

PRODUCT NAME(S): TuffGrip® HP 11-35P Isocyanate
SECTION 1 – IDENTIFICATION

Manufacturer's Info:
Rhino Linings Corporation
 9747 Businesspark Avenue
 San Diego, CA, 92131

Product Name: TuffGrip® HP 11-35P Isocyanate
Chemical Name: MDI Prepolymer
Chemical Family: Aromatic Isocyanate

Information phone: (858) 450 0441
Emergency contact: CHEMTREC (800) 424 9300

SECTION 2 – HAZARD(S) IDENTIFICATION
OSHA Hazard Communication Standard:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

GHS-Label Elements:

Signal Word:
 DANGER

Pictogram(s):



GHS 08



GHS 07

CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ISOCYANATES MAY CAUSE SENSITIZATION IN SOME INDIVIDUALS, RESULTING IN ALLERGIC RESPIRATORY REACTIONS INCLUDING WHEEZING, SHORTNESS OF BREATH AND DIFFICULTY BREATHING. ANIMAL TESTS AND OTHER RESEARCH INDICATE THAT SKIN CONTACT WITH MDI MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

Classification of the substance or mixture:

Hazard Class	Category	Hazard Statement Codes	Hazard Statements
Acute Toxicity, Inhalation	4	H332	Harmful if inhaled
Skin Corrosion/Irritation	2	H315	Causes skin irritation
Serious Eye Damage/Eye Irritation	2B	H319	Causes serious eye irritation
Skin Sensitization	1	H317	May cause an allergic skin reaction
Respiratory Sensitization	1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
STOT – Single Exposure	3	H335	May cause respiratory irritation
STOT – Repeated Exposure	2	H373	May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled

Precautionary Statements:

Prevention:	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P260	Do not breathe dust, fume, gas, mist, vapors, spray.
	P264	Wash exposed area with plenty of water and soap 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, eye protection, face protection.
	P285	In case of inadequate ventilation wear respiratory protection.

Response:	P304+P341 P342+P311 P302+P352 P333+P313 P362 P305+P351+P338 P337+P313 P308+P313	<p>IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.</p> <p>IF ON SKIN: Wash with plenty of soap and water.</p> <p>If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.</p> <p>IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>If eye irritation persists: Get medical advice/attention.</p> <p>IF exposed or concerned: Get medical advice/attention.</p>
Storage:	P403+P233 P405	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal:	P501	Dispose of contents/container to an approved waste disposal plant.
Hazards not otherwise classified (HNOC):		None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS #	EC #	Concentration, %
4,4'-Methylenediphenyl diisocyanate (MDI)	101-68-8	202-966-0	20 – 40
Methylenediphenyl diisocyanate	26447-40-5	247-714-0	20 – 40
Methylenediphenyl diisocyanate, Homopolymer	39310-05-9	609-645-8	1 – 5
Propane-1,2-diol, propoxylated	25322-69-4	500-039-8	20 – 30
Propylene Carbonate	108-32-7	203-572-1	1 – 5
Dibutyl phthalate	84-74-2	201-557-4	1 – 5

NOTE: CAS #101-68-8 is an MDI isomer that is part of CAS #26447-40-5

SECTION 4 – FIRST-AID MEASURES
Description of First Aid measures:

- Inhalation:** Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
- Skin:** Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation or rash occurs. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.
- Eye:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
- Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms/effects, acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

General advice for First Aid responders: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment. Show this SDS to physician.

Note to physician: Maintain adequate ventilation and oxygenation of the patient. 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. Cholinesterase inhibition has been noted in human exposure but is not of benefit in determining exposure and is not correlated with signs of exposure. 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).

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water fog or fine spray.. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. May spread fire.

Specific hazards arising from the chemical: Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition may be toxic and/or irritating. Combustion products may include and are not limited to Nitrogen oxides, Isocyanates, Hydrogen cyanide, Carbon monoxide, Carbon dioxide.

