Selection & Specification Data

Generic Type: Cycloaliphatic Amine Epoxy
Description: High solids corrosion resistant primer and intermediate. Used either as a primer or an intermediate coat over steel and inorganic zinc primers. Can be topcoated with a broad variety of high performance finish coats.

Features:
- Excellent corrosion protection
- Excellent film build and edge protection
- Used as a primer or an intermediate coating
- Good abrasion resistance
- Cures down to 40°F
- VOC compliant to current AIM regulations

Color:
- Red (0500)
- Gray (0700)
- White (0800)
- Yellow (0600)

Finish: Eggshell

Primers: Self-priming. May be applied over organic and inorganic zinc rich primers. A mist coat may be required to minimize bubbling over zinc rich primers.

Topcoats: Acrylics, Alkyds, Epoxies, Polyurethanes

Dry Film Thickness:
- 3.0 mils (75 microns) for mild environments and as an intermediate coat over inorganic zincs.
- 4.0-6.0 mils (100-150 microns) for more severe environments. Do not exceed 10.0 mils (250 microns) in a single coat. Excessive film thickness over inorganic zincs may increase damage during shipping or erection.

Solids Content: By Volume: 77% ± 2%

Theoretical Coverage Rate: 1235 mil ft² (30.8 m²/l at 25 microns)

VOC Values:
- As supplied: 1.6 lbs/gal (195 g/l)
- Thinned**: 16 oz/gal w/#2: 2.2 lbs/gal (261 g/l)
- 32 oz/gal w/#33: 2.7 lbs/gal (329 g/l)
- 33 oz/gal w/#230: 2.8 lbs/gal (337 g/l)
These are nominal values and may vary slightly with color.
*Maximum thinning for 250 g/l restricted areas is 12 oz/gal with Thinner #2, and 11 oz/gal with Thinner #33 or #230. Use Thinner #76 where non-photochemically reactive solvents are required (up to 11 oz/gal).

Limitations:
- Not recommended for immersion service

Test reports and additional data available upon written request.

Substrates & Surface Preparation

General: Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating.

Steel: SSPC-SP6 with a 1.0-2.0 mil (25-50 micron) surface profile.

Galvanized Steel: Prime with specific Carboline primers as recommended by your Carboline Sales Representative. Refer to the specific primer’s Product Data Sheet for substrate preparation requirements.

Concrete: Concrete must be cured 28 days at 75°F (24°C) and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D42582 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing.

Performance Data

<table>
<thead>
<tr>
<th>Test Method</th>
<th>System</th>
<th>Results</th>
<th>Report #</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D4060 Abrasion</td>
<td>Blasted Steel 1 ct. 893</td>
<td>88 mg. loss after 1000 cycles, CS17 wheel, 1000 gm. load</td>
<td>L401-28</td>
</tr>
<tr>
<td>ASTM B117 Salt Fog</td>
<td>Blasted Steel 1 ct. IOZ 1 ct. 893</td>
<td>No blistering, rusting and no creepage at scribe after 4000 hrs</td>
<td>03120</td>
</tr>
<tr>
<td>ASTM D1735 Water Fog</td>
<td>Blasted Steel 1 ct. IOZ 1 ct. 893</td>
<td>No blistering, softening or rusting after 5000 hours</td>
<td>02514.5</td>
</tr>
<tr>
<td>ASTM D2583 Hardness</td>
<td>Blasted Steel 1 ct. 893</td>
<td>73, Barcol Test, 1 week cure, 5 mils DFT</td>
<td>L401-28</td>
</tr>
<tr>
<td>ASTM G26 Weatherometer</td>
<td>Blasted Steel 1 ct. IOZ 1 ct. 893</td>
<td>No blistering, softening or rusting after 4000 hours</td>
<td>03120</td>
</tr>
</tbody>
</table>

Test reports and additional data available upon written request.
**Application Equipment**

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

**Spray Application (General)**

This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

**Conventional Spray**

Pressure pot equipped with dual regulators, 3/8” I.D. minimum material hose, .070” I.D. fluid tip and appropriate air cap.

**Airless Spray**

Pump Ratio: 30:1 (min.)

GPM Output: 3.0 (min.)

Material Hose: 3/8” I.D. (min.)

Tip Size: .017-.021”

Output PSI: 2100-2300

Filter Size: 60 mesh

**Cleanup & Safety Cont.**

**Caution**

This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sharping shoes.

