 2,000 mg/kg (rat, female) (OECD Test Guideline 402)

#### **Skin Irritation**

rabbit, slight irritant

#### **Eye Irritation**

rabbit, slight irritant

#### **Sensitization**

Skin sensitisation according to Magnusson/Kligmann (maximizing test):: positive (Guinea pig, OECD Test Guideline 406)

#### **Repeated Dose Toxicity**

Subchronic inhalation toxicity, rat:

Test concentration - 0,4 ; 3,4 and 21,0 mg aerosol/m<sup>3</sup>exposure time - 13 weeks(6 hours a day, 5 days a week)3,4 mg/m<sup>3</sup> was tolerated without damage (NOEL),21,0 mg/m<sup>3</sup> caused increase of lung weight.No evidence of histopathological changes in the upper and central respiratory passages.Unspecific changes in the lower respiratory tract; these are attributed to the product's primary irritation potential.Evidence of damage to organs other than the organs of respiration was not found.

#### **Mutagenicity**

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): No indication of mutagenic effects.

Genetic Toxicity in Vivo:

Micronucleus test: negative (Mouse)  
negative

**Toxicity Data for: n-Butyl Acetate**

**Acute Oral Toxicity**

LD50: 12,789 mg/kg (rat, male) (OECD Test Guideline 423)

LD50: 10,760 mg/kg (rat, female) (OECD Test Guideline 423)

**Acute Inhalation Toxicity**

LC50: > 21 mg/l, 4 h, vapour (rat) (OECD Test Guideline 403)

**Acute Dermal Toxicity**

LD50: 14,112 mg/kg (rabbit, male/female) (OECD Test Guideline 402)  
assuming density = 0.882 g/cm<sup>3</sup>

**Skin Irritation**

Human experience, Non-irritating

**Eye Irritation**

rabbit, OECD Test Guideline 405, slight irritant

**Sensitization**

dermal: non-sensitizer (Guinea pig, Maximization Test)

dermal: non-sensitizer (Human, Magnusson/Kligmann (Maximization Test))

**Repeated Dose Toxicity**

13 Weeks, inhalation: NOAEL: 500 ppm, (Rat, )

Chronic exposure damages the brain and the central nervous system.

13 weeks, inhalation (vapour): NOAEL: 500, (rat, male/female, 6 hours a day, 5 days a week)

**Mutagenicity**

Genetic Toxicity in Vitro:

Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Cytogenetic assay: negative (other mammalian cell line, Metabolic Activation: without)

Chromosome aberration test: negative (Chinese hamster lung cells, Metabolic Activation: without)

Genetic Toxicity in Vivo:

In vivo micronucleus test: negative (Mouse, male/female, Oral)

Studies of a comparable product.

negative

**Toxicity to Reproduction/Fertility**

Two-generation study, Inhalative, daily, (rat, male/female) NOAEL (parental): 750 ppm, NOAEL (F1): 750 ppm, NOAEL (F2): 750 ppm

**Developmental Toxicity/Teratogenicity**

Rat, Female, inhalation, gestation days 1-16, 7 hrs/day, NOAEL (teratogenicity): 1,500 ppm, No Teratogenic effects observed at doses tested. rabbit, female, inhalation, gestation days 1-19, 7 hrs/day, NOAEL (teratogenicity): 1500 ppm, No Teratogenic effects observed at doses tested. Rat, Female, inhalation, 7 hrs/day, NOAEL (teratogenicity): 1,500 ppm, NOAEL (maternal): 1500 ppm

**Other Relevant Toxicity Information**

May cause drowsiness or dizziness.

**Toxicity Data for: Hexamethylene-1,6-Diisocyanate****Acute Oral Toxicity**

LD50: 746 mg/kg (rat, male) (OECD Test Guideline 401)

LD50: 959 mg/kg (rat, male) (OECD Test Guideline 401)

**Acute Inhalation Toxicity**

LC50: 0.124 mg/l, 4 h, vapour (rat, male/female) (OECD Test Guideline 403)

**Acute Dermal Toxicity**

LD50: > 7,000 mg/kg (rat, male/female) (OECD Test Guideline 402)

**Skin Irritation**

rabbit, OECD Test Guideline 404, Corrosive

**Eye Irritation**

rabbit, OECD Test Guideline 405, Corrosive

**Sensitization**

dermal: sensitizer (Guinea pig, Maximisation Test)

dermal: sensitizer (Human, Case Report)

Respiratory sensitization: sensitizer (Guinea pig)

**Repeated Dose Toxicity**

2 years, inhalation: NOEL: 0.005 ppm, (rat, Male/Female, 6 hrs/day 5 days/week)

Irritation to lungs and nasal cavity.

**Mutagenicity**

Genetic Toxicity in Vitro:

Salmonella/microsome test (Ames test): negative (Salmonella typhimurium, Metabolic Activation: with/without)

Point mutation in mammalian cells (HPRT test): negative (Metabolic Activation: with/without)

Genetic Toxicity in Vivo:

Micronucleus test: negative (Mouse, male/female, Inhalative)

negative

**Carcinogenicity**

rat, male/female, Inhalative, 2 yrs, 6 hours/day, 5 days/week Did not show carcinogenic effects in animal experiments.

