

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 1 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

SECTION 1: Identification

Product identifier

Product name: BEYPUR 300 BINDER

Synonyms: Modified Diphenylmethane Diisocyanate Blend

Recommended use of the product and restriction on use

Relevant identified uses: For Commercial Use Only.

Uses advised against: Avoid water, alcohol, strong bases, substances and products that react with isocyanates.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

United States

BEYNON Sports Surfaces, Inc.

16 Alt Road

Hunt Valley, MD 21030

(410) 771-9473

sds@beynonssports.com

www.beynonssports.com

Emergency telephone number:

United States

CHEMTREC

800-424-9300 (24 hours)

DISTRICT OF COLUMBIA: 202-483-7616

SECTION 2: Hazard(s) identification

GHS classification:

Skin irritation, category 2

Eye irritation, category 2A

Skin sensitization, category 1

Respiratory sensitization, category 1

Carcinogenicity, category 2

Specific target organ toxicity - single exposure, category 3, respiratory tract irritation

Acute toxicity (inhalation), category 4

Label elements

Hazard pictograms:



Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 2 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Signal word: Danger

Hazard statements:

- H317 May cause an allergic skin reaction
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H351 Suspected of causing cancer
- H335 May cause respiratory irritation
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H332 Harmful if inhaled

Precautionary statements:

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P272 Contaminated work clothing must not be allowed out of the workplace
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P284 Wear respiratory protection
- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P271 Use only outdoors or in a well-ventilated area
- P264 Wash hands thoroughly after handling
- P302+P352 IF ON SKIN: Wash with plenty of soap and water. Cleaning very soon after exposure is important, and a polyglycol-based skin cleanser or corn oil may be more effective than soap and water.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention
- P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
- P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
- P308+P313 IF exposed or concerned: Get medical advice/attention
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P312 Call a POISON CENTER/doctor if you feel unwell
- P362 Take off contaminated clothing and wash it before reuse
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337+P313 If eye irritation persists: Get medical advice/attention
- P405 Store locked up
- P403+P233 Store in a well-ventilated place. Keep container tightly closed
- P501 Dispose of contents and container in accordance with all local and federal regulations.

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	0.1
CAS number: 91-08-7	2-methyl-m-phenylene diisocyanate	0.1
CAS number: 101-68-8	4,4'-methylenediphenyl diisocyanate	5-10

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 3 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

CAS number: 5873-54-1	2,4'-methylenediphenyl diisocyanate	5-8
CAS number: 150449-03-9	1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propanol] and 1,2-propanediol	0.23-1.2
CAS number: 25686-28-6	4,4'-Methylenediphenyl diisocyanate, oligomers	0.23-1.2

Additional Information: None

SECTION 4: First aid measures

Description of first aid measures

General notes:

Show this Safety Data Sheet to the doctor in attendance. Take precautions to ensure your own safety before attempting rescue. Wear appropriate safety eyewear, gloves, protective clothing and respiratory protection to prevent exposure. See Section 8 of this SDS for personal protective equipment recommendations. Do not use the mouth to mouth method if victim has ingested or inhaled the product. Give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper device.

After inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If experiencing respiratory symptoms, seek medical advice/attention.

After skin contact:

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical advice/attention.

After eye contact:

Rinse eyes with plenty of gently flowing lukewarm water for 15 minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

After swallowing:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Dermal exposure may cause an allergic skin reaction. Symptoms may include irritation, redness, pain, rash, inflammation, itching, burning and dermatitis.

Inhalation exposure may cause allergy, asthma symptoms or breathing difficulties. Symptoms may include cough, chronic phlegm, shortness of breath, wheezing and chest tightness. Symptoms may be delayed.

Inhalation may have adverse effects on the respiratory tract. Symptoms may include cough, breathing difficulties, sore throat and inflammation of the mucous membrane lining the respiratory tract.

Skin contact may result in redness, pain, burning and inflammation.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning and tearing.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 4 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Acute inhalation exposure may lead to dizziness, drowsiness, headache, breathing difficulties, nausea, vomiting, abdominal pain, and lowering of consciousness. Adverse effects are dependent on exposure (dose, concentration, contact time).

Delayed symptoms and effects:

Effects are dependent on exposure (dose, concentration, contact time).

Suspected of causing cancer.

Symptoms of exposure may be delayed.

Immediate medical attention and special treatment

Specific treatment:

Effects are dependent on exposure (dose, concentration, contact time).

