

RC Hardener

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).
Date of Issue: 04/04/2024 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: RC Hardener

1.2. Intended Use of the Product

Adhesive hardener

1.3. Name, Address, and Telephone of the Responsible Party

Company

Normac Adhesive Products Inc

1350 Heine Court

Burlington, Ontario, L7L 6M4

Canada

Tel: (905) 332-6455

normacadhesives.com

SDS@normacadhesives.com

1.4. Emergency Telephone Number

Emergency Number : VelocityEHS

United States, Canada, Puerto Rico, and the U.S. Virgin Islands: 1-800-255-3924

Outside of the US, Canada, Puerto Rico and the U.S. Virgin Islands: +1-813-248-0585.

Australia: 1-300-954-583, Brazil: 0-800-591-6042, China: 400-120-0751, India: 000-800-100-4086 and

Mexico: 800-099-0731.

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

Flammable liquids Category 2	H225
Acute toxicity (inhalation) Category 4	H332
Skin corrosion/irritation Category 2	H315
Serious eye damage/eye irritation Category 2	H319
Respiratory sensitization, Category 1	H334
Skin sensitization, Category 1	H317
Carcinogenicity Category 2	H351
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity (repeated exposure) Category 2	H373

2.2. Label Elements

GHS-US/CA Labeling

Hazard Pictograms (GHS-US/CA)



Signal Word (GHS-US/CA)

: Danger

Hazard Statements (GHS-US/CA)

: H225 - Highly flammable liquid and vapor.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H334 - May cause an allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H351 - Suspected of causing cancer.
H373 - May cause damage to organs through prolonged or repeated exposure (Inhalation).

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Precautionary Statements (GHS-US/CA) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, and lighting equipment.
P242 - Use only non-sparking tools.
P243 - Take action to prevent static discharges.
P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves, protective clothing, and eye protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P312 - Call a POISON CENTER or doctor if you feel unwell.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see section 4 on this SDS).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use carbon dioxide (CO₂), extinguishing powder, foam, sand, water to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
4,4'-Methylenediphenyl diisocyanate	Benzene, 1,1'-methylenebis[4-isocyanato- / 4,4'-Diisocyanatodiphenylmethane / Diphenylmethane 4,4'-diisocyanate / 4,4'-Diphenylmethane diisocyanate / Diphenylmethane-4,4'-diisocyanate / 1,1'-Methylenebis(4-isocyanatobenzene) / Methylenebis(4-phenylene isocyanate) / 4,4'-Methylenebis(phenyl isocyanate) /	(CAS-No.) 101-68-8	30 - 60	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373

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	Methylenebis(4,1-phenylene) diisocyanate / 4,4'-MDI / Methylenebis(1,4-phenylene) diisocyanate / Methylenebis(4-phenyl isocyanate) / 1-Isocyanato-4-[(4-isocyanatophenyl)methyl]benzene / Bis(4-isocyanatophenyl)methane / Methylenebis(phenylisocyanate) / 4,4'-Methylenediphenyldiisocyanate / Methylene 4,4'-diphenyl diisocyanate / Methylenebis(phenyl isocyanate) / 4,4'-Methylene bisphenyl diisocyanate			
Ethyl acetate	Acetic acid, ethyl ester / Ethyl ethanoate	(CAS-No.) 141-78-6	10 - 30	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
Benzene, 1,1'-methylenebis[isocyanato-], homopolymer	Homopolymer, benzene, 1,1'-methylenebis [isocyanato] / Methylenebis(isocyanatobenzene) homopolymer / Polymethylene polyphenyl isocyanate / Diphenylmethane diisocyanate homopolymer	(CAS-No.) 39310-05-9	7 - 13	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
Benzene, 1,1'-methylenebis[isocyanato-	Diphenylmethane diisocyanate / Methylenediphenyl diisocyanate / 1,1'-Methylenebis(isocyanatobenzene) / Generic MDI / Methylenediphenyl diisocyanates / Benzene, 1,1'-methylenebis(isocyanato- / methylenebis(phenyl isocyanate) / Methylenebis(phenyl isocyanate) / MDI	(CAS-No.) 26447-40-5	1 - 5	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 STOT SE 3, H335 STOT RE 2, H373
Triethyl phosphate	TEP / Phosphoric acid, triethyl ester	(CAS-No.) 78-40-0	0.1 – 1.5	Acute Tox. 4 (Oral), H302 Eye Irrit. 2B, H320
Benzenesulfonyl isocyanate, 4-methyl-	4-Isocyanatosulfonyltoluene / p-Toluenesulfonic acid, anhydride with isocyanic acid / Tosyl isocyanate, para- / p-Toluenesulfonyl isocyanate / 4-Methylbenzenesulfonyl isocyanate / para-Toluenesulfonyl isocyanate / Tosyl isocyanate	(CAS-No.) 4083-64-1	0.1 - 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Resp. Sens. 1, H334 STOT SE 3, H335