Unusual Fire and Explosion Hazards: Material reacts slowly with water releasing carbon dioxide can cause pressure buildup and rupture of closed containers. Elevated temperatures accelerate this reaction. Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Dense smoke is produced when product burns.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water is not recommended, but may be applied in large quantities as a fine spray when other extinguishing agents are not available. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Use water spray to cool fire-exposed containers and fire-affected zone until fire is out. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this SDS.

Special Protective Equipment and Precautions for fire fighters: Wear NIOSH or OSHA approved self-contained breathing apparatus in positive pressure mode with full face piece and full protective gear. Isolate the scene by removing all persons from the incident area. No action should be taken involving any personal risk or without suitable training. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Keep personnel out of low areas. Keep upwind of spill. Spilled material may cause a slipping hazard. Ventilate area of leak or spill. If available, use foam to smother or suppress. See Section 10 for more specific information. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. Inform the relevant authorities if the product has caused environmental pollution. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. **Absorb with materials such as:** Dirt. Vermiculite. Sand. Clay. **Do NOT use absorbent materials such as:** Cement powder (Note: may generate heat). Collect in suitable and properly labeled open containers. Do not place in sealed containers. Suitable containers include: Metal drums. Plastic drums. Polylined fiber pacs. Wash the spill site with large quantities of water. Attempt to neutralize by adding suitable decontaminant solution: Formulation 1: sodium carbonate 5 - 10%; liquid detergent 0.2 - 2%; water to make up to 100%, OR Formulation 2: concentrated ammonia solution 3 - 8%; liquid detergent 0.2 - 2%; water to make up to 100%. If ammonia is used, use good ventilation to prevent vapor exposure. Contact your supplier for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Residues from spill cleanup may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste. For major spills, see Section 1 for the Emergency contact; for further disposal measures, see Section 13.

SECTION 7 – HANDLING AND STORAGE

Precautions for safe handling: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling. Keep container tightly closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Spills of these organic materials on hot fibrous insulations may lead to lowering of the auto-ignition temperatures possibly resulting in spontaneous combustion.

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 asthma, chronic respiratory disease or prior allergic reactions to isocyanates and those with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not handle until all safety precautions have been read and understood.

Conditions for safe storage, including any incompatibilities: Store in a dry place. Protect from atmospheric moisture. Do not store product contaminated with water to prevent potential hazardous reaction. Segregate from acids and acid forming substances. Protect from freezing. See Section 10 for more specific information.

Storage stability: Stable under normal conditions.

Recommended storage temperature: 60 - 90°F (16 - 32°C)

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. Employees and consumers should be warned of health risks associated with product use. See Section 8 for additional information on hygiene measures.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters/Occupational exposure limit values: Components listed in the OSHA Occupational Chemical and/or OARS-WEEL Database.

OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling Peak		NIOSH REL Up to 10-hour TWA (ST) STEL (C) Ceiling		ACGIH TLV® 8-hour TWA (ST) STEL (C) Ceiling		Cal/OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling Peak	
4,4-DIPHENYLMETHANE DIISOCYANATE (MDI) – CAS # 101-68-8							
PEL-TWA	---	REL-TWA	0.005 ppm (0.05 mg/m ³)	TLV-TWA	0.005 ppm [1985]	PEL-TWA	0.005 ppm (0.051 mg/m ³)
PEL-STEL	---	REL-STEL	---	TLV-STEL	---	PEL-STEL	---
PEL-C	0.02 ppm (0.2 mg/m ³)	REL-C	0.020 ppm (0.2 mg/m ³) [10 minutes]	TLV-C	---	PEL-C	---
		IDLH	75 mg/m ³				
Skin Notation	N	Skin Notation	N	Skin Notation	N	Skin Notation	N
Carcinogenicity classifications: IARC-3, EPA-CBD;D							
AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3: -NA/5 mg/m ³ /55 mg/m ³							
AIHA OARS-WEEL: ---							