If respiratory symptoms persist, seek medical attention.

Indication of immediate medical attention and special treatment needed Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

Notes for the doctor:

Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

Unsuitable extinguishing media:

Do not use water jet.

Specific hazards during fire-fighting:

Thermal decomposition may produce irritating/toxic fumes/gases.

Special protective equipment for firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA with a full-face piece operated in positive pressure mode).

Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts. Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers. Avoid unnecessary run-off of extinguishing media which may cause pollution.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 5 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Do not get on skin, eyes or on clothing. Avoid breathing mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling. Remove contaminated clothing and launder before reuse.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

Methods and material for containment and cleaning up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Avoid breathing dust, mist, fumes, vapors or spray. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

SPILL OR LEAK PROCEDURES: Evacuate non-emergency personnel. Isolate the area and prevent access. Notify management. Put on protective equipment. Control source of the leak. Remove any ignition sources. Ventilate. Contain the spill to prevent spread into drains, sewers, water supplies, or soil. Call ChemTrec at 800-424-9300 or 703-527-3887 for assistance and advice. Major Spill or Leak (Standing liquid): Released material may be pumped into closed, but not sealed, metal container for disposal. Process can generate heat. Minor Spill or Leak (Wet surface): Cover spill area with suitable absorbent material (Kitty Litter, Oil-Dri®, etc). Saturate absorbent material with neutralization solution and mix. Wait 15 minutes. Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent until the surface is decontaminated. Check for residual surface contamination. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide (CO₂) escape.

CLEAN UP: Wash down spill area with decontamination solution. Allow solution to stand for at least 10 minutes. Neutralization solutions: (1) Colorimetric Laboratories Inc. (CLI) decontamination solution. (2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10) and 5% npropanol. (3) A mixture of 80% water, 20% non-ionic surfactant (e.g. Plurafac SL-62, Tergitol TMN-10). (4) A mixture of 90% water, 3-8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.

Harmful if inhaled. Put on appropriate personal protective equipment, including a self-contained breathing apparatus (see Section 8) before entering area of spill or leak. Avoid breathing dust, mist, fumes, vapors or spray. Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

Reference to other sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and storage

Precautions for safe handling:

Avoid contact with skin, eyes, and clothing. Follow good hygiene procedures when handling chemical materials. Refer to Section 8. Follow proper disposal methods. Refer to Section 13. Do not eat, drink, smoke, or use personal products when handling chemical substances.

Wear gloves and eye protection when handling, moving or using this product. Do not contaminate water, food, or feed by storage or disposal.

Conditions for safe storage, including any incompatibilities:

Store in cool location. Keep away from food and beverages. Protect from freezing and physical damage. Provide ventilation for containers. Keep container tightly sealed. Store away from incompatible materials.

SECTION 8: Exposure controls/personal protection

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 6 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Only those substances with limit values have been included below.

Occupational Exposure limit values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
United States(California)	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	Ceiling Limit: 0.02 ppm
	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	15-Minute STEL: 0.15 mg/m ³
	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	PEL: 0.04 mg/m ³
NIOSH	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	IDLH: 2.5 ppm
	2-methyl-m-phenylene diisocyanate	91-08-7	IDLH: 2.5 ppm
	4,4'-methylenediphenyl diisocyanate	101-68-8	REL: 0.05 mg/m ³ (10-hour)
	4,4'-methylenediphenyl diisocyanate	101-68-8	Ceiling Limit: 0.2 mg/m ³ (10-min)
	4,4'-methylenediphenyl diisocyanate	101-68-8	Ceiling Limit: 0.02 ppm (10-min)
	4,4'-methylenediphenyl diisocyanate	101-68-8	REL: 0.005 ppm (10-hour)
OSHA	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	Ceiling Limit: 0.14 mg/m ³
	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	15-Minute STEL: 0.15 mg/m ³
	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	8-Hour TWA: 0.04 mg/m ³
	4,4'-methylenediphenyl diisocyanate	101-68-8	PEL: 0.2 mg/m ³
ACGIH	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	15-Minute STEL: 0.005 ppm
	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	TWA: 0.001 ppm (TLV)
	2-methyl-m-phenylene diisocyanate	91-08-7	15-Minute STEL: 0.005 ppm
	2-methyl-m-phenylene diisocyanate	91-08-7	TWA: 0.001 ppm (TLV)
	4,4'-methylenediphenyl diisocyanate	101-68-8	8-Hour TWA: 0.005 ppm