**Toxicity to Reproduction/Fertility**

Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test, Inhalative, 6 hours/day 7 days/week, (rat, male/female) NOEL (F2): 0.3 ppm Fertility and developmental toxicity tests did not reveal any effect on reproduction.

**Developmental Toxicity/Teratogenicity**

rat, female, Inhalative, 6 hours/day (Exposure duration: day 0 - 19 of gestation), NOEL (teratogenicity):

0.3 ppm, NOEL (maternal): 0.005 ppm Did not show teratogenic effects in animal experiments.

### **Neurological Effects**

Rats exposed by inhalation, 6 hours/day, for approximately 3 weeks, to concentrations as high as 0.3 ppm showed no neurobehavioral effects or damage to nerve tissues.

### **Carcinogenicity:**

No carcinogenic substances as defined by IARC, NTP and/or OSHA

## **12. Ecological Information**

### **Ecological Data for: DESMODUR N 75A BA**

Data on the product is not available.

Please find the data available for the components.

### **Ecological Data for Homopolymer of Hexamethylene Diisocyanate**

#### **Biodegradation**

1 %, Exposure time: 28 d, i.e. not readily degradable

#### **Acute and Prolonged Toxicity to Fish**

LC50: > 100 mg/l (Danio rerio (zebra fish), 96 h)

#### **Acute Toxicity to Aquatic Invertebrates**

EC50: > 100 mg/l (Daphnia magna (Water flea), 48 h)

#### **Toxicity to Aquatic Plants**

ErC50: > 100 mg/l, (scenedesmus subspicatus, 72 h)

#### **Toxicity to Microorganisms**

EC50: > 100 mg/l, (activated sludge, 3 h)

#### **Additional Ecotoxicological Remarks**

Data is based on a similar product, including residual monomer.

### **Ecological Data for n-Butyl Acetate**

#### **Biodegradation**

aerobic, 98 %, Exposure time: 28 Days

#### **Biochemical Oxygen Demand (BOD)**

1,020 mg/g

#### **Chemical Oxygen Demand (COD)**

2,320 mg/g

#### **Theoretical Biological Oxygen Demand (ThBOD)**

2,207 mg/g

#### **Bioaccumulation**

ca. 4 - 14 BCF

#### **Acute and Prolonged Toxicity to Fish**

LC50: 18 mg/l (Fathead minnow (Pimephales promelas), 96 h)

LC50: 185 mg/l (Silverside Minnow (Menidia peninsulae), 96 h)

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**Acute Toxicity to Aquatic Invertebrates**

EC50: 72.8 mg/l (Water flea (Daphnia magna), 48 h)

EC50: 32 mg/l (brine shrimp (Artemia salina), 48 h)

**Toxicity to Aquatic Plants**

EC50: 670 mg/l, End Point: growth (Cryptomonad (Chilomonas paramecium), 48 h)

674.7 mg/l, End Point: growth (Green algae (Scenedesmus subspicatus), 72 h)

**Toxicity to Microorganisms**

EC50: 959 mg/l, (Pseudomonas putida, 18 h)

**Ecological Data for Hexamethylene-1,6-Diisocyanate****Biodegradation**

aerobic, 42 %, Exposure time: 28 d, i.e. not readily degradable

**Bioaccumulation**

value calculated, 57.6 BCF

An accumulation in aquatic organisms is not to be expected.

value calculated, 3.2 BCF

An accumulation in aquatic organisms is not to be expected. Studies of hydrolysis products.

**Acute and Prolonged Toxicity to Fish**

LC0: >= 82.8 mg/l (Danio rerio (zebra fish), 96 h)

**Acute Toxicity to Aquatic Invertebrates**

EC0: >= 89.1 mg/l (Daphnia magna (Water flea), 48 h)

**Toxicity to Aquatic Plants**

ErC50: > 77.4 mg/l, (Desmodemus subspicatus (Green algae), 72 h)

**Toxicity to Microorganisms**

EC50: 842 mg/l, (activated sludge, 3 h)

**13. Disposal Considerations****Waste Disposal Method**

Waste disposal should be in accordance with existing federal, state and local environmental control laws. The Covestro preferred method for disposal of unused product is incineration. Contact and follow the guidance of a licensed disposal facility to properly dispose of unused product or chemical waste.

**Empty Container Precautions**

Containers that are empty as defined by RCRA (40 CFR part 261.7), may retain product residue; observe all precautions for product. Do not grind, torch cut, weld or heat an empty container that once held an isocyanate-containing product; highly toxic vapors or gases are formed.

**Drums**

One method for disposing of empty drums is to contract with an approved drum re-conditioner. A state by state listing of drum re-conditioners can be obtained from the Reusable Industrial Packaging Association (RIPA) at [www.reusablepackaging.org](http://www.reusablepackaging.org).