**Application Conditions**

- **Condition**
  - Normal: 60°-85°F (16°-29°C)
  - Minimum: 40°F (4°C)
  - Maximum: 90°F (32°C)
- **Material**
  - Surface
  - Ambient
  - Humidity
  - 0-80%
- **Surface Temp. & 50% Relative Humidity**
  - Dry to Touch
  - Dry to Handle
  - Dry to Topcoat
  - 40°F (4°C)
    - 6 Hours
    - 24 Hours
    - 72 Hours
  - 50°F (10°C)
    - 5 Hours
    - 16 Hours
    - 24 Hours
  - 60°F (16°C)
    - 4 Hours
    - 12 Hours
    - 16 Hours
  - 75°F (24°C)
    - 3 Hours
    - 6 Hours
    - 8 Hours
  - 90°F (32°C)
    - 2 Hours
    - 3 Hours
    - 4 Hours

- **Surface Temp. & 50% Relative Humidity**
  - Maximum
    - Recoat Time w/ Epoxies
    - 40°F (4°C)
      - 30 Days
      - 90 Days
      - 14 Days
    - 50°F (10°C)
      - 30 Days
      - 90 Days
      - 14 Days
    - 75°F (24°C)
      - 30 Days
      - 90 Days
      - 14 Days
    - 90°F (32°C)
      - 15 Days
      - 30 Days
      - 14 Days

**Mixing & Thinning**

**Mixing**

Power mix separately, then combine and power mix. DO NOT MIX PARTIAL KITS. A 30-minute “swell-in” time is highly recommended for applications below 50°F and will improve cure response.

**Ratio**

1:1 Ratio (A to B)

**Thinning**

Spray: Up to 16 oz/gal (12%) w/#2 or up to 33 oz of #230

Brush: Up to 32 oz/gal (25%) w/#33

Roller: Up to 32 oz/gal (25%) w/#33

Mist coating: Thin up to 32 oz/gal with Thinner #2 or #33 in VOC restricted (2.8lb/gal) areas. May thin up to 48 oz/gal where VOC restricted levels are at 3.5 lb/gal for mist coat only. If necessary, use Thinner 230 to slow down the evaporation rate (hot, dry, or windy conditions). Use of thinners other than those supplied or recommended by Carboline may adversely affect performance and void product warranty, whether expressed or implied. *See VOC values for thinning limits.

Carboline Thinner #236E may also be used to thin this product to minimize HAP and VOC emissions. Consult Carboline Technical Service for guidance.

**Pot Life**

- 4 Hours at 75°F (24°C)

**Ventilation**

When used in enclosed areas and product is thinned, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insulate personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator.

**Cleanup & Safety**

**Cleanup**

Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

**Safety**

Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.

**Packaging, Handling & Storage**

**Shipping Weight**

- (Approximate) 2 Gallon Kit 29 lbs (13 kg)
  - 10 Gallon Kit 143 lbs (65 kg)

**Flash Point (Setaflash)**

- Carboguard 893 Part A: 61°F (16°C)
  - Carboguard 893 Part B: 59°F (15°C)

**Storage Temperature & Humidity**

- 0-90% Relative Humidity

**Shelf Life**

- Part A: Min. 36 months at 75°F (24°C)
  - Part B: Min. 24 months at 75°F (24°C)

*Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Section 1 - Chemical Product / Company Information

Product Name: CARBOGUARD 893 PART A  
Identification Number: PLMSDS 0988A1NL  
Product Use/Class: Cycloaliphatic Amine Epoxy - FOR INDUSTRIAL USE ONLY  
Manufacturer: Carboline Company  
2150 Schuetz Road  
St. Louis, MO  63146  
(800) 848-4645

Revision Date: 03/28/2011  
Supersedes: 06/10/2009  
Preparer: Regulatory, Department