Biological limit values:

Country (Legal Basis)	Substance	Identifier	Determinant	Specimen	Sampling time	Permissible limits
ACGIH	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	584-84-9	Toluene diamine (sum of 2,4- and 2,6-isomers), with hydrolysis	Creatinine in Urine	End of shift.	5 ug/g
	2-methyl-m-phenylene diisocyanate	91-08-7	Toluene diamine (sum of 2,4- and 2,6-isomers), with hydrolysis	Creatinine in Urine	End of shift.	5 ug/g

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 7 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Information on monitoring procedures:

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.

Appropriate engineering controls:

Effective ventilation in all processing areas.

Use local exhaust ventilation to maintain airborne concentrations below the TLV.

Personal protection equipment

Eye and face protection:

Safety goggles or safety glasses with side shields

Skin and body protection:

Chemical resistant clothing, chemical resistant gloves

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory protection

General hygienic measures:

Handle in accordance with good industrial hygiene and safety measures. Wash hands and face after handling chemical products. Wash hands before eating, drinking and smoking. Wash hands at the end of the workday.

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.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Not determined or not available.
Odor	Musty
Odor threshold	Not established
pH	Not Applicable
Melting point/freezing point	Not Applicable
Initial boiling point/range	572 °F (300 °C) @ 760 mmHg Decomposes
Flash point (closed cup)	> 392 oF (200oC)
Evaporation rate	Not established
Flammability (solid, gas)	Not Applicable
Upper flammability/explosive limit	Not Applicable
Lower flammability/explosive limit	Not Applicable
Vapor pressure	Not Applicable
Vapor density	Not Applicable
Density	9.1 lbs/gal
Relative density	1.09 - 1.12 g/cm ³ @ 25 °C (77 °F)
Solubilities	Insoluble - Reacts slowly with water to liberate CO ₂ gas
Partition coefficient (n-octanol/water)	Reacts with water

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 8 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Auto/Self-ignition temperature	Not applicable
Decomposition temperature	Not established
Dynamic viscosity	2500 - 4500 mPa.s. (25 °C)
Kinematic viscosity	Not established
Explosive properties	Not applicable
Oxidizing properties	Not established

Other information

SECTION 10: Stability and reactivity

Reactivity:

Stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability:

Stable under normal storage and handling conditions.

Possibility of hazardous reactions:

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid:

Incompatible materials.

Incompatible materials:

Strong oxidizing agents.

Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

Acute toxicity

Assessment:

Harmful if inhaled.

Product data: No data available.

Substance data:

Name	Route	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-diisocyanate	oral	LD50 Rat: 5110 mg/kg
	inhalation	LC50 Rat: 66 ppmV
	dermal	LD50 Rabbit: >9400 mg/kg
2-methyl-m-phenylene diisocyanate	oral	LD50 Rat: >2000 mg/kg
	inhalation	LC50 Human: 0.05 ppmV
2,4'-methylenediphenyl diisocyanate	oral	LD50 Rat: >2000 mg/kg
	inhalation	LC50 Rat: 0.49 mg/L (4 hours)
	dermal	LD50 Rabbit: >9400 mg/kg
4,4'-Methylenediphenyl diisocyanate, oligomers	oral	LD50 Rat: >5000 mg/kg
	inhalation	LC50 Rat: 0.49 mg/L (4h)
	dermal	LD50 Rabbit: >9400 mg/kg

Skin corrosion/irritation

Assessment:

Causes skin irritation.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 9 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Product data:

No data available.

Substance data:

Name	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Causes skin irritation.
2-methyl-m-phenylene diisocyanate	Causes skin irritation.
4,4'-methylenediphenyl diisocyanate	Causes skin irritation.
2,4'-methylenediphenyl diisocyanate	Causes skin irritation.
1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propan ol] and 1,2-propanediol	Causes skin irritation.
4,4'-Methylenediphenyl diisocyanate, oligomers	Causes skin irritation.

Serious eye damage/irritation

Assessment:

Causes serious eye irritation.

Product data:

No data available.