PROPANE-1,2-DIOL, PROPOXYLATED – CAS # 25322-69-4							
PEL-TWA	---	REL-TWA	---	TLV-TWA	---	PEL-TWA	---
PEL-STEL	---	REL-STEL	---	TLV-STEL	---	PEL-STEL	---
PEL-C	---	REL-C	---	TLV-C	---	PEL-C	---
		IDLH	---				
Skin Notation	---	Skin Notation	---	Skin Notation	---	Skin Notation	---
Carcinogenicity classifications: ---							
AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3: ---							
AIHA OARS-WEEL: 10 mg/m ³ (2009)							
DIBUTYL PHTHALATE – CAS # 84-74-2							
PEL-TWA	5 mg/m ³	REL-TWA	5 mg/m ³	TLV-TWA	5 mg/m ³ [1990]	PEL-TWA	5 mg/m ³
PEL-STEL	---	REL-STEL	---	TLV-STEL	---	PEL-STEL	---
PEL-C	---	REL-C	---	TLV-C	---	PEL-C	---
		IDLH	4000 mg/m ³				
Skin Notation	N	Skin Notation	N	Skin Notation	N	Skin Notation	N
Carcinogenicity classifications: EPA-D							
AIHA emergency response planning guidelines - ERPG-1/ERPG-2/ERPG-3: ---							
AIHA OARS-WEEL: ---							

Advice on system design: Provide process enclosures, local exhaust ventilation or other engineering controls to maintain recommended PEL.

Appropriate engineering controls: Use only with adequate ventilation. Diisocyanates can only be smelled if the occupational exposure limit has been exceeded considerably. Emissions from ventilation or process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Personal protective equipment:

Eye/face protection:

When directly handling liquid product, eye protection is required. Examples of eye protection include safety glasses and goggles or full face shield when there is a greater risk of splash. Contact lenses should not be worn when working with chemicals.

Skin/body protection:

Avoid contact with skin. Impervious gloves (nitrile butyl rubber, neoprene and PVC) should be worn always when working with this product. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact. Dispose contaminated gloves after use in accordance with good laboratory practices. Body should be covered with appropriate clothing (apron, arm covers or full body suit) depending on the task being performed and the risks involved. Protective clothing should be selected and used in accordance with "Guidelines for the Selection of Chemical Protective Clothing" published by ACGIH. Wash contaminated clothing before reuse. Store work clothing separately. Appropriate footwear should be also selected based on the task being performed and the risks involved.

Respiratory protection:

Use local or general ventilation to control exposures below applicable exposure limits. When ventilation is inadequate, use either an atmosphere supplying respirator or NIOSH or OSHA approved air-purifying respirator for organic vapors. Respirator must be properly fitted and its selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Additional Protective Measures: Educate and train employees in safe handling of this product. Follow all label instructions. As a general hygiene practice, wash hands and face after use. Emergency eyewash fountains and safety shower should be in close proximity as a matter of good practice.

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, further exposure cannot be permitted. The Occupational Exposure Limits listed do not apply to previously sensitized individuals. Sensitized individuals should be removed from any further exposure.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light yellow Liquid
Odor:	Musty
Odor threshold:	No data available
pH:	No data available
Melting point/ freezing point:	No data available
Initial boiling point and boiling range:	314°C (597°F)
Flash point:	199°C (390°F)
Evaporation rate:	Negligible
Flammability (solid, gas):	Not flammable
Upper/ lower flammability or explosive limits:	Not relevant
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	No data available
Solubility (water):	Insoluble
Partition coefficient n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

SECTION 10 – STABILITY AND REACTIVITY

Reactivity: Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom, but react slowly at the interface. Reaction with water will generate carbon dioxide and heat.

Chemical stability: Stable under recommended storage conditions. Product is hygroscopic; contamination with moisture will negatively affect product performance. Avoid unintended contact with incompatible chemicals; the reaction will generate heat.

Possibility of hazardous reactions: Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Polymerization can be catalyzed by: Strong bases. Water.