Section 2 - Composition / Information On Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>Less Than ACGIH TLV</th>
<th>TWA/ACGIH TLV</th>
<th>STEL</th>
<th>OSHA PEL-TWA/OSHA CEIL</th>
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</thead>
<tbody>
<tr>
<td>MICROCRYSTALLINE SILICA</td>
<td>14808-60-7</td>
<td>55.0</td>
<td>0.025 MG/M3 (respirable)</td>
<td>N/E</td>
<td>N/E</td>
<td>0.1 MG/M3 (respirable)</td>
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<tr>
<td>TITANIUM DIOXIDE</td>
<td>13463-67-7</td>
<td>25.0</td>
<td>10 MG/M3 N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>10 MG/M3 N/E</td>
</tr>
<tr>
<td>EPOXY RESIN</td>
<td>25068-38-6</td>
<td>20.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>EPOXY RESIN</td>
<td>25036-25-3</td>
<td>10.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>1,2-BENZENEDICARBOXIOIC ACID, Di-C6-12- Branched and Linear Alkyl Esters</td>
<td>392662-40-7</td>
<td>10.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>5.0</td>
<td>20 PPM N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>375 MG/M3 N/E</td>
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<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>5.0</td>
<td>3.5 MG/M3 N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>3.5 MG/M3 N/E</td>
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<tr>
<td>METHYL ETHYL KETONE</td>
<td>78-83-3</td>
<td>5.0</td>
<td>200 PPM 300 PPM</td>
<td>590 MG/M3</td>
<td>N/E</td>
<td></td>
</tr>
<tr>
<td>1-METHOXY-2-PROPANOL ACETATE</td>
<td>108-65-6</td>
<td>5.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>ISOPROPANOL</td>
<td>67-63-0</td>
<td>5.0</td>
<td>200 PPM 400 PPM</td>
<td>980 MG/M3 N/E</td>
<td>N/E</td>
<td></td>
</tr>
<tr>
<td>META-XYLENE</td>
<td>108-38-3</td>
<td>5.0</td>
<td>434 Mg/M3 651 Mg/M3</td>
<td>434 Mg/M3 N/E</td>
<td>N/E</td>
<td></td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>0.6</td>
<td>100 PPM 125 PPM</td>
<td>435 MG/M3 N/E</td>
<td>N/E</td>
<td></td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification


Effects Of Overexposure - Eye Contact: May cause eye irritation.
**Effects Of Overexposure - Skin Contact:** May cause skin sensitization. Direct skin contact may cause irritation. May cause allergic skin reaction.

**Effects Of Overexposure - Inhalation:** Harmful if inhaled, may affect the brain or nervous system, causing dizziness, headache, or nausea. May cause nose and throat irritation.

**Effects Of Overexposure - Ingestion:** Harmful if swallowed.

**Effects Of Overexposure - Chronic Hazards:** Crystalline silica is known to cause silicosis. Crystalline silica (Quartz) is classified as a known human carcinogen (Group 1) by IARC. Exposure is by route of inhalation. If material is in a liquid matrix it is unlikely to be inhaled. However, when sanding or grinding the finished product, there may be potential for crystalline silica to become airborne. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

**Primary Route(s) Of Entry:** Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

**Medical Conditions Prone to Aggravation by Exposure:** If sensitized to amines, epoxies, or other chemicals do not use. See a physician if a medical condition exists. If you have a condition that could be aggravated by exposure to dust or organic vapors, see a physician prior to use.

### Section 4 - First Aid Measures

**First Aid - Eye Contact:** If material gets into eyes, flush with water immediately for 15 minutes. Consult a physician.

**First Aid - Skin Contact:** In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Launder clothing before reuse. If rash or irritation develops, consult a physician.

**First Aid - Inhalation:** If inhaled, remove to fresh air. Administer oxygen if necessary. Consult a physician if symptoms persist or exposure was severe.

**First Aid - Ingestion:** If swallowed do not induce vomiting. Seek immediate medical attention.

### Section 5 - Fire Fighting Measures

**Flash Point, F:** 61°F (16°C)  
**Lower Explosive Limit, %:** 0.5  
**Upper Explosive Limit, %:** 12.0

**Extinguishing Media:** Carbon Dioxide, Dry Chemical, Foam, Water Fog

**Unusual Fire And Explosion Hazards:** Flammable Liquid. Vapors are heavier than air and will accumulate. Vapors will form explosive concentrations with air. Vapors travel long distances and will flashback. Use mechanical ventilation when necessary to keep percent vapor below the “Lower Explosion Level” (LEL). Eliminate all ignition sources. Keep away from sparks, open flames and heat sources. All electric equipment and installations should be made and grounded in accordance with the National Electrical Code. In areas where explosion hazards exist, workers should be required to use non-ferrous tools and to wear conductive and non-sparking shoes.

