

**Safety Data Sheet**  
**CRACKBOND® CSR-FLEX**

Created On: 04/20/2015  
 Revision Date: 02/29/2016  
 Version: 2.0

**1. Product and Company Identification**

**Product Name:** CRACKBOND CSR-FLEX (Part A)

**Product Use:** Concrete Repair

**Company Identification:**  
 ADHESIVES TECHNOLOGY CORP.  
 450 East Copans Road  
 Pompano Beach, FL 33064  
 Contact Phone: 1.800.892.1880  
 (9:00a.m. – 5:00p.m. EST)

**Emergency Phone:**  
 Chem-Tel:  
 1.800.255.3924 (24hrs)

**2. Hazards Identification (Part A)**

**GHS Classification**

Health	Physical	Environmental
Skin Irritant Cat 2 Eye Irritant Cat 2A Acute Inhalation Cat 1 Resp Sensitizer Cat 1	Not Classified	Toxic to Aquatic Life Cat-2

GHS Label:

**Danger:**



Skin Sensitizer  
 Eye Irritant  
 Skin Irritant



Respiratory Sensitizer

**Emergency Overview**

May cause skin sensitization  
 Causes skin and eye irritation  
 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
 Wash skin thoroughly after handling  
 Avoid breathing fume/gas/mist/vapors/spray  
 Wear protective gloves/ protective clothing/ eye protection/ face protection  
 Use in a well-ventilated area

**Primary Route of Exposure**

Eyes, skin and oral

**Carcinogenicity**

This product or one of its ingredients present at 0.1% or more is NOT listed as a carcinogen or suspect carcinogen by NTP, IARC, Prop 65 or OSHA.

## Safety Data Sheet CRACKBOND® CSR-FLEX

Created On: 04/20/2015  
Revision Date: 02/29/2016  
Version: 2.0

### 3. Composition/ Information on Ingredients (Part A)

<u>CAS Number</u>	<u>Content%</u>	<u>Chemical Name</u>
9016-87-9	30 - 50	Polymeric MDI
6846-50-0	20 - 40	2,2,4-trimethyl-1,3-pentanediol diisobutylate
101-68-8	10 - 20	4,4'-Diphenylmethane Diisocyanate

### 4. First Aid Measures (Part A)

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

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician if symptoms persist.

**Skin:** Remove contaminated clothing. Wash with mild soap and water. Get medical attention if skin irritation or dermatitis persists.

**Ingestion:** Give plenty of water. DO NOT induce vomiting. Call a physician immediately.

**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.

### 5. Fire Fighting Measures (Part A)

Flash Point: 199 °C (>390 °F)

Flammable Limits: N/A

#### Extinguisher Media

Carbon Dioxide, Dry Chemical, Water Fog

#### Unusual Fire and Explosion Hazard

None known. Thermal Decomposition can be formed.

#### 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.

### 6. Accidental Release Measures (Part A)

#### Personal Precautions:

Avoid all personal contact. In enclosed areas, cleanup personnel should wear self-contained breathing apparatus.

#### Environmental Precautions

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.

## Safety Data Sheet CRACKBOND® CSR-FLEX

Created On: 04/20/2015  
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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<sub>2</sub> gas escape. Clean up: Decontaminate floor with water, letting stand for at least 15 minutes.

### 7. Handling and Storage (Part A)

Containers should be stored between 64°F and 86°F. The shelf life for this product is 12 months. If container is exposed to high heat, 400°F (204°C) it can become pressurized and possibly rupture.

**Empty Container Precautions-** Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. Empty decontaminated containers should be crushed to prevent reuse. Do not heat or cut empty container with electric or gas torch. Gases may be highly toxic.

**Handling/Storage Precautions-** Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. Avoid contact with skin and eyes. Do not breathe aerosols or vapors. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Exposure to vapors of heated isocyanates can be extremely dangerous. Employee education and training in the safe use and handling of this compound are required under the OSHA Hazard Communication Standard

### 8. Exposure Control and Personal Protection (Part A)

#### Exposure Guidelines

Component	CAS#	OSHA PEL	TLV
4,4'-Diphenylmethane Diisocyanate	13463-67-7	.02 ppm	.005 ppm

**Engineering Measures:** Use local and general exhaust ventilation to maintain airborne concentrations below TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it.