Incompatible materials: Avoid contact with: Acids. Alcohols. Amines. Water. Ammonia. Bases. Metal compounds. Moist air. Strong oxidizers. Diisocyanates react with many materials and the rate of reaction increases with temperature as well as increased contact; these reactions can become violent. Contact is increased by stirring or if the other material mixes with the diisocyanate. Diisocyanates are not soluble in water and sink to the bottom, but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat. Avoid contact with metals such as: Aluminum. Zinc. Brass. Tin. Copper. Galvanized metals. Avoid contact with absorbent materials such as: Moist organic absorbents. Avoid unintended contact with polyols. The reaction of polyols and isocyanates generate heat.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition.

SECTION 11 – TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, Skin and Eye Contact, Ingestion.

Symptoms of exposure:

Acute Toxicity:**Oral:**

Not classified.

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

Dermal:

Not classified.

May be harmful in contact with skin. Adverse symptoms may include irritation and redness.

Inhalation:

Harmful if inhaled.

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

Skin corrosion / irritation:

Causes skin irritation.

Irritating to skin. Skin contact may result in dermatitis, either irritative or allergic.

Serious eye damage / eye irritation:

Causes serious eye irritation.

Irritating to eyes. Adverse symptoms may include tearing, redness and itching. May cause slight temporary corneal injury.

Specific target organ toxicity, single exposure:

May cause respiratory irritation.

Aspiration hazard:

Not classified.

Chronic Toxicity:**Respiratory and Skin Sensitizer:**

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Has caused allergic skin reactions when tested in guinea pigs. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

- 4,4'-Methylenediphenyl diisocyanate (MDI) – CAS # 101-68-8
- Methylenediphenyl diisocyanate – CAS # 26447-40-5
- Methylenediphenyl diisocyanate, Homopolymer – CAS # 39310-05-9

Germ cell mutagenicity:

Not classified.

Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative.

Animal mutagenicity studies were predominantly negative. Contains component(s) which were negative in some in vitro genetic toxicity studies and positive in others. Contains component(s) which were negative in some animal genetic toxicity studies and positive in others.

Carcinogenicity:

Not classified.

Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Reproductive toxicity:

Not classified.

In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Specific target organ toxicity, repeated exposure:

May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Medical conditions aggravated by overexposure:

The isocyanate component is a respiratory sensitizer. Respiratory sensitization may result in allergic (asthma-like) signs in the lower respiratory tract including wheezing, shortness of breath and difficulty breathing, the onset of which may be delayed. Repeated inhalation of high concentrations may cause lung damage, including reduced lung function, which may be permanent. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Persons with history of respiratory disease or hypersensitivity should not be exposed to this product. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

Toxicity test results: Not available for mixture. Results for similar components:

Components	Test Results
4,4'-Methylenediphenyl diisocyanate (MDI) CAS # 101-68-8	<p><u>Acute Toxicity</u> Oral LD50 (Rat): >2,000 mg/kg – <i>No deaths occurred at this concentration. Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.</i> Dermal LD50 (Rabbit): >9,400 mg/kg – <i>Prolonged skin contact is unlikely to result in absorption of harmful amounts.</i> Inhalation LC50 (Rat), 1hr: 2.24 mg/L - <i>At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.</i> Skin corrosion/irritation: Prolonged contact may cause moderate skin irritation with local redness. Repeated contact may cause moderate skin irritation with local redness. May stain skin. Serious eye damage/eye irritation: May cause moderate eye irritation. May cause slight temporary corneal injury. Aspiration Hazard: Based on physical properties, not likely to be an aspiration hazard.</p> <p><u>Chronic Toxicity</u> Sensitization: SKIN: Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization. RESPIRATORY: May cause allergic respiratory reaction. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening. Teratogenicity: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. Reproductive: No relevant data found. Mutagenicity: Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative. Carcinogenicity: Not classified. Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m3) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI. STOT-SE: May cause respiratory irritation. Route of Exposure: Inhalation. Target Organs: Respiratory Tract. STOT-RE: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.</p>
Methylenediphenyl diisocyanate CAS # 26447-40-5	<p><u>Acute Toxicity</u> Oral LD50 (Rat): >2,000 mg/kg – <i>No deaths occurred at this concentration. Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.</i> Dermal LD50 (Rabbit): >9,400 mg/kg – <i>Prolonged skin contact is unlikely to result in absorption of harmful amounts.</i> Inhalation LC50 (Rat), 1hr, dust/mist, 2.24 mg/L - <i>At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.</i> Skin corrosion/irritation: Prolonged contact may cause moderate skin irritation with local redness. Repeated contact may cause moderate skin irritation with local redness. May stain skin. Serious eye damage/eye irritation: May cause moderate eye irritation. May cause slight temporary corneal injury. Aspiration Hazard: Based on physical properties, not likely to be an aspiration hazard.</p>