**Special Firefighting Procedures:** Flammable. Cool fire-exposed containers using water spray.

### Section 6 - Accidental Release Measures
Steps To Be Taken If Material Is Released Or Spilled: Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Wear appropriate personal protection clothing and equipment. Follow exposure controls/personal protection guidelines in Section 8. Contain and soak up residual with an absorbent (clay or sand). Take up absorbant material and seal tightly for proper disposal. Dispose of in accordance with local, state and federal regulations. Refer to Section 15 for SARA Title III and CERCLA information.

Section 7 - Handling And Storage

Handling: Do not get in eyes, on skin, or on clothing. Keep container tightly closed when not in use. Wear personal protection equipment. Do not breathe vapors. Wash thoroughly after handling. If pouring or transferring materials, ground all containers and tools. Do not weld, heat, cut or drill on full or empty containers. Use only in accordance with Carboline application instructions, container label and Product Data Sheet. Avoid breathing vapors or spray mist.

Storage: Keep away from heat, sparks, open flames and oxidizing agents. Keep containers closed. Store in a cool, dry place with adequate ventilation.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use explosion-proof ventilation when required to keep below health exposure guidelines and Lower Explosion Limit (LEL).

Respiratory Protection: Use only with ventilation to keep levels below exposure guidelines listed in Section 2. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use MSHA/NIOSH approved organic vapor respirator. Follow all current OSHA requirements for respirator use.

Skin Protection: Recommend impervious gloves and clothing to avoid skin contact. If material penetrates to skin, change gloves and clothing. The use of protective creams may be beneficial to certain individuals. Protective creams should be applied before exposure.

Eye Protection: Recommend safety glasses with side shields or chemical goggles to avoid eye contact.

Other protective equipment: Eye wash and safety showers should be readily available.

Hygienic Practices: Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Use of a hand cleaner is recommended. Launder contaminated clothing before reuse. Leather shoes can absorb and allow hazardous materials to pass through. Check shoes carefully after soaking before reuse.

Section 9 - Physical And Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Range:</td>
<td>175 F (79 C) - 486 F (252 C)</td>
</tr>
<tr>
<td>Odor:</td>
<td>Epoxy</td>
</tr>
<tr>
<td>Appearance:</td>
<td>Viscous Liquid, Various colors</td>
</tr>
<tr>
<td>Solubility in H2O:</td>
<td>N/D</td>
</tr>
<tr>
<td>Freeze Point:</td>
<td>N/D</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>N/D</td>
</tr>
<tr>
<td>Physical State:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Vapor Density:</td>
<td>Heavier than Air</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>N/D</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>Slower than Ether</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>app 1.56</td>
</tr>
<tr>
<td>PH:</td>
<td>N/D</td>
</tr>
</tbody>
</table>

(See section 16 for abbreviation legend)
Conditions To Avoid: Heat, sparks and open flames.

Incompatibility: Keep away from strong oxidizing agents, heat and open flames.

Hazardous Decomposition Products: Carbon monoxide, nitrogen oxides, and unidentified organic compounds. Consider all smoke and fumes from burning material as very hazardous. Welding, cutting or abrasive grinding can create smoke and fumes. Do not breathe any fumes or smoke from these operations.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICROCRYSTALLINE SILICA</td>
<td>14808-60-7</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>13463-67-7</td>
<td>&gt;25 G/KG, ORAL, RAT</td>
<td>&gt;6.82 MG/L 4 HR, RAT</td>
</tr>
<tr>
<td>EPOXY RESIN</td>
<td>25068-38-6</td>
<td>11.4G/KG RAT, ORAL</td>
<td>&gt;20ML/KG SKIN, SENSITIZER</td>
</tr>
<tr>
<td>EPOXY RESIN</td>
<td>25036-25-3</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>1,2-BENZENE DICARBOXYLIC ACID, DI-C6-12-BRANCHED AND LINEAR ALKYL ESTERS</td>
<td>992662-40-7</td>
<td>&gt;5000 MG/KG, ORAL, RAT</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>5.0 G/KG RAT ORAL, 14G/KG RABBIT DERMAL; 8000 PPM/4HRs, RAT, INHALATION</td>
<td></td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>NOT AVAILABLE</td>
<td>&gt;8000 MG/KG, ORAL, RAT</td>
</tr>
<tr>
<td>METHYL ETHYL KETONE</td>
<td>78-93-3</td>
<td>2737MG/KG RAT, ORAL</td>
<td>&gt; 5000 PPM /1 HOUR RAT, INHALATION</td>
</tr>
<tr>
<td>1-METHOXY-2-PROPANOL ACETATE</td>
<td>108-65-6</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>ISOPROPANOL</td>
<td>67-63-0</td>
<td>4720MG/KG RAT, ORAL</td>
<td>22500 PPM/8HRs RAT, INHALATION</td>
</tr>
<tr>
<td>META-XYLENE</td>
<td>108-38-3</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
<td>3500 MG/KG RAT, ORAL</td>
<td>NOT AVAILABLE</td>
</tr>
</tbody>
</table>

