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: BAYHYDUR 401-70 MPA
Material Number: 86299666
Use: Raw material for coatings, adhesives, sealants, or elastomers in industrial applications
Restrictions on use: Do-It-Yourself Applications

2. Hazards Identification

GHS Classification
Flammable liquids: Category 3
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.
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.
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 (CO2), 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

Concentration	Components	CAS-No.
30 - 60%	Isophorone Diisocyanate Homopolymer	53880-05-0
15 - 40%	Propylene Glycol Monomethyl Ether Acetate	108-65-6
10 - 30%	Hydrophilic Aliphatic Polyisocyanate based on IPDI	191427-71-1
<0.35%	Isophorone Diisocyanate(IPDI)	4098-71-9

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 (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 (CO2), 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 (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), 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 (CO2 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
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:
6 Months: after receipt of material by customer

Storage Conditions
Store separate from food products. Avoid contact with moisture/water. Avoid extreme heat.

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

Propylene Glycol Monomethyl Ether Acetate (108-65-6**)**

Covestro Exposure Limit

Time weighted average 100 ppm

Covestro Exposure Limit

Short term exposure limit 150 ppm

Isophorone Diisocyanate(IPDI) (4098-71-9**)**

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 diisocyanate.

Respiratory Protection

At normal room temperatures airborne diisocyanate and solvent concentrations can exceed the ACGIH TLV-TWA: therefore, in inadequately ventilated environments and spray applications respiratory protection must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). The type of respiratory protection available includes (1) an atmosphere-supplying respirator such as a self-contained breathing apparatus (SCBA) or a supplied air respirator (SAR) in the positive pressure or continuous flow mode, or (2) an air-purifying respirator (APR). If an APR is selected then a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program. Further, if an APR is selected, the airborne diisocyanate concentration must be no greater than 10 times the TLV or PEL. An organic vapor (OV) cartridge is recommended for APR use in non-spray situations. For spray applications, a combination particulate/organic vapor (P95/OV) cartridge is recommended. If polyisocyanate concentrations exceed 10 mg/m3, an SAR is recommended.

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

Cover as much of the exposed skin area as possible with appropriate clothing., 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

State of Matter:	liquid
Color:	Colorless to light yellow
Odor:	solvent-like
Odor Threshold:	No Data Available
pH:	ca. 5.8 @ 20 °C (68 °F)
Boiling Point:	ca. 219 °C (426.2 °F) @ 1,013 hPa (OECD Test Guideline 103)
Flash Point:	ca. 49 °C (120.2 °F) (DIN EN ISO 13736)
Evaporation Rate:	No Data Available
Lower explosion limit:	No Data Available
Upper Explosion Limit:	No Data Available
Vapor Pressure:	Approximately 30 hPa @ 55 °C (131 °F) (OECD Test Guideline 104) Approximately 20 hPa @ 50 °C (122 °F) (OECD Test Guideline 104) Approximately 3 hPa @ 20 °C (68 °F) (OECD Test Guideline 104)
Vapor Density:	No Data Available
Density:	ca. 1.09 g/cm³ @ 20 °C (68 °F) (DIN 51757)
Relative Vapor Density:	No Data Available
Specific Gravity:	No Data Available
Solubility in Water:	No Data Available
Partition Coefficient: n-octanol/water:	No Data Available
Auto-ignition Temperature:	ca. 400 °C (752 °F) (DIN 51794)
Decomposition Temperature:	No Data Available
Dynamic Viscosity:	ca. 1,500 mPa.s @ 23 °C (73.4 °F) (OECD Test Guideline 114)
Kinematic Viscosity:	No Data Available
Pour point:	ca. -15 °C (5 °F) (ISO 3016)
Self Ignition:	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
Water, Amines, Strong bases, Alcohols, Copper alloys

Conditions to Avoid
Heat, flames and sparks.

Hazardous Decomposition Products
By Fire and High Heat: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke., Hydrogen cyanide, Isocyanate, Isocyanic Acid, Other undetermined compounds

11. Toxicological Information

Likely Routes of Exposure: Inhalation
Skin Contact
Eye Contact

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: BAYHYDUR 401-70 MPA

Data on the product is not available.

Please find the data available for the components.

Acute Oral Toxicity
Acute toxicity estimate: > 5,000 mg/kg (Calculation method)

Toxicity Data for: Isophorone Diisocyanate Homopolymer

Toxicity Note
Data is based on the product, including residual monomer.