Full text of H-statements: see section 16

*Percentages are listed in weight by weight percentage (w/w%). The actual concentration of ingredient(s) is withheld as a trade secret in accordance with the Hazardous Products Regulations (HPR) SOR/2015-17 and 29 CFR 1910.1200.

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.

Skin Contact: Immediately remove contaminated clothing. Wash affected area with soap and water for at least 15 minutes. Obtain medical attention if irritation/rash develops or persists. If exposed or concerned: Get medical advice/attention.

Eye Contact: Immediately rinse with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

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Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Skin sensitization. Causes skin irritation. Causes serious eye irritation. Suspected of causing cancer. Harmful if inhaled. May cause damage to organs through prolonged or repeated exposure (Inhalation).

Inhalation: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness. Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction.

Skin Contact: May cause an allergic skin reaction. Redness, pain, swelling, itching, burning, dryness, and dermatitis.

Eye Contact: Contact causes severe irritation with redness and swelling of the conjunctiva.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: May cause damage to organs through prolonged or repeated exposure (Inhalation). Suspected of causing cancer.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO₂). Dry chemical. Foam. Sand. Water spray, fog.

Unsuitable Extinguishing Media: Do not use a heavy water stream. A heavy water stream may spread burning liquid.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Highly flammable liquid and vapor.

Explosion Hazard: May form flammable or explosive vapor-air mixture.

Reactivity: Reacts violently with strong oxidizers. Increased risk of fire or explosion.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂). Hydrogen cyanide. Isocyanates. Nitrogen oxides. Phosphorus oxides. Sulfur oxides.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not breathe vapor, mist or spray. Do not get in eyes, on skin, or on clothing. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use special care to avoid static electric charges.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Eliminate ignition sources first, then ventilate the area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions. Ventilate area.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Do not take up in combustible material such as: saw dust or cellulosic material. Use only non-sparking tools.

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6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable.

Precautions for Safe Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take precautionary measures against static discharge. Use only non-sparking tools. Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment.

Storage Conditions: Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store locked up/in a secure area. Store in a well-ventilated place. Keep container tightly closed. Keep in fireproof place.

Incompatible Materials: Alcohols. Amines. Copper and its alloys. Galvanized surfaces. Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s)

Adhesive hardener

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

4,4'-Methylenediphenyl diisocyanate (101-68-8)		
USA ACGIH	ACGIH OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))
USA OSHA	OSHA PEL Ceiling	0.2 mg/m ³
USA OSHA	OSHA PEL C	0.02 ppm
USA NIOSH	NIOSH REL TWA	0.05 mg/m ³
USA NIOSH	NIOSH REL TWA	0.005 ppm (Methylene bisphenyl isocyanate)
USA NIOSH	NIOSH REL Ceiling	0.2 mg/m ³
USA NIOSH	NIOSH REL C	0.02 ppm
USA IDLH	IDLH	75 mg/m ³
Alberta	OEL TWA	0.05 mg/m ³
Alberta	OEL TWA	0.005 ppm
British Columbia	OEL C	0.01 ppm (Methylene bisphenyl isocyanate (MDI))
British Columbia	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))
Manitoba	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))
New Brunswick	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))
Newfoundland & Labrador	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))
Nova Scotia	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))
Nunavut	OEL STEL	0.015 ppm (Methylene bisphenyl isocyanate)
Nunavut	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate)
Northwest Territories	OEL STEL	0.015 ppm (Methylene bisphenyl isocyanate)
Northwest Territories	OEL TWA	0.005 ppm
Ontario	OEL C	0.02 ppm (designated substances regulation (Isocyanates, organic compounds (Methylene bisphenyl isocyanate (MDI)))
Ontario	OEL TWA	0.005 ppm (designated substances regulation (Isocyanates, organic compounds (Methylene bisphenyl isocyanate (MDI))) 0.005 ppm (applies to workplaces to which the designated substances regulation does not apply (Methylene bisphenyl isocyanate (MDI)))
Prince Edward Island	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))