Substance data:

Name	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Causes serious eye irritation.
2-methyl-m-phenylene diisocyanate	Causes serious eye irritation.
4,4'-methylenediphenyl diisocyanate	Causes serious eye irritation.
2,4'-methylenediphenyl diisocyanate	Causes serious eye irritation.
1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propan ol] and 1,2-propanediol	Causes serious eye irritation.
4,4'-Methylenediphenyl diisocyanate, oligomers	Causes serious eye irritation.

Respiratory or skin sensitization

Assessment:

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 10 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Product data:

No data available.

Substance data:

Name	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-diisocyanate	May cause an allergic skin reaction.
	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
2-methyl-m-phenylene diisocyanate	May cause an allergic skin reaction.
	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
4,4'-methylenediphenyl diisocyanate	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	May cause an allergic skin reaction.
2,4'-methylenediphenyl diisocyanate	May cause an allergic skin reaction.
	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propanol] and 1,2-propanediol	May cause an allergic skin reaction.
	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
4,4'-Methylenediphenyl diisocyanate, oligomers	Respiratory sensitization may cause allergy or asthma symptoms or breathing difficulties if inhaled.
	Skin sensitization may cause an allergic skin reaction.

Carcinogenicity

Assessment:

Suspected of causing cancer.

Product data: No data available.

Substance data:

Name	Species	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-diisocyanate	Mice	Official EU classification according to Directive 67/548/EEC is Carc Cat 3; R40. Limited evidence of a carcinogenic effect, and by EU Classification, Labelling and Packaging of Substances and Mixtures (CLP) Regulation (EC) No. 1272/2008), Carc.2. Suspected of causing cancer.
4,4'-methylenediphenyl diisocyanate		Suspect of causing cancer.
4,4'-Methylenediphenyl diisocyanate, oligomers	Rat	Suspected of causing cancer by inhalation.

International Agency for Research on Cancer (IARC):

Name	Classification
4-methyl-m-phenylene diisocyanate toluene-2,6-diisocyanate	Group 2B

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 11 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Name	Classification
2-methyl-m-phenylene diisocyanate	Group 2A
1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propanol] and 1,2-propanediol	Not Applicable
4,4'-Methylenediphenyl diisocyanate, oligomers	Not Applicable

National Toxicology Program (NTP):

Name	Classification
4-methyl-m-phenylene diisocyanate toluene-2,6-diisocyanate	Not Applicable
2-methyl-m-phenylene diisocyanate	Not Applicable
1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propanol] and 1,2-propanediol	Not Applicable
4,4'-Methylenediphenyl diisocyanate, oligomers	Not Applicable

OSHA Carcinogens: Not applicable

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Specific target organ toxicity (single exposure)

Assessment:

May cause respiratory irritation.

Product data:

No data available.

Substance data:

Name	Result
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Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 12 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Name	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	May cause respiratory irritation.
2-methyl-m-phenylene diisocyanate	May cause respiratory irritation.
4,4'-methylenediphenyl diisocyanate	May cause respiratory irritation.
2,4'-methylenediphenyl diisocyanate	May cause respiratory irritation.
1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propan ol] and 1,2-propanediol	May cause respiratory irritation.
4,4'-Methylenediphenyl diisocyanate, oligomers	May cause respiratory irritation.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data:

Name	Result
4,4'-methylenediphenyl diisocyanate	May cause damage to respiratory system through prolonged or repeated inhalation.
2,4'-methylenediphenyl diisocyanate	May cause damage to respiratory system through repeated or prolonged exposure via inhalation.
4,4'-Methylenediphenyl diisocyanate, oligomers	May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data:

No data available.

Substance data: No data available.

Information on likely routes of exposure:

No data available.

Symptoms related to the physical, chemical and toxicological characteristics:

No data available.

Other information:

No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 13 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Substance data:

Name	Result
2,4'-methylenediphenyl diisocyanate	LC50 Danio rerio: >1000 mg/L (96 hours)
	EC50 Daphnia magna: 129.7 mg/L (24 hours)

Chronic (long-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Result
2,4'-methylenediphenyl diisocyanate	EC50 Scenedesmus subspicatus: >1640 mg/L (3 days)
	NOEC Daphnia magna: >10 mg/L (21 days)

Persistence and degradability

Product data: No data available.

Substance data:

Name	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-diisocyanate	This substance is not readily biodegradable.
2,4'-methylenediphenyl diisocyanate	Not readily biodegradable.
4,4'-Methylenediphenyl diisocyanate, oligomers	This substance is not readily biodegradable.

Bioaccumulative potential

Product data: No data available.

