Material Safety Data Sheet

SPI #05110-AB, 05110-AF Crystalbond™ 509

Section 01: Identification

Date Effective.......... June 7, 2010
(most recent revision)

Chemical Name/Synonyms... Crystalbond™ 509

Emergencies
Use Only #'s............
Contacting CHEMTREC 24 Hour Emergency
Worldwide phone: 1-(703)-527-3887
Worldwide FAX: 1-(703)-741-6090
Toll-free phone: 1-(800)-424-9300 USA only

Product or Trade Name.... SPI #05110-AB, 05110-AF
Crystalbond™ 509

Hazardous Material Information System USA

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire Hazard</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

National Fire Protection Association USA

0 0 0

Emergency Overview

NFPA Rating:
Section 2: Composition

<table>
<thead>
<tr>
<th>Component Name</th>
<th>CAS #</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phthalic Anhydride</td>
<td>85-44-9</td>
<td>66-85%</td>
<td>201-607-5</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>107-21-1</td>
<td>15-24%</td>
<td>203-473-3</td>
</tr>
</tbody>
</table>

Section 3: Hazard Identification

Appearance: Clear amber solid

Flash Point: >505° F (COC)

Potential Health Effects:

Eye: Not applicable.

Skin: If material is in molten state, exposure to skin will cause a severe thermal burn.

Ingestion: Not applicable.

Inhalation: Not applicable.

Section 4: First Aid Measures

Eyes: Flush with copious amounts of water for at least 15 minutes. If irritation occurs, seek medical attention.

Skin: Treat for thermal burn. Seek medical attention.

Ingestion: Not applicable.

Inhalation: Not applicable.
Section 5: Fire Fighting Measures

General Information:
Flash Point: >505°F (COC)
Flammable Limits:  
LEL: Not available
UEL: Not available

Unusual Fire and Explosion Hazards: Not available.

Extinguishing Media:
Use Foam, carbon dioxide, or dry powder. DO NOT USE WATER.

Section 6: Accidental Release Measures

General Information:
If material is unusable, sweep up and dispose of in a metal container. Provide adequate ventilation. Avoid excessive heat, sparks and open flames. Dispose of in accordance with all local, state and federal regulations.

Section 7: Handling and Storage

Handling: Chemical goggles and protective gloves recommended. Provide adequate ventilation.
Storage: Store in cool, dry area. Avoid excessive heat, sparks, open flames.

Section 8: Exposure Controls and Personal Protection
**Engineering Controls:** Use with adequate ventilation.

**Exposure Limits:**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phthalic Anhydride</td>
<td>1 ppm</td>
<td>not available</td>
<td>1 ppm</td>
</tr>
<tr>
<td>Ethylene Glycol</td>
<td>50 ppm</td>
<td>not available</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

**Personal Protective Equipment**

**Eyes:** Chemical goggles recommended.

**Skin:** Rubber gloves recommended.

**Clothing:** Not applicable.

**Respirators:** Use NIOSH approved mist respirator where spray occurs.

**Engineering Controls:** Safety shower and eyewash must be available to the workplace. Provide adequate ventilation.

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**Section 9: Physical and Chemical Properties**

**Physical State:** Solid

**Appearance:** Clear or clear amber

**Odor:** Odorless

**pH:** Not available

**Vapor Pressure:** 1.05 mm Hg

**Vapor Density:** (Air =1): 1.0

**Evaporation Rate:** Nil

**Viscosity:** Not available

**Boiling Point:** >300°F starts to decompose

**Freezing/Melting Point:** 225°F (Butyl Acetate = 1)

**Autoignition Temperature:** Not available

**Flash Point:** > 505°F (COC)

**Decomposition Temperature:** > 300°F

**Explosion Limits, Lower:** Not available

**Explosion Limits, Upper:** Not available

**Solubility in water:** Nil

**Specific Gravity/Density:** 1.35

**Molecular Formula:** Not available

**Molecular Weight:** Not available

**VOPC Content:** 0.705 grams/liter (Calculated)
Section 10: Stability and Reactivity

**Chemical Stability:** Stable

**Conditions to Avoid:** Excessive heat, sparks, open flames

**Incompatibility with Other Materials:** Not available

**Hazardous Decomposition of Products:** Carbon monoxide, Carbon dioxide

**Hazardous Polymerization:** Will not occur

Section 11: Toxicological Information

**RTECS:**
CAS# 85-44-9: T13150000
CAS# 107-21-1: KW2975000

**LD50/LC50 Information:**
CAS# 85-44-9: Oral, mouse LD50= 1500 mg/kg Oral, rat LD50= 1530 mg/kg
CAS# 107-21-1: Oral, mouse LD50= 5500 mg/kg Oral, rat LD50= 4700 mg/kg