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Québec	VEMP OEL TWAEV	0.051 mg/m ³
Québec	VEMP OEL TWAEV	0.005 ppm
Saskatchewan	OEL STEL	0.015 ppm (Methylene bisphenyl isocyanate (MDI))
Saskatchewan	OEL TWA	0.005 ppm (Methylene bisphenyl isocyanate (MDI))
Yukon	OEL C	0.2 mg/m ³ (Methylene bisphenyl isocyanate (MDI))
Yukon	OEL C	0.02 ppm (Methylene bisphenyl isocyanate (MDI))
Benzene, 1,1'-methylenebis[isocyanato- (26447-40-5)		
USA OSHA	OSHA PEL Ceiling	0.2 mg/m ³
USA OSHA	OSHA PEL C	0.02 ppm
Triethyl phosphate (78-40-0)		
USA AIHA	WEEL TWA	7.45 mg/m ³
Ethyl acetate (141-78-6)		
USA ACGIH	ACGIH OEL TWA	400 ppm
USA OSHA	OSHA PEL TWA	1400 mg/m ³
USA OSHA	OSHA PEL TWA	400 ppm
USA NIOSH	NIOSH REL TWA	1400 mg/m ³
USA NIOSH	NIOSH REL TWA	400 ppm
USA IDLH	IDLH	2000 ppm (10% LEL)
Alberta	OEL TWA	1440 mg/m ³
Alberta	OEL TWA	400 ppm
British Columbia	OEL TWA	150 ppm
Manitoba	OEL TWA	400 ppm
New Brunswick	OEL TWA	400 ppm
Newfoundland & Labrador	OEL TWA	400 ppm
Nova Scotia	OEL TWA	400 ppm
Nunavut	OEL STEL	500 ppm
Nunavut	OEL TWA	400 ppm
Northwest Territories	OEL STEL	500 ppm
Northwest Territories	OEL TWA	400 ppm
Ontario	OEL TWA	400 ppm
Prince Edward Island	OEL TWA	400 ppm
Québec	VEMP OEL TWAEV	1440 mg/m ³
Québec	VEMP OEL TWAEV	400 ppm
Saskatchewan	OEL STEL	500 ppm
Saskatchewan	OEL TWA	400 ppm
Yukon	OEL STEL	1400 mg/m ³
Yukon	OEL STEL	400 ppm
Yukon	OEL TWA	1400 mg/m ³
Yukon	OEL TWA	400 ppm

8.2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases or vapors may be released. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Gas detectors should be used when toxic gases may be released.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

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Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: No data available
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: > 35 °C (95 °F)
Flash Point	: < 23 °C (73 °F)
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: No data available
Upper Flammable Limit	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20 °C	: No data available
Relative Density	: No data available
Specific Gravity	: No data available
Solubility	: No data available
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Reacts violently with strong oxidizers. Increased risk of fire or explosion.

10.2. Chemical Stability:

Highly flammable liquid and vapor. May form flammable or explosive vapor-air mixture.

10.3. Possibility of Hazardous Reactions:

Contact with isocyanates may cause polymerization.

10.4. Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.