	<p><u>Chronic Toxicity</u> Sensitization: SKIN: Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization. RESPIRATORY: May cause allergic respiratory reaction. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening. Teratogenicity: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. Reproductive: No relevant data found. Mutagenicity: Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative. Carcinogenicity: Not classified. Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI. STOT-SE: May cause respiratory irritation. Route of Exposure: Inhalation. Target Organs: Respiratory Tract. STOT-RE: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.</p>
Methylenediphenyl diisocyanate, Homopolymer CAS # 39310-05-9	<p><u>Acute Toxicity</u> Oral LD50 (Rat): >10,000 mg/kg – <i>Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.</i> Dermal LD50 (Rabbit): >9,400 mg/kg – <i>Prolonged skin contact is unlikely to result in absorption of harmful amounts.</i> Inhalation LC50 (Rat), 1hr, dust/mist 2.24 mg/L - <i>At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.</i> Skin corrosion/irritation: Prolonged contact may cause moderate skin irritation with local redness. Repeated contact may cause moderate skin irritation with local redness. May stain skin. Serious eye damage/eye irritation: May cause moderate eye irritation. May cause slight temporary corneal injury. Aspiration Hazard: Based on physical properties, not likely to be an aspiration hazard. <u>Chronic Toxicity</u> Sensitization: SKIN: Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization. RESPIRATORY: May cause allergic respiratory reaction. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening. Teratogenicity: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals. Reproductive: No relevant data found. Mutagenicity: Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative. Carcinogenicity: Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI. STOT-SE: May cause respiratory irritation. Route of Exposure: Inhalation. Target Organs: Respiratory Tract. STOT-RE: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.</p>
Propane-1,2-diol, propoxylated CAS # 25322-69-4	<p><u>Acute Toxicity</u> Virtually nontoxic after a single skin contact. Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Oral LD50: >2,000 mg/kg (Rat) Inhalation: No test data available. Dermal: Draize Test – Non-Irritant (Rabbit) Skin corrosion/irritation: No irritation is expected under intended use and appropriate handling. Serious eye damage/eye irritation: No irritation is expected under intended use and appropriate handling.</p>