Section 12 - Ecological Information

Ecological Information: No data

Section 13 - Disposal Information

Disposal Information: Dispose of in accordance with State, Local, and Federal Environmental regulations. Responsibility for proper waste disposal is with the owner of the waste.

Section 14 - Transportation Information

DOT Proper Shipping Name: Paint
DOT Technical Name: N/A
DOT Hazard Class: 3
DOT UN/NA Number: 1263

Packing Group: II
Hazard Subclass: N/A
Resp. Guide: 128

Additional Notes: None.
CERCLA - SARA HAZARD CATEGORY

This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA SECTION 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
</tr>
<tr>
<td>META-XYLENE</td>
<td>108-38-3</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
</tr>
</tbody>
</table>

TOXIC SUBSTANCES CONTROL ACT

All components of this product are listed on the TSCA inventory.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(B) Substances exist in this product

U.S. STATE REGULATIONS AS FOLLOWS:

NEW JERSEY RIGHT-TO-KNOW

The following materials are non-hazardous, but are among the top five components in this product.

PENNSYLVANIA RIGHT-TO-KNOW

The following non-hazardous ingredients are present in the product at greater than 3%.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRON OXIDE</td>
<td>1332-37-2</td>
</tr>
<tr>
<td>YELLOW IRON OXIDE</td>
<td>51274-00-1</td>
</tr>
</tbody>
</table>

CALIFORNIA PROPOSITION 65

Warning: The following ingredients present in the product are known to the state of California to cause Cancer:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICROCRYSTALLINE SILICA</td>
<td>74805-80-7</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
</tr>
</tbody>
</table>

Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards:
INTERNATIONAL REGULATIONS AS FOLLOWS:

CANADIAN WHMIS

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B2 D2A D2B

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
</tr>
</tbody>
</table>

Section 16 - Other Information

HMIS Ratings
Health: 2          Flammability: 3        Reactivity: 0        Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, GR/LTR MIXED (UNTHINNED): 195

REASON FOR REVISION: Changes made in Section(s): 2, 8, 11, and 15

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained herein is, to the best of our knowledge and belief accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.
Material Safety Data Sheet

Section 1 - Chemical Product / Company Information

Product Name: CARBOGUARD 893 PART B
Identification Number: PLMSDS 0988B1NL
Product Use/Class: Cycloaliphatic Amine Epoxy - FOR INDUSTRIAL USE ONLY
Manufacturer: Carbone Company
2150 Schuetz Road
St. Louis, MO 63146
(800) 848-4645

Revision Date: 03/28/2011
Supercedes: 09/18/2008
Preparer: Regulatory, Department

Section 2 - Composition / Information On Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Weight % Less Than</th>
<th>ACGIH TLV-TWA</th>
<th>ACGIH TLV-STEL</th>
<th>OSHA PEL-TWA</th>
<th>OSHA CEIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICROCRYSTALLINE SILICA</td>
<td>14808-60-7</td>
<td>65.0</td>
<td>0.025 MG/M3</td>
<td>N/E</td>
<td>0.1 MG/M3</td>
<td>N/E</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
<td>10.0</td>
<td>20 PPM</td>
<td>N/E</td>
<td>375 MGM3</td>
<td>N/E</td>
</tr>
<tr>
<td>ISOPROP ANOL</td>
<td>67-63-0</td>
<td>5.0</td>
<td>200 PPM</td>
<td>400 PPM</td>
<td>980 MGM3</td>
<td>N/E</td>
</tr>
<tr>
<td>BENZYL ALCOHOL</td>
<td>100-51-6</td>
<td>5.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>POLYOXYPROPYLIDIAMINE</td>
<td>904610-0</td>
<td>5.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>CYCLOALIPHATIC AMINE</td>
<td>TRADE SECRET</td>
<td>5.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>CYCLOALIPHATIC AMINE</td>
<td>TRADE SECRET</td>
<td>5.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>DIAMINOCYCLOHEXANE</td>
<td>694-83-7</td>
<td>5.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>AROMATIC HYDROCARBON</td>
<td>84-742-95-6</td>
<td>5.0</td>
<td>25 PPM</td>
<td>N/E</td>
<td>125 MGM3</td>
<td>N/E</td>
</tr>
<tr>
<td>1,2,4 TRIMETHYLBENZENE</td>
<td>95-63-6</td>
<td>5.0</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
</tbody>
</table>

Section 3 - Hazards Identification


Effects Of Overexposure - Eye Contact: Can cause eye burns.