Acute Oral Toxicity
LD50: > 14,000 mg/kg (rat) (OECD Test Guideline 423)

Acute Inhalation Toxicity
LC50: > 5 mg/l, 4 h, dust/mist (rat, male/female) (OECD Test Guideline 403)
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 test result cannot be directly applied for the purpose of assessing hazard.

Skin Irritation
rabbit, OECD Test Guideline 404, Exposure Time: 4 h, non-irritant

Eye Irritation
rabbit, OECD Test Guideline 405, slight irritant
Toxicological studies at the product containing solvent.

Sensitization
Skin sensitization (local lymph node assay (LLNA)):: positive (Mouse, OECD Test Guideline 429)
Toxicological studies at the product containing solvent.

Respiratory sensitization: non-sensitizer
No pulmonary sensitisation observed in animal tests.No pulmonary sensitisation potential was observed in guinea pigs after either intradermal or inhalative induction with polyisocyanate based on isophorone diisocyanate.

Skin sensitisation according to Magnusson/Kligmann (maximizing test):: positive (Guinea pig, OECD Test Guideline 406)
Toxicological studies at the product containing solvent.

Repeated Dose Toxicity
13 w, Inhalative: NOAEL: 2,9, (rat, male/female, 6 hours a day, 5 days a week)
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. (Metabolic Activation: with/without)
Chromosome aberration test in vitro: negative (Chinese hamster ovary (CHO) cells, Metabolic Activation: with/without)
Point mutation in mammalian cells (HPRT test): negative (Metabolic Activation: with/without)

Toxicity Data for: Propylene Glycol Monomethyl Ether Acetate

Acute Oral Toxicity
LD50: 6,190 mg/kg (rat, male/female) (OECD Test Guideline 401)

LD50: 5,155 mg/kg (rat, female) (OECD Test Guideline 401)

Acute Inhalation Toxicity
LC0: > 70.458 mg/l, 4 h, vapour (rat, male) (OECD Test Guideline 403)
4 hour test is calculated.

LC0: > 4,345 ppm, 6 h, vapour (rat, male) (OECD Test Guideline 403)

Acute Dermal Toxicity
LD50: > 5,000 mg/kg (rat, male/female) (OECD Test Guideline 402)

Skin Irritation
rabbit, OECD Test Guideline 404, Non-irritating

Eye Irritation
rabbit, Slightly irritating

Sensitization
dermal: non-sensitizer (Guinea pig, Magnusson/Kligmann (Maximization Test))

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

Repeated Dose Toxicity
14 Days, inhalation: NOAEL: 300 ppm, LOAEL: 1,000 ppm, (Rat)

45 Days, Oral: NOAEL: >= 1,000 mg/kg, (Rat, male/female, daily)

90 Days, inhalation: NOAEL: 300 ppm, LOAEL: 1,000 ppm, (Rat, male/female, 6 hrs/day)

Mutagenicity
Genetic Toxicity in Vitro:
Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Developmental Toxicity/Teratogenicity
Rat, Female, inhalation, 6 hrs/day 7 days/week, NOAEL (teratogenicity): > 4,000 ppm, No Teratogenic effects observed at doses tested.Rat, Female, inhalation, GD 6-15, 6 hrs/day 7 days/week, NOAEL (teratogenicity): > 4,000 ppm, NOAEL (maternal): 500 ppm

Toxicity Data for: Hydrophilic Aliphatic Polyisocyanate based on IPDI

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

Acute Oral Toxicity
LD50: > 2,500 mg/kg (rat) (OECD Test Guideline 423)

Acute Inhalation Toxicity
LC50: > 5 mg/l, 4 h, dust/mist (rat, male/female)
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 test result cannot be directly applied for the purpose of assessing hazard.

Skin Irritation
rabbit, OECD Test Guideline 404, slight irritant

Eye Irritation
rabbit, OECD Test Guideline 405, slight irritant

Sensitization
Skin sensitization (local lymph node assay (LLNA)):: positive (Mouse, OECD Test Guideline 429)

Mutagenicity
Genetic Toxicity in Vitro:
Salmonella/microsome test (Ames test): No indication of mutagenic effects. (Metabolic Activation: with/without)
Studies of a comparable product.

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

12. Ecological Information

Ecological Data for: BAYHYDUR 401-70 MPA

Data on the product is not available.Please find the data available for the components.