	<p><u>Chronic Toxicity</u> Repeated oral uptake of the substance did not cause substance-related effects. Repeated inhalative uptake of the substance did not cause substance-related effects. Repeated dermal uptake of the substance did not cause substance-related effects. Respiratory or skin sensitization: No test data available. Germ cell mutagenicity: The chemical structure does not suggest a specific alert for such an effect. No applicable information available. Reproductive: The chemical structure does not suggest a specific alert for such an effect. No applicable information available. Carcinogenicity: The chemical structure does not suggest a specific alert for such an effect. No applicable information available. STOT-SE: No test data available. STOT-RE: No test data available.</p>
Propylene Carbonate CAS # 108-32-7	<p><u>Acute Toxicity</u> Oral: No test data available. Dermal LD50: >2,000 mg/kg (Rabbit) – OECD Test Guideline 402 Inhalation: No test data available. Skin corrosion / irritation: No skin irritation (Rabbit) – OECD Test Guideline 404 Serious eye damage / eye irritation: Irritating (Rabbit) – OECD Test Guideline 405 <u>Chronic Toxicity</u> Respiratory or skin sensitization: No test data available. Germ cell mutagenicity: Negative – OECD Test Guideline 474 Reproductive: No test data available. Carcinogenicity: Not classified STOT-SE: Not classified STOT-RE: Not classified Additional Information: RTECS: FF9650000 Nausea, Headache, Vomiting, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.</p>
Dibutyl phthalate CAS # 84-74-2	<p><u>Acute Toxicity</u> Oral LD50: 6,279 mg/kg (Rat) – OECD Test Guideline 401 Dermal LD50: >21,000 mg/kg (Rabbit) – RTECS Inhalation LC50: 4 h - >, 15.68 mg/l (Rat) – ECHA Skin corrosion / irritation: No skin irritation, 4 h (Rabbit) – OECD Test Guideline 404 Serious eye damage / eye irritation: No eye irritation, 72 h (Rabbit) – OECD Test Guideline 405 <u>Chronic Toxicity</u> Respiratory or skin sensitization: Negative (Guinea pig) – OECD Test Guideline 406 Germ cell mutagenicity: Negative – Ames test, S. typhimurium Reproductive: May damage the unborn child. May damage fertility. Carcinogenicity: Not classified STOT-SE: Not classified STOT-RE: Not classified Additional Information: Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect level) - 152 mg/kg - LOAEL (Lowest observed adverse effect level) - 752 mg/kg Subchronic toxicity. RTECS: T10875000 Nausea, Dizziness, Headache To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.</p>

The products in question have been evaluated against the Hazardous Products Regulations (WHMIS 2015) and no additional classifications, ingredient disclosure or exposure limits are required for those regulations.

SECTION 12 – ECOLOGICAL INFORMATION
Ecotoxicity:

By considering the production and use of the substance, it is unlikely that product is harmful to aquatic organisms, neither acutely nor chronically. Immiscible with water, but will react with water to produce inert and non-biodegradable solids. Conversion to soluble products, including diamino-diphenylmethane (MDA), is very low under the optimal laboratory conditions of good dispersion and low concentration. In air, the predominant degradation process is predicted to be a relatively rapid OH radical attack, based on calculation and analogy with related diisocyanates.

Persistence and degradability:

Poorly biodegradable by OECD criteria. In contact with water the substance will hydrolyze slowly. After evaporation or exposure to the air, the product will be rapidly degraded by photochemical processes.

Bioaccumulative potential:

No significant accumulation in organisms is expected.

Mobility in soil:

Not expected.

Other adverse effects:

No known significant effects or critical hazards.

Ecotoxicity test results: Not available for mixture. Results for similar components:

Components	Test Results
4,4'-Methylenediphenyl diisocyanate (MDI) CAS # 101-68-8	<p><u>Acute Toxicity</u> Fish LC50: Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent Aquatic invertebrates: EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent Aquatic plants: NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent Bacteria EC50: Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg Terrestrial Planta EC50: Avena sativa (oats), Growth inhibition, 1,000 mg/l EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l</p> <p><u>Ecological Data</u> Persistence and degradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 302C or Equivalent Bioaccumulative Potential: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d Mobility in Soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas. <i>Assessment of aquatic toxicity: Test data is based on information from similar material. The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).</i></p>
Methylenediphenyl diisocyanate CAS # 26447-40-5	<p><u>Acute Toxicity</u> Fish LC50: Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent Aquatic invertebrates: EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent Aquatic plants: NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent Bacteria EC50: Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg Terrestrial Plants EC50: Avena sativa (oats), Growth inhibition, 1,000 mg/l EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l</p> <p><u>Ecological Data</u> Persistence and degradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 302C or Equivalent Bioaccumulative Potential: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d Mobility in Soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.</p>