#### Personal Protective Equipment

##### **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. A positive pressure, supplied air respirator or a self-contained breathing apparatus is recommended. 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. However, this should be permitted only for short periods of time (less than one hour) at relatively low concentrations (at or near the TLV or PEL). However, due to the poor warning properties of isocyanates, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29 CFR 1910.134).

##### **Eye/Face Protection**

Wear splash proof chemical goggles/ full face shield if there is a potential for splashing.

## Safety Data Sheet CRACKBOND® CSR-FLEX

Created On: 04/20/2015  
Revision Date: 02/29/2016  
Version: 2.0

### Skin / Body Protection

Wear Suitable gloves (neoprene, nitrile rubber or PVC) and protective clothing to mitigate exposure.

### Other Protective Clothing or Equipment

Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

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## 9. Physical and Chemical Properties (Part A)

Physical State:	Liquid
Appearance:	Yellow
Evaporation Rate:	N/D
Odor:	Sweet
Solubility in Water:	Soluble, reacts with water to liberate CO2 gas
Specific Gravity(g/cc):	1.07
Vapor Density(air = 1):	N/D
Vapor Pressure:	Less than 1 x 10 <sup>-5</sup> mm Hg @ 77°F (25°C) for MDI
VOC Content:	See section 9 of part B for VOC content
Freezing Point:	Below 32°F (0°C) for MDI
pH:	N/D
Boiling Point:	406°F. (209°C)

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## 10. Stability and Reactivity (Part A)

Stability:	Stable
Hazardous Polymerization:	May occur. Contact with moisture, other materials which react with isocyanates, or temperatures above 400°F (204°C), may cause polymerization.
Incompatibilities:	Water, amines, strong bases, alcohols. Will cause some corrosion to copper alloys and aluminum.
Decomposition Product By heat and fire:	carbon monoxide, oxides of nitrogen, traces of HCN, MDI vapors or aerosols.

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## 11. Toxicological Information (Part A)

**Acute Oral Toxicity:**  
Not Determined

**Acute Dermal Toxicity:**  
Not Determined

**Acute Inhalation Toxicity:**  
Not Determined

## Safety Data Sheet CRACKBOND® CSR-FLEX

Created On: 04/20/2015  
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### **Skin Irritation:**

Irritating to skin

The product has not been tested. The statement has been derived from the properties of the individual components.

### **Eye Irritation:**

Irritating to eyes.

The product has not been tested. The statement has been derived from the properties of the individual components.

### **Respiratory Irritation:**

Inhalation of vapors or mists may cause irritation to the respiratory system.

### **Sensitization:**

May cause allergic skin reaction and irritation to the respiratory system.

The product has not been tested. The statement has been derived from the properties of the individual components.

### **STOT – single exposure**

Not Determined

### **STOT – Repeated Exposure**

Not Determined

### **Carcinogenicity Classification:**

No Known Carcinogen

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## 12. Ecological Information (Part A)

### **Acute Toxicity for:**

#### **Fish:**

No Data Available

#### **Aquatic Invertebrates:**

48 hours LC50 for Daphnia magna 112-150 mg/L

#### **Algae:**

No Data Available

#### **Microorganisms:**

No Data Available

#### **Mobility:**

Considering the use of the substance, it is unlikely that significant environmental exposure in the air or water will arise.

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## 13. Disposal Considerations (Part A)

If the material as supplied becomes a waste, dispose in accordance with federal, state and local regulations.

**Safety Data Sheet**  
**CRACKBOND® CSR-FLEX**

Created On: 04/20/2015  
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 Version: 2.0

**14. Transportation Information (Part A)**

This product is not regulated as a hazardous material for transportation.