Ecological Data for Isophorone Diisocyanate Homopolymer
Biodegradation
Aerobic, 0 %, Exposure time: 28 d, i.e. not readily degradable

Bioaccumulation
An accumulation in aquatic organisms is not to be expected.

Acute and Prolonged Toxicity to Fish
LC50: > 1.51 mg/l (Cyprinus carpio (Carp), 96 h)
Ecotoxicological studies of the product

Acute Toxicity to Aquatic Invertebrates
EC50: > 3.36 mg/l (Daphnia magna (Water flea), 48 h)
Ecotoxicological studies of the product containing solvent.

Toxicity to Aquatic Plants
ErC50: > 3.1 mg/l, (scenedesmus subspicatus, 72 h)
Ecotoxicological studies of the product containing solvent.

Toxicity to Microorganisms
EC50: > 10,000 mg/l, (activated sludge, 3 h)

Ecotoxicological studies of the product

Additional Ecotoxicological Remarks
Data is based on the product, including residual monomer.

Ecological Data for Propylene Glycol Monomethyl Ether Acetate
Biodegradation
> 90 %, Exposure time: 28 d, i.e. readily biodegradable

Aerobic, 100 %, Exposure time: 8 d, i.e. degradable

Acute and Prolonged Toxicity to Fish
LC50: 161 mg/l (Fathead minnow (Pimephales promelas), 96 h)

LC50: > 100 mg/l (Oryzias latipes (Orange-red killifish), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: 408 mg/l (Water flea (Daphnia magna), 48 h)

EC50: > 500 mg/l (Daphnia magna (Water flea), 48 h)

Toxicity to Aquatic Plants
EC50: > 1,000 mg/l, (Pseudokirchneriella subcapitata (green algae), 72 h)

Toxicity to Microorganisms
EC20: > 1,000 mg/l, (activated sludge, 0.5 h)

Ecological Data for Hydrophilic Aliphatic Polyisocyanate based on IPDI
Biodegradation
aerobic, 0 %, Exposure time: 28 d, i.e. not readily degradable
Studies of a comparable product.

Acute and Prolonged Toxicity to Fish
LC0: > 100 mg/l

Acute Toxicity to Aquatic Invertebrates
EC50: > 100 mg/l (Daphnia magna (Water flea), 24 h)

Toxicity to Aquatic Plants
EC0: > 100 mg/l, (scenedesmus subspicatus, 72 h)

Toxicity to Microorganisms
EC50: > 10,000 mg/l, (activated sludge, 3 h)
Studies of a comparable product.

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

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.

If not sent to a re-conditioner, it is important that the company contacted to dispose of the drums be notified 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 1-Methoxy-2-propyl acetate)
Hazard Class or Division:	3
UN/NA Number:	UN1866
Packaging Group:	III
Hazard Label(s):	FLAMMABLE LIQUID

Sea transport (IMDG)

Proper Shipping Name:	RESIN SOLUTION (contains 1-Methoxy-2-propyl acetate)
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 1-Methoxy-2-propyl acetate)
Hazard Class or Division:	3

UN number: UN1866
Packaging Group: III
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:
None

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:

Concentration	Components	CAS-No.
30 - 60%	Isophorone Diisocyanate Homopolymer	53880-05-0
15 - 40%	Propylene Glycol Monomethyl Ether Acetate	108-65-6
10 - 30%	Hydrophilic Aliphatic Polyisocyanate based on IPDI	191427-71-1
<0.35%	Isophorone Diisocyanate(IPDI)	4098-71-9

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

Concentration	Components	CAS-No.
<0.35%	Isophorone Diisocyanate(IPDI)	4098-71-9

Massachusetts Right to Know Extraordinarily Hazardous Substance List:

Concentration	Components	CAS-No.

<0.35%	Isophorone Diisocyanate(IPDI)	4098-71-9
1 - 5 ppm	Hexachlorobenzene	118-74-1

California Proposition 65 List:

Concentration	**Components**	**CAS-No.**
1 - 5 ppm	Hexachlorobenzene	118-74-1

CFATS (Chemical Facility Anti-Terrorism Standards) Chemicals
To the best of our knowledge, this product does not contain Appendix A Chemicals of Interest (COI), at or above the Screening Threshold Quantity (STQ), as defined by the Department of Homeland Security Chemical Facility Anti-terrorism Standard (CFATS, 6 CFR Part 27).

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.

The handling of products containing reactive IPDI polyisocyanate/prepolymer and/or monomeric IPDI 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:	03/12/2020
SDS Version:	1.0