	<p><i>Assessment of aquatic toxicity: Test data is based on information from similar material. The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).</i></p>
<p>Methylenediphenyl diisocyanate, Homopolymer CAS # 39310-05-9</p>	<p>Acute Toxicity Fish LC50: Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent Aquatic invertebrates EC50: Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent Aquatic plants: NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent Bacteria EC50: Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg Terrestrial Plants: EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l</p> <p>Ecological Data Persistence and degradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related. Biodegradation: 0 % Exposure time: 28 d Method: OECD Test Guideline 302C or Equivalent Bioaccumulative Potential: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d Mobility in Soil: In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.</p> <p><i>Assessment of aquatic toxicity: Test data is based on information from similar material. The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).</i></p>
<p>Propane-1,2-diol, propoxylated CAS # 25322-69-4</p>	<p>Fish LC50: >100 mg/l, 96h (Oncorhynchus mykiss)</p> <p>Ecological Data Persistence and degradability: Poorly biodegradable. Bioaccumulative Potential: Does not significantly accumulate in organisms. Mobility in soil: Adsorption to solid soil phase is not expected. Additional information: Adsorbable organically-bound halogen (AOX): This product contains no organically-bound halogen. The product has not been tested. Do not discharge product into the environment without control. <i>Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms.</i></p>
<p>Propylene Carbonate CAS # 108-32-7</p>	<p>Acute Toxicity Fish LC50: >1,000 mg/l, 96h Cyprinus carpio (Carp) – OECD Test Guideline 203 Aquatic Invertebrates EC50: >1,000 mg/l, 48h Daphnia magna (Water flea) – OECD Test Guideline 202 Aquatic Plants/Algae EC50: >900 mg/l, 72h Desmodesmus subspicatus (Green algae) – OECD Test Guideline 201 Bacteria EC10: 7,400 mg/l, 16h Pseudomonas putida – DIN 38 412 Part 8</p> <p>Ecological Data Persistence and degradability: >90% Readily biodegradable Bioaccumulative Potential: No test data available. Mobility in soil: No test data available.</p>
<p>Dibutyl phthalate CAS # 84-74-2</p>	<p>Acute Toxicity Fish LC50: 0.48 mg/l, 96h Cyprinus carpio (Carp) – OECD Test Guideline 203 Aquatic Invertebrates EC50: 2.99 mg/l, 48h Daphnia magna (Water flea) – US-EPA Aquatic Plants/Algae EC50: 0.75 mg/l, 10d Pseudokirchneriella subcapitata (Green algae) – US-EPA Bacteria EC50: 2.2 mg/l, 24h Tetrahymena pyriformis – ECHA</p> <p>Ecological Data Persistence and degradability: 81% Readily biodegradable – Regulation (EC) No. 440/2008, Annex, C.4-C Bioaccumulative Potential: 2,165 – Does not bioaccumulate Mobility in soil: No test data available. PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not Conducted. Other adverse effects: Discharge into the environment must be avoided.</p>

SECTION 13 – DISPOSAL CONSIDERATIONS

Product Disposal: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. The generation of waste should be avoided or minimized wherever possible. If product becomes a waste, it does not meet criteria of hazardous waste as defined in 40 CFR 261, Subpart C and D. Do not discharge into sewer system. Spill cleanup residues may still be subject to RCRA storage and disposal requirements. Dispose waste in compliance with local, state and federal regulations via licensed waste disposal contractor.

Container disposal: Even after emptying, container may retain residues. Empty containers should be completely drained and safely stored until appropriately reconditioned or disposed through licensed contractor in accordance with government regulations. This material and its container must be disposed of in a safe way.