**15. Regulatory Information (Part A)**

HMIS Rating	
Health	*2
Flammability	1
Physical Hazard	1
PPE	G



**Hazard Rating:** 0 = minimal, 1 = Slight, 2 = moderate, 3 = severe, 4 = extreme

Federal Regulations

Federal Regulations

CERCLA RQ

SARA Title 311/312

CA Prop 65

TSCA

Health Hazard: Acute/Chronic

None Listed

Listed or Exempt

**16. Other Information (Part A)**

**Hazard Communication:** This SDS has been prepared in accordance with the federal OSHA Hazard Communication Standard

To the best of our knowledge, the information contained herein is accurate. However, Adhesives Technology Corp. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Additional information is available upon request.

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**1. Product and Company Identification**

**Product Name:** CRACKBOND CSR-FLEX (Part B)

**Product Use:** Concrete Repair

**Company Identification:**  
 ADHESIVES TECHNOLOGY CORP.  
 450 East Copans Road  
 Pompano Beach, FL 33064  
 Contact Phone: 1.800.892.1880  
 (9:00a.m. – 5:00p.m. EST)

**Emergency Phone:**  
 Chem-Tel:  
 1.800.255.3924 (24hrs)

**2. Hazards Identification (Part B)**

**GHS Classification**

Health	Physical	Environmental
Skin Irritant Cat 2 Irritant Eye Cat 2A STOT Single Cat 3	Not Classified	Not Classified

GHS Label:

**Warning:**



Causes serious eye irritation  
 Skin Irritant

**Emergency Overview**

Causes skin irritation  
 Causes eye irritation  
 May cause skin sensitization  
 May cause respiratory irritation  
 May be harmful if swallowed  
 May cause drowsiness or dizziness  
 Wash skin thoroughly after handling  
 Avoid breathing fume/gas/mist/vapors/spray  
 Wear protective gloves/ protective clothing/ eye protection/ face protection  
 Use in a well-ventilated area

**Primary Route of Exposure**

Eyes, skin and CNS

**Carcinogenicity**

This product or one of its ingredients present at 0.1% or more is NOT listed as a carcinogen or suspect carcinogen by NTP, IARC, Prop 65 or OSHA.

## Safety Data Sheet CRACKBOND® CSR-FLEX

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### 3. Composition/ Information on Ingredients (Part B)

<u>CAS Number</u>	<u>Content%</u>	<u>Chemical Name</u>
6846-50-0	30 - 50	2,2,4-trimethyl-1,3-pentanediol diisobutyrate
9003-11-6	10 - 20	Polyether Diol
110-63-4	3 - 7	Dipropylene glycol

### 4. First Aid Measures (Part B)

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

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician if symptoms persist.

**Skin:** Remove contaminated clothing. Wash with mild soap and water. Get medical attention if skin irritation or dermatitis persists.

**Ingestion:** Give plenty of water. DO NOT induce vomiting. Call a physician immediately.

**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.

### 5. Fire Fighting Measures (Part B)

Flash Point: 770-914°C (410-490°F)

Flammable Limits: N/A

#### **Extinguisher Media**

Carbon Dioxide, Dry Chemical, Water Fog

#### **Unusual Fire and Explosion Hazard**

None known. Thermal Decomposition can be formed.

#### **Special Fire Fighting Procedures**

Chemical; Carbon Dioxide; Water spray for large fires.

Special Fire Fighting Instructions- Use water to cool containers. Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters

### 6. Accidental Release Measures (Part B)

#### **Personal Precautions:**

Avoid all personal contact. In enclosed areas, cleanup personnel should wear self-contained breathing apparatus.

#### **Environmental Precautions**

Cover spills with sawdust, vermiculite, or other absorbent material to minimize spreading of the material before collecting.



## Safety Data Sheet CRACKBOND® CSR-FLEX

Created On: 04/20/2015  
Revision Date: 02/29/2016  
Version: 2.0

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### 7. Handling and Storage (Part B)

**Handling:** Avoid contact with eyes, skin and clothing. Avoid inhalation of vapors. Use with adequate ventilation. Use appropriate personal protection equipment (Section 8). Wash thoroughly after handling.

