MATERIAL SAFETY DATA SHEET

Section 1 – Product and Company Identification

Company Identification ADHESIVES TECHNOLOGY CORP. 450 East Copans Road Pompano Beach, FL 33064	Emergency Phone (800) 255 – 3924 (24 hours) CHEM-TEL Contact Phone (800) 892 – 1880 (9:00 a.m. – 5:00 p.m. EST)

Effective Date: 11/10/10	Print Date: 11/10/10	MSDS #: CB-CSR

Product Name: Crackbond CSR | **Prepared By:** Richard Boland (x107)

Section 2 – Composition/Information on Ingredients

Part A: Hazardous Component	CAS #	% By Weight	PEL	TLV	STEL
Polymeric MDI	9016-87-9	< 50%	NE	NE	NE
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	6846-50-0	< 40%	NE	NE	NE
4,4'-Diphenylmmethane Diisocyanate	101-68-8	< 20%	.02 ppm	.005 ppm	NE
Part B: Hazardous Component	CAS #	% By Weight	PEL	TLV	STEL
2,2,4-trimethyl-1,3-pentanediol diisobutyrate	6846-50-0	< 50%	NE	NE	NE
N,N,N',N'-Tekrakis (2-Hydroxylpropyl)Ethylenediamine	102-60-3	< 25%	NE	NE	NE
Polyether Triol	25791-96-2	< 20%	NE	NE	NE
1,4-Butanediol	110-63-4	< 6%	NE	NE	NE

Section 3 – Hazards Identification

Known Hazards: Part A: Skin and eye irritation. Sensitizer; **Part B:** Skin and eye irritation. Sensitizer;

Signs and Symptoms of Exposure:
Part A: Potential Health Effects- Prolonged or repeated skin contact may be toxic. fumes may be toxic. ingestion may be poisonous. Emergency Treatment- Remove source of irritation, wash contacted area, consult physician.
Part B: *Eyes*: Acute eye contact.-May cause minor to moderate eye irritation. Chronic Eye Contact: No know effects from chronic exposure. *Skin:* Acute Skin Contact- Dermal exposure may cause minor to moderate skin irritation. Permanent damage is not expected. Chronic Skin Contact- No known effects from chronic exposure. *Inhalation:* Acute Inhalation- No significant adverse effects to health is expected to occur from inhalation. Chronic Inhalation- No known effects from chronic exposure.

Potential Health Effects: Prolonged or repeated skin contact may be toxic. Ingestion may be poisonous.
Emergency Treatment: Remove source of irritation, wash contacted area, consult physician.
Systematic Effects: Repeated ingestion of large amounts of this material may cause severe kidney, liver and gastrointestinal effects. Symptoms of excessive overexposure may be central nervous system effects, nausea, vomiting, and anesthetic or narcotic effects.

Medical Conditions Aggravated by Exposure: No known medical conditions aggravated by exposure.

Routes of Exposure: Absorption, Dermal. Inhalation, ingestion

Carcinogenicity: Neither MDI nor polymeric MDI are listed by the NTP, IARC, or regulated by OSHA as carcinogens.

Section 4 – First Aid Measures

Inhalation: Move to fresh air; give oxygen if breathing is difficult. Call a physician if symptoms persist.

Eyes: Flush with copious amount of water, preferable lukewarm water for at least 15 minutes, holding eyelids open all the time. Refer individual to physician or ophthalmologist for immediate follow up.

Skin: Remove contaminated clothing. Wash affected skin thoroughly with soap and water. Wash contaminated clothing thoroughly before reuse. For sever exposures, get under safety shower after removing clothing, then get medical attention. For lesser exposures, seek medical attention if irritation develops or persists after the area is washed.

Ingestion: DO NOT INDUCE VOMITING. Give 1 – 2 cups of milk or water to drink. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. Consult a physician immediately.

Inhalation: Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as necessary. Obtain medical attention. Asthmatic type symptoms may develop and may be immediate or delayed up to several hours. Consult physician should this occur.

Other: Referral to a physician is recommended if there is any question about the seriousness of the injury/exposure. If Sensitization occurs, future contact with the material should be avoided.

Section 5 – Fire Fighting Measures

Flash Point: *Part A:* 390°F. *Part B:* 265°F | **Extinguisher Media:** Dry Chemical; Carbon Dioxide; Foam; Water Spray for large fires

Special Fire Fighting Procedures: Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustions (see stability and reactivity). At temperatures greater than 400˚F (204˚C), isocyanates can polymerize and decompose which can cause pressure build-up in closed containers. Explosive rupture is possible. Therefore, use cold water to cool fire-exposed containers.

Unusual fire and Explosion Hazards: None known. Thermal decomposition products can be formed.

Section 6 – Accidental Release Measures

Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment, including respiratory equipment during clean-up. If temporary control of isocyanate vapor is required, a blanket of protein foam (available at most fire departments) may be placed over the spill. Large quantities may be pumped into closed, but not sealed, containers for disposal.
Minor Spill: Absorb isocyanates with sawdust or other absorbent, shovel into suitable unsealed containers, transport to well-ventilated area (outside) and treat with large amounts of water. Allow to stand uncovered for 48 hours to let CO_2 gas escape.
Clean up: Decontaminate floor with water, letting stand for at least 15 minutes.

Section 7 – Handling and Storage

Avoid contact with eyes, skin and clothing. Do not breathe aerosols, or vapors. Avoid prolonged inhalation of vapors. Use with adequate ventilation. Wash thoroughly after handling. Store in tightly sealed containers in a cool dry place out of direct rays of the sun. Do not reseal containers if contamination is suspected. Keep from freezing. Store between 65º and 85º F. DO NOT EXCEED 120°F.