Substance data:

Name	Result
4-methyl-m-phenylene diisocyanate toluene-2,6-diisocyanate	This substance has low potential to bioaccumulate.
2,4'-methylenediphenyl diisocyanate	BCF: 200
4,4'-Methylenediphenyl diisocyanate, oligomers	No data is available on terrestrial bioaccumulation for the test substance, but it is not required under REACH.

Mobility in soil

Product data: No data available.

Substance data:

Name	Result
2-methyl-m-phenylene diisocyanate	This substance reacts with water; therefore, leaching of the substance in soil should not be important.
2,4'-methylenediphenyl diisocyanate	No accumulation is expected in soil.
4,4'-Methylenediphenyl diisocyanate, oligomers	This substance is unlikely to be adsorbed by the soil/sediment.

Other adverse effects: No data available.

SECTION 13: Disposal considerations

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 14 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Disposal methods:

Waste must be disposed of in accordance with federal, state, and local Environmental control regulations. Incineration is the preferred method.

Contaminated packages:

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

SECTION 14: Transport information

United States Transportation of dangerous goods (49 CFR DOT)

UN number	Not regulated
UN proper shipping name	Not regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None
Reportable quantity	MDI - 5000 lb (2270 kg) TDI - 100 lb. (45.4 kg)
Additional Information	Additional DOT Transportation Information: (reference 49 CFR 172.101 Appendix A) When in individual containers of more than the Product RQ, this material ships as Regulated as follows: UN NUMBER: UN3082 UN PROPER SHIPPING NAME: Environmentally Hazardous Substance, Liquid, N.O.S. (MDI, Toluene Diisocyanate) HAZARD CLASS(ES) / LABEL: Class 9 PACKAGING GROUP: III

International Maritime Dangerous Goods (IMDG)

UN number	Not regulated
UN proper shipping name	Not regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN number	Not regulated
UN proper shipping name	Not regulated
UN transport hazard class(es)	None
Packing group	None
Environmental hazards	None
Special precautions for user	None

SECTION 15: Regulatory information

United States regulations

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 15 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

Inventory listing (TSCA):

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed
91-08-7	2-methyl-m-phenylene diisocyanate	Listed
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed
5873-54-1	2,4'-methylenediphenyl diisocyanate	Listed
150449-03-9	1,3-Butanediol, polymer with 1,1'- methylenebis [isocyanatobenzene], [(1-methyl-1,2-ethanediyl)bis(oxy)]bis[propanol] and 1,2-propanediol	Listed
25686-28-6	4,4'-Methylenediphenyl diisocyanate, oligomers	Listed

Significant New Use Rule (TSCA Section 5):

91-08-7	2-methyl-m-phenylene diisocyanate	Listed
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed

SARA Section 311/312 hazards:

Acute	Chronic	Fire	Pressure	Reactive
No	No	No	No	No

SARA Section 302 extremely hazardous substances:

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed
91-08-7	2-methyl-m-phenylene diisocyanate	Listed

SARA Section 313 toxic chemicals:

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed
91-08-7	2-methyl-m-phenylene diisocyanate	Listed
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed

CERCLA:

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed	100
91-08-7	2-methyl-m-phenylene diisocyanate	Listed	100
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed	5000 Lbs

Section 112(r) of the Clean Air Act (CAA):

91-08-7	2-methyl-m-phenylene diisocyanate	Listed
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Massachusetts Right to Know:

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed
91-08-7	2-methyl-m-phenylene diisocyanate	Listed
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed

New Jersey Right to Know:

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed
91-08-7	2-methyl-m-phenylene diisocyanate	Listed
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed
5873-54-1	2,4'-methylenediphenyl diisocyanate	Listed

New York Right to Know:

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed
91-08-7	2-methyl-m-phenylene diisocyanate	Listed
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed

Pennsylvania Right to Know:

584-84-9	4-methyl-m-phenylene diisocyanate toluene-2,6-di-isocyanate	Listed
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Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial preparation date: 02.28.2020

Page 16 of 16

Revision date: 03.12.2020

BEYPUR 300 BINDER

91-08-7	2-methyl-m-phenylene diisocyanate	Listed
101-68-8	4,4'-methylenediphenyl diisocyanate	Listed

California Proposition 65: None of the ingredients are listed.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

Initial preparation date: 02.28.2020

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End of Safety Data Sheet