**Storage:** Store in a cool dry place away from direct sunlight. Keep from freezing. Recommended storage temperature range in between 64 °F (18 °C) / 86 °F (30 °C); Do not exceed 120 °F.

Special Sensitivity- Opened containers should be protected with a dry air or nitrogen padding. A drierrite or silica gel drying system on the vents can also be used.

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### 8. Exposure Control and Personal Protection (Part B)

**Engineering Measures:** Use local and general exhaust ventilation to maintain airborne concentrations below TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it.

#### Personal Protective Equipment

##### **Respiratory Protection**

None normally required. Use a NIOSH approved organic vapor chemical cartridge respirator when air movement is inadequate to control vapor build-up.

##### **Eye/Face Protection**

Wear splash proof chemical goggles/ full face shield if there is a potential for splashing.

##### **Skin / Body Protection**

Wear Suitable gloves (neoprene, nitrile rubber or PVC) and protective clothing to mitigate exposure.

##### **Other Protective Clothing or Equipment**

Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

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### 9. Physical and Chemical Properties (Part B)

Physical State	Liquid
Appearance:	Opaque black
Evaporation Rate:	N/A
Odor:	Slight Odor
Solubility in Water:	Slightly Soluble
Specific Gravity(g/cc):	1.075
Bulk density:	8.96 lbs/gal
Vapor Pressure:	N/D
VOC Content:	12 g/L (tested per ASTM D2369, Method D) 2.75 g/L (tested per ASTM D2369, Method E)
pH:	N/D
Boiling Point:	N/D

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### 10. Stability and Reactivity (Part B)

Stability:	Stable
Thermal Decomposition:	Can yield CO, CO <sub>2</sub> and organic Nitrogen compounds.
Incompatibility:	Strong acids, peroxides, and other oxidizing agents
Conditions to avoid:	Exposure to excessive heat and storage above 35°C (95°F) will shorten shelf life.

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### 11. Toxicological Information (Part B)

**Acute Oral Toxicity:**  
Not Determined

**Acute Dermal Toxicity:**  
Not Determined

**Acute Inhalation Toxicity:**  
Not Determined

**Skin Irritation:**  
Irritating to skin  
The product has not been tested. The statement has been derived from the properties of the individual components.

**Eye Irritation:**  
Moderate eye irritation.  
The product has not been tested. The statement has been derived from the properties of the individual components.

**Respiratory Irritation:**  
Inhalation of vapors or mists may cause irritation to the respiratory system.

**Sensitization:**  
May cause allergic skin reaction and irritation to the respiratory system.  
The product has not been tested. The statement has been derived from the properties of the individual components.

**STOT – single exposure**  
No Data Available

**STOT – Repeated Exposure**  
CNS

**Carcinogenicity Classification:**  
No known Carcinogen

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**Safety Data Sheet**  
**CRACKBOND® CSR-FLEX**

Created On: 04/20/2015  
 Revision Date: 02/29/2016  
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**12. Ecological Information (Part B)**

**Acute Toxicity for:**

**Fish:**

No Data Available

**Aquatic Invertebrates:**

No Data Available

**Algae:**

No Data Available

**Microorganisms:**

No Data Available

**Mobility:**

Considering the use of the substance, it is unlikely that significant environmental exposure is the air or water will arise.

**13. Disposal Considerations (Part B)**

If the material as supplied becomes a waste, dispose in accordance with federal, state and local regulations.

**14. Transportation Information (Part B)**

This product is not regulated as a hazardous material for transportation.

**15. Regulatory Information (Part B)**

HMIS Rating	
Health	*1
Flammability	1
Physical Hazard	0
PPE	B



**Hazard Rating:** 0 = minimal, 1 = Slight, 2 = moderate, 3 = severe, 4 = extreme

SARA Title 311/312

Health Hazard: Acute/Chronic

CA Prop 65

None Listed

TSCA

Listed



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**16. Other Information**

**Hazard Communication:** This SDS has been prepared in accordance with the federal OSHA Hazard Communication Standard

To the best of our knowledge, the information contained herein is accurate. However, Adhesives Technology Corp. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Additional information is available upon request.