**Carcinogenicity:**
CAS# 85-44-9 is not listed by ACGIH, IARC, NTP, OR CA Prop 65
CAS# 107-21-1 is not listed by ACGIH, IARC, NTP, OR CA Prop 65

**Teratogenicity:**
No data available.

**Reproductive Effects:**
No data available.

**Neurotoxicity:**
No data available.

**Mutagenicity:**
No data available.

**Other Studies:**
No data available.

Section 12: Ecological Information
Exotoxicity:
CAS# 85-44-9: No data available.
CAS# 107-21-1:
  Fish, Rainbow Trout, LC50 = 41000 mg/Liter, 96 hours
  Fish, Bluegill/Sunfish, LC50 = 27500-41000 mg/Liter, 96 hours

Environmental Fate:
No data available.

Section 13: Disposal Considerations

RCRA P-Series:
  CAS# 85-44-9: None listed.
  CAS# 107-21-1: None listed.

RCRA U-Series:
  CAS# 85-44-9: Waste Number U190.
  CAS# 107-21-1: None listed.

Section 14: Transport Information

US DOT Hazard Class:
  Not regulated.

Section 15: Regulatory Information

United States:

TSCA
CAS# 85-44-9 is listed on the TSCA Inventory.
CAS# 107-21-1 is listed on the TSCA Inventory.

Health & Safety Reporting List
None of the chemicals in this product is listed on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product is under a Chemical Test Rule.

**Section 12b:**
None of the chemicals in this product is listed under TSCA Section 12b.

**TSCA Significant New Use Rule:**
None of the chemicals in this product have a SNUR under TSCA.

**CERCLA Hazardous Substances:**
CAS# 85-44-9: 5000 lb final RQ; 2270 kg final RQ.
CAS# 107-21-1: 5000 lb final RA; 2270 kg final RQ.

**SARA:**
Section 302 (TPQ)
None of the chemicals in this product have a TPQ.

**SARA Codes**
CAS# 85-44-9: immediate, delayed, reactive
CAS# 107-21-1: immediate, delayed

**Section 313**
This material contains Phthalic anhydride (CAS# 85-44-9) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Ethylene glycol (CAS# 107-21-1) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**Clean Air Act:**
CAS# 85-44-9 is listed as a hazardous air pollutant (HAP).
CAS# 107-21-1 is listed as a hazardous air pollutant (HAP).
This product does not contain any Class 1 Ozone depletors.
This product does not contain any Class 2 Ozone depletors.

**Clean Water Act:**
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**
None of the chemicals in this product are considered highly hazardous by OSHA.

**State (Individual states in the USA)**
CAS# 85-44-9 can be found on the California, Massachusetts, Minnesota, New Jersey, and Pennsylvania right to know lists.

CAS# 107-21-1 can be found on the California, Massachusetts, Minnesota, New Jersey and Pennsylvania right to know lists.
California No Significant Risk Level:

California Prop. 65:
None of the chemicals in this product are listed.

European/International Regulations:
European Labeling in Accordance with EC Directives

Hazard Symbols:
- CAS# 85-44-9: XIC
- CAS# 107-21-1: XN

Risk Phrases:
- CAS# 85-44-9: R34 Causes Burns
  R36 Irritating to eyes
  R37 Irritating to respiratory system
  R38 Irritating to skin
- CAS# 107-21-1: R22 Harmful if swallowed

Safety Phrases:
None available

WGK (Water Danger/Protection):
- CAS# 85-44-9: 0
- CAS# 107-21-1: 0

Canada DSL/NDSL:
- CAS# 85-44-9 is listed on Canada's DSL List.
- CAS# 107-21-1 is listed on Canada's DSL List.

Canadian Ingredient Disclosure List:
- CAS# 85-44-9 is listed on the Canadian Ingredient Disclosure List.
- CAS# 107-21-1 is listed on the Canadian Ingredient Disclosure List.

Canada - WHMIS
No information available.

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in
the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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