10.5. Incompatible Materials:

Alcohols. Amines. Copper and its alloys. Galvanized surfaces. Strong acids, strong bases, strong oxidizers.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Carbon oxides (CO, CO₂). Hydrogen cyanide. Isocyanates. Nitrogen oxides. Phosphorus oxides. Sulfur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Likely routes of exposure: Dermal, Eye Contact, Inhalation, Oral.

Acute Toxicity (Oral): Not classified.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Harmful if inhaled.

LD50 and LC50 Data:

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ATE US/CA (Inhalation)	1.95 mg/l/4h

Skin Corrosion/Irritation: Causes skin irritation.

Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Suspected of causing cancer.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure (Inhalation).

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness. Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction.

Symptoms/Injuries After Skin Contact: May cause an allergic skin reaction. Redness, pain, swelling, itching, burning, dryness, and dermatitis.

Symptoms/Injuries After Eye Contact: Contact causes severe irritation with redness and swelling of the conjunctiva.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: May cause damage to organs through prolonged or repeated exposure (Inhalation). Suspected of causing cancer.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

4,4'-Methylenediphenyl diisocyanate (101-68-8)	
LD50 Oral Rat	> 10000 mg/kg
LD50 Dermal Rabbit	> 9400 mg/kg
LC50 Inhalation Rat	369 mg/m ³ (Exposure time: 4 h)
Benzene, 1,1'-methylenebis[isocyanato- (26447-40-5)	
LD50 Oral Rat	> 10000 mg/kg (Source: OECD_SIDS)
LD50 Dermal Rabbit	> 10000 mg/kg (Source: OECD_SIDS)
LC50 Inhalation Rat	490 mg/m ³ (Exposure time: 4 h Source: OECD_SIDS)
Triethyl phosphate (78-40-0)	
LD50 Oral Rat	1100 – 1600 mg/kg (Source: NZ_CCID)
LD50 Dermal Rabbit	> 20 g/kg (Source: NLM_HSDB)
LC50 Inhalation Rat	> 8817 mg/m ³ (Exposure time: 4 h Source: ECHA_API)
Benzene, 1,1'-methylenebis[isocyanato-, homopolymer (39310-05-9)	
ATE US/CA (Inhalation)	1.50 mg/l/4h
Ethyl acetate (141-78-6)	
LD50 Oral Rat	5620 mg/kg (Source: NLM_CIP)
LD50 Dermal Rabbit	> 18000 mg/kg (Source: JAPAN_GHS)
LC50 Inhalation Rat	> 7348 mg/l/4h (calculated off of 6hr test results)
LC50 Inhalation Rat	4000 ppm/4h
Benzenesulfonyl isocyanate, 4-methyl- (4083-64-1)	
LD50 Oral Rat	2234 mg/kg (Source: NLM_CIP)
LC50 Inhalation Rat	> 640 ppm/1h

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Not classified.

Benzene, 1,1'-methylenebis[isocyanato- (26447-40-5)	
NOEC (Acute)	≥ 1000 mg/kg (Exposure time: 14 Days - Species: Eisenia foetida [soil dry weight])
Ethyl acetate (141-78-6)	

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LC50 Fish	220 – 250 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: EPA)
EC50 Crustacea	560 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 Fish	484 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through] Source: IUCLID)
NOEC Chronic Crustacea	2.4 mg/l

12.2. Persistence and Degradability

RC Hardener	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

RC Hardener	
Bioaccumulative Potential	Not established.

4,4'-Methylenediphenyl diisocyanate (101-68-8)

BCF Fish	92
Partition coefficient n-octanol/water (Log Pow)	4.51 at 22 °C (at pH 7)

Benzene, 1,1'-methylenebis[isocyanato- (26447-40-5)

BCF Fish	3 – 14
Partition coefficient n-octanol/water (Log Pow)	4.5

Triethyl phosphate (78-40-0)

BCF Fish	1.3 (whole body w.w.)
Partition coefficient n-octanol/water (Log Pow)	1.11

Ethyl acetate (141-78-6)

BCF Fish	30
Partition coefficient n-octanol/water (Log Pow)	0.73 at 20 °C (at pH 7)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : ADHESIVES
Hazard Class : 3
Identification Number : UN1133
Label Codes : 3
Packing Group : II
ERG Number : 128