SECTION 14 – TRANSPORT INFORMATION

Non-bulk:	
Land transport, U.S. DOT:	Non-regulated
Sea transport, IMDG:	Non-regulated
Air transport, IATA/ICAO:	Non-regulated
Bulk:	This product is regulated if the amount in an individual container exceeds the Product Reportable Quantity. 4,4'-Methylenediphenyl diisocyanate (MDI), RQ: 5,000 lbs (2,270 kg); Product RQ: > 5,000 lbs
UN Number:	NA 3082
UN Proper Shipping Name:	Other regulated substances, liquid, n.o.s. (contains 4,4'-Methylenediphenyl diisocyanate (MDI))
Transport Hazard Class:	9
Packing Group:	III
Hazard Label:	

SECTION 15 – REGULATORY INFORMATION**U.S. FEDERAL REGULATIONS:****U.S. Toxic Substances Control Act:**

None present or none present in regulated quantities.

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

None present or none present in regulated quantities.

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:

- 4,4'-Methylenediphenyl diisocyanate (MDI), CAS # 101-68-8, RQ: 5,000 lbs

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:

- 4,4'-Methylenediphenyl diisocyanate (MDI), CAS # 101-68-8

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.

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, Pennsylvania or Rhode Island Right to Know Substance Lists:

- 4,4'-Methylenediphenyl diisocyanate (MDI) – CAS # 101-68-8
- Methylenediphenyl diisocyanate – CAS # 26447-40-5

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

- 4,4'-Methylenediphenyl diisocyanate (MDI) – CAS # 101-68-8

California Prop. 65 Components:

This product contains no substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute unless otherwise listed. For more information, visit www.P65Warnings.ca.gov

NFPA Hazard Rating:

HEALTH	FIRE	INSTABILITY	SPECIFIC
2	1	1	W
0 = Normal 1 = Slight 2 = Hazardous 3 = Extreme Danger 4 = Deadly	(Flash Points) 0 = Will not burn 1 = Above 200°F 2 = Below 200°F 3 = Below 100°F 4 = Below 73°F	0 = Stable 1 = Unstable if Heated 2 = Violent Chemical Change 3 = Shock and Heat May Detonate 4 = May Detonate	ACID (Acid) ALK (Alkaline) COR (Corrosive) OXY (Oxidizer) W (Use No Water)

HMIS Hazard Rating:

HEALTH	FLAMMABILITY	REACTIVITY	PROTECTIVE EQUIPMENT
2	1	1	X
0 = Normal 1 = Slight 2 = Hazardous 3 = Extreme Danger 4 = Deadly			X = Ask your Supervisor or Safety Specialist for handling instructions

Canada regulations/legislation:

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

International Regulations/Inventories:

No data available.

SECTION 16 – OTHER INFORMATION
LEGEND

GHS	Globally Harmonized System
CAS	Chemical Abstracts Services
EC	European Community
EPA	Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
ACGIH	American Conference of Governmental Industrial Hygienists
NIOSH	National Institute of Occupational Safety and Health
PEL	Permissible Exposure Limits
TLV	Threshold Limit Value
REL	Recommended Exposure Limit
TWA	Time-Weighted Average
STEL	Short-term exposure limit
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
COD / BOD	Chemical Oxygen Demand / Biological Oxygen Demand
STOT, SE	Specific Target Organ Toxicity following Single Exposure
STOT, RE	Specific Target Organ Toxicity following Repeated Exposure
DOT	Department of Transportation
IMDG	International maritime dangerous goods code
IATA, ICAO	International Air Transport Association, International Civil Aviation Organization
TSCA	Toxic Substances Control Act
EPCRA	Emergency Planning and Community Right-to-Know Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
RQ	Reportable Quantity
EHS	Extremely Hazardous Substances
DSL	Domestic Substance List
RTECS	Registry of Toxic Effects of Chemical Substances
WHMIS	Workplace Hazardous Materials Information System



SAFETY DATA SHEET

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Disclaimer: The data set forth in this sheet are based on information provided by the suppliers of the raw materials and chemicals used in the manufacture of the aforementioned product. **Rhino Linings Corporation** makes no warranty with respect to the accuracy of the information provided by their suppliers, and disclaims all liability of reliance thereof.