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Section 8 – Exposure Control/Personal Protection

Respiratory Protection: Concentrations greater than the TLV or PEL can occur when isocyanates are sprayed, heated or used in a poorly ventilated area. In such cases, or whenever concentrations of isocyanate exceed the TLV or PEL, respiratory protection must be worn. In situations where isocyanates are not sprayed, heated or used in a poorly ventilated area, and a supplied air or self-contained breathing apparatus is unavailable or its use impractical, at least an air purifying respirator equipped with an organic vapor cartridge and particulate pre-filters must be worn. Observe OSHA regulations for respirator use (29 CFR 1910.134).

Ventilation: Local exhaust should be used to maintain levels below the TLV or PEL whenever product is processed, heated or spray applied.

Eye Protection: Wear splash proof chemical goggles. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be used in combination with a full face shield.

Protective Gloves: Permeation resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing.

Monitoring: Isocyanate exposure levels must be monitored. Monitoring of airborne isocyanates in the breathing zone of individuals should become part of the overall employee exposure characterization program. Monitoring techniques have been developed by NIOSH and OSHA.

Medical Surveillance: Medical supervision of all employees who handle or come in contact with isocyanates is recommended.

Other Protective Clothing or Equipment: Wear appropriate apparel to prevent skin contact. Safety showers & eyewash stations should be available.

Section 9 – Physical and Chemical Properties

Physical Form: *Part A:* Liquid *Part B:* Liquid		**Specific Gravity (g/cc):** *Part A:* 1.069 *Part B:* 1.03	
Color: *Part A:* Amber *Part B:* Bluish Gray		**Freezing Point:** *Part A:* Below 32°F for MDI *Part B:* Not Determined	
Odor: Part A: Sweet **Part B:** Slight	**pH: Part A:** N/D **Part B:**	**Boiling Point: Part A:** 406°F. (209°C) **Part B:** Not determined	**VOC Content:** Negligible
Solubility in Water: Part A: Soluble. Reacts slowly with water to liberate CO_2 gas; **Part B:** Slightly soluble			**Evaporation Rate:** Non-volatile
Vapor Pressure: Part A: Less than 1 x 10^{-5} mm Hg @ 77˚F (25˚C) for MDI; **Part B:** 0.1 mm Hg @ 77˚F (25˚C)			**Vapor Density:** 8.5 (MDI) (Air = 1)

Section 10 – Stability and Reactivity

Hazardous Polymerization: May occur. Contact with moisture, other materials which react with isocyanates or temperatures above 400°F (204°C), may cause polymerization. **Stability:** Stable

Incompatibility: Water, amines, strong bases alcohols. Will cause some corrosion to copper alloys and aluminum.

Hazardous Decomposition Products: Thermal decomposition can yield carbon monoxide, oxides of nitrogen, traces of HCN, MDI.

Conditions to Avoid: Exposure to excessive heat and storage above 95º F will shorten shelf life

Section 11 – Toxicological Information

Part A: Acute Toxicity; *Oral LD50*- The acute oral LD50 (rat) for this material is greater than 10,000 mg/kg. *Dermal LD50*- The acute dermal LD50 (rabbit) is greater than 5,000 mg/kg. This product may be a skin irritant. *Inhalation LC50*- An acute LC50 for this product is not available. *Eye effects*- This product should be considered a moderate eye irritant. Eye contact may cause corneal opacity. *Skin Effects*- Chronic dermal exposure may cause sensitization to diisocyanates. *Sensitization*- Chronic inhalation of this product may cause sensitization. *Chronic Toxicity*- Not Known. *Carcinogenicity/Mutagenicity*- This product is not expected to be carcinogenic or mutagenic.
Part B: No data is available at this time

Section 12 – Ecological Information

Part A: Aquatic Toxicity- 48 hours LC50 for Daphnia magna 112-150 mg/L; **Part B:** No data is available at this time

Section 13 – Disposal Considerations

If discarded in its purchased form, this material does not meet the criteria of a hazardous waste as defined in 40 CFR 261, Subpart C. As a non-hazardous liquid waste, it should be disposed of in accordance with local, state and federal regulations. Incineration is the preferred method.

Section 14 – Transport Information

This material is not regulated as a hazardous material by DOT, IMO, IATA.

Section 15 – Regulatory Information

Hazard Communication: This MSDS has been prepared in accordance with the federal OSHA Hazard Communication Standard.

OSHA Status: Hazardous / irritant | **TSCA Inventory Status:** Chemical components listed on TSCA inventory

CERCLA Reportable Quantity: Not Applicable

EPA Waste Code(s): Not regulated by EPA as a hazardous waste

SARA Title III:

Section 302 Extremely Hazardous Substance: **Part A:** TPQ – None established;	**Part B:** None
Section 311/312 Hazard Categories: **Part A:** Health Hazard: Immediate (Acute);	**Part B:** Immediate Health Hazard, Delayed Health Hazard
Section 313 Toxic Chemicals: **Part A:** None present	**Part B:** None

Section 16 – Other Information

HMIS Rating	Part A	Part B	NFPA Hazard Rating	Part A	Part B
Health	2	0	**Health**	2	2
Flammability	1	0	**Flammability**	1	1
Reactivity	0	1	**Reactivity**	1	1
PPE	B	0	**Other**		

Abbreviations: PEL = OSHA Permissible Exposure Limit; **TLV** = ACGIH Threshold Limit Value; **C** = Ceiling; **STEL** = Short Term Exposure Limit; **NE** = None Established; **NA** = Not Applicable. **ND** = Not Determined; **ppm** = parts per million