14.2. In Accordance with IMDG

Proper Shipping Name : ADHESIVES
Hazard Class : 3



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Identification Number : UN1133
Label Codes : 3
Packing Group : II
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D

14.3. In Accordance with IATA

Proper Shipping Name : ADHESIVES
Hazard Class : 3
Identification Number : UN1133
Label Codes : 3
Packing Group : II
ERG Code (IATA) : 3L



14.4. In Accordance with TDG

Proper Shipping Name : ADHESIVES
Hazard Class : 3
Identification Number : UN1133
Label Codes : 3
Packing Group : II



SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

RC Hardener	
SARA Section 311/312 Hazard Classes	Health hazard - Acute toxicity (any route of exposure) Health hazard - Carcinogenicity Health hazard - Respiratory or skin sensitization Health hazard - Serious eye damage or eye irritation Health hazard - Skin corrosion or Irritation Health hazard - Specific target organ toxicity (single or repeated exposure) Physical hazard - Flammable (gases, aerosols, liquids, or solids)
4,4'-Methylenediphenyl diisocyanate (101-68-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb listed under MDI
SARA Section 313 - Emission Reporting	1 %
Benzene, 1,1'-methylenebis[isocyanato- (26447-40-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	5000 lb
Triethyl phosphate (78-40-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
Benzene, 1,1'-methylenebis[isocyanato-, homopolymer (39310-05-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
Ethyl acetate (141-78-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	5000 lb
Benzenesulfonyl isocyanate, 4-methyl- (4083-64-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	

15.2. US State Regulations

4,4'-Methylenediphenyl diisocyanate (101-68-8)	
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List	

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U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Ethyl acetate (141-78-6)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

15.3. Canadian Regulations

4,4'-Methylenediphenyl diisocyanate (101-68-8)

Listed on the Canadian DSL (Domestic Substances List)

Benzene, 1,1'-methylenebis[isocyanato- (26447-40-5)

Listed on the Canadian DSL (Domestic Substances List)

Triethyl phosphate (78-40-0)

Listed on the Canadian DSL (Domestic Substances List)

Benzene, 1,1'-methylenebis[isocyanato-, homopolymer (39310-05-9)

Listed on the Canadian DSL (Domestic Substances List)

Ethyl acetate (141-78-6)

Listed on the Canadian DSL (Domestic Substances List)

Benzenesulfonyl isocyanate, 4-methyl- (4083-64-1)

Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 04/04/2024

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H320	Causes eye irritation
H332	Harmful if inhaled
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure

Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)

AU_WES: Australia WES

CHEMVIEW: ChemView (U.S. Environmental Protection Agency)

EC_RAR: European Commission Renewal Assessment Report

EC_SCOEL: European Commission Scientific Committee on Occupational Exposure Limits

ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports

ECHA_API: European Chemicals Agency API

ECHA_RAC: ECHA Committee for Risk Assessment

EFSA: European Food Safety Authority

EPA: U.S. Environmental Protection Agency

EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)

FOOD_JOURNAL: Food Research Journal (1956)

IARC: The International Agency for Research on Cancer

IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles

IUCLID: International Uniform Chemical Information Database

JAPAN_GHS: Japan GHS Basis for Classification Data

JP_J-CHECK: Japan J-Check

KR_NIER: South Korea National Institute of Environmental Research Evaluations

NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme

NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)

NLM_CIP: National Library of Medicine ChemID plus database

NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank

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Agency)

EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)

EPA_HPVC: High Production Volume Chemicals (U.S. Environmental Protection Agency)

EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)

EU_CLH: European Union Harmonised Classification and Labelling Proposal

EU_RAR: European Union Risk Assessment Report

NLM_PUBMED: National Library of Medicine PubMed database

NTP: National Toxicology Program

NZ_CCID: New Zealand Chemical Classification and Information Database

OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)

OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)

WHO: World Health Organization

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

NA GHS SDS 2015 (Can, US)