If not sent to a re-conditioner, it is important that the company contacted to dispose of the drums be notified

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of the hazards associated with the isocyanate-containing product. Metal recycling firms may require that the drum be thoroughly decontaminated with a neutralizing agent prior to disposal. Contact Covestro LLC for the proper procedure to neutralize and remove product residue from the drum. If not recycled, empty drums should be crushed by mechanical means, such that reuse is impossible. Consult federal, state and local regulations, as well as a licensed waste disposal facility to determine proper disposition of crushed drums.

#### *Bulk Containers*

Some Covestro products are shipped in portable tanks referred to as Monotainers®. Covestro LLC owns these Monotainers® and assists the customer in their return to Covestro LLC when empty. Other Covestro products may be shipped in composite intermediate bulk containers, commonly referred to as totes. These containers are returned to the tote manufacturer, not Covestro, when empty. Instructions on returning these containers when empty are provided with each container.

Flexible intermediate bulk containers, commonly referred to as supersacks, should be shredded when empty in such a way that reuse is impossible.

#### *Other Containers*

For all other packaging (e.g., aluminum bullet sample containers, and 1- and 5-gallon pails), these containers are non-returnable and should not be reused for any other purpose. Remove any remaining product and store in an appropriate waste container for proper disposal. Consult federal, state and local regulations, as well as a licensed waste disposal facility to determine proper disposition of these empty containers.

### **14. Transportation Information**

#### **Land transport (DOT)**

**Proper Shipping Name:** Resin solution (contains N-Butyl Acetate, Hexamethylene-1,6-Diisocyanate)  
**Hazard Class or Division:** 3  
**UN/NA Number:** UN1866  
**Packaging Group:** III  
**Hazard Label(s):** FLAMMABLE LIQUID

#### **RSPA/DOT Regulated Components:**

n-Butyl Acetate  
Hexamethylene-1,6-Diisocyanate

**Reportable Quantity:** 9072 kg (20000 lb)

#### **Sea transport (IMDG)**

**Proper Shipping Name:** RESIN SOLUTION (contains N-Butyl Acetate, Hexamethylene-1,6-Diisocyanate)  
**Hazard Class or Division:** 3  
**UN number:** UN1866  
**Packaging Group:** III  
**Hazard Label(s):** FLAMMABLE LIQUIDS

#### **Air transport (ICAO/IATA)**

**Proper Shipping Name:** Resin solution (contains N-Butyl Acetate, Hexamethylene-1,6-Diisocyanate)  
**Hazard Class or Division:** 3  
**UN number:** UN1866  
**Packaging Group:** III

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Material Number: 84576239

Hazard Label(s):

FLAMMABLE LIQUIDS

## 15. Regulatory Information

### United States Federal Regulations

**US. Toxic Substances Control Act:** Listed on the Active Portion of the TSCA Inventory.

No substances are subject to TSCA 12(b) export notification requirements.

### **US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:**

n-Butyl Acetate Reportable quantity: 5000 lbs

### **SARA Section 311/312 Hazard Categories:**

Refer to hazard classification information in Section 2.

### **US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) Components:**

None

### **US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required Components:**

None

### **US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):**

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste., In its purchased form, this product meets the criteria of ignitability under 40 CFR 261.21(a), and, when discarded in that form, should be managed as a hazardous waste.

### **State Right-To-Know Information**

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the SDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

### **Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:**

<u>Concentration</u>	<u>Components</u>	<u>CAS-No.</u>
60 - 80%	Homopolymer of Hexamethylene Diisocyanate	28182-81-2
15 - 40%	n-Butyl Acetate	123-86-4
<0.5%	Hexamethylene-1,6-Diisocyanate	822-06-0

### **New Jersey Environmental Hazardous Substances List and/or New Jersey RTK Special Hazardous Substances Lists:**

<u>Concentration</u>	<u>Components</u>	<u>CAS-No.</u>
15 - 40%	n-Butyl Acetate	123-86-4
<0.5%	Hexamethylene-1,6-Diisocyanate	822-06-0

### **California Proposition 65 List:**

None.

Based on information provided by our suppliers, this product is considered "DRC Conflict Free" as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).



## 16. Other Information

The method of hazard communication for Covestro LLC is comprised of product labels and safety data sheets. Safety data sheets for all of our products and general product declarations are available for download at [www.productsafetyfirst.covestro.com](http://www.productsafetyfirst.covestro.com).

The handling of products containing reactive HDI polyisocyanate/prepolymer and/or monomeric HDI requires appropriate protective measures referred to in this SDS. These products are therefore recommended only for use in industrial or trade (commercial) applications. They are not suitable for use in Do-It-Yourself applications.

Contact: Product Safety Department  
Telephone: (412) 413-2835  
Version Date: 05/07/2021  
SDS Version: 3.5

Information contained in this SDS is believed to be accurate but is furnished without warranty, express or implied, including warranties of merchantability or fitness for a particular purpose. The information relates only to the specific material designated herein. Covestro LLC. assumes no legal responsibility for use of or reliance upon the information in this SDS and such information shall in no case be considered a part of our terms and conditions of sale. The user is responsible for determining whether the Covestro product is suitable for user's method of use or application. Covestro is not liable for any failure to observe the precautionary measures described in this SDS or for any misuse of the product.

|| Changes since the last version are highlighted in the margin. This version replaces all previous versions.