Effects Of Overexposure - Skin Contact: May be harmful if absorbed through the skin. Can cause skin burns.

Effects Of Overexposure - Inhalation: Harmful if inhaled, may affect the brain or nervous system, causing dizziness, headache, or nausea. May cause nose and throat irritation. May cause lung irritation. May cause
allergic respiratory reaction, effects may be permanent.

**Effects Of Overexposure - Ingestion:** Harmful if swallowed.

**Effects Of Overexposure - Chronic Hazards:** Crystalline silica is known to cause silicosis. Crystalline silica (Quartz) is classified as a known human carcinogen (Group 1) by IARC. Exposure is by route of inhalation. If material is in a liquid matrix it is unlikely to be inhaled. However, when sanding or grinding the finished product, there may be potential for crystalline silica to become airborne. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

**Primary Route(s) Of Entry:** Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

**Medical Conditions Prone to Aggravation by Exposure:** If sensitized to amines, epoxies, or other chemicals do not use. See a physician if a medical condition exists. If you have a condition that could be aggravated by exposure to dust or organic vapors, see a physician prior to use.

### Section 4 - First Aid Measures

**First Aid - Eye Contact:** If material gets into eyes, flush with water immediately for 15 minutes. Consult a physician.

**First Aid - Skin Contact:** In case of contact, immediately flush skin with plenty of water while removing contaminated clothing and shoes. Launder clothing before reuse. If rash or irritation develops, consult a physician.

**First Aid - Inhalation:** If inhaled, remove to fresh air. Administer oxygen if necessary. Consult a physician if symptoms persist or exposure was severe.

**First Aid - Ingestion:** If swallowed do not induce vomiting. Seek immediate medical attention.

### Section 5 - Fire Fighting Measures

**Flash Point, F:** 59F (15C) 
(Setaflash) 
**Lower Explosive Limit, %:** 0.5
**Upper Explosive Limit, %:** 12.0

**Extinguishing Media:** Carbon Dioxide, Dry Chemical, Foam, Water Fog

**Unusual Fire And Explosion Hazards:** Flammable Liquid. Vapors are heavier than air and will accumulate. Vapors will form explosive concentrations with air. Vapors travel long distances and will flashback. Use mechanical ventilation when necessary to keep percent vapor below the "Lower Explosion Level" (LEL). Eliminate all ignition sources. Keep away from sparks, open flames and heat sources. All electric equipment and installations should be made and grounded in accordance with the National Electrical Code. In areas where explosion hazards exist, workers should be required to use non-ferrous tools and to wear conductive and non-sparking shoes.

**Special Firefighting Procedures:** Evacuate hazard area of unprotected personnel. Use a NIOSH approved self-contained breathing unit and complete body protection. Cool surrounding containers with water in case of fire exposure. Flammable. Cool fire-exposed containers using water spray.

### Section 6 - Accidental Release Measures

**Steps To Be Taken If Material Is Released Or Spilled:** Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Wear appropriate
personal protection clothing and equipment. Follow exposure controls/personal protection guidelines in Section 8. Contain and soak up residual with an absorbent (clay or sand). Take up absorbant material and seal tightly for proper disposal. Dispose of in accordance with local, state and federal regulations. Refer to Section 15 for SARA Title III and CERCLA information.

Section 7 - Handling And Storage

Handling: Do not get in eyes, on skin, or on clothing. Keep container tightly closed when not in use. Wear personal protection equipment. Do not breathe vapors. Wash thoroughly after handling. If pouring or transferring materials, ground all containers and tools. Do not weld, heat, cut or drill on full or empty containers. Use only in accordance with Carboline application instructions, container label and Product Data Sheet. Avoid breathing vapors or spray mist.

Storage: Keep away from heat, sparks, open flames and oxidizing agents. Keep containers closed. Store in a cool, dry place with adequate ventilation.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use explosion-proof ventilation when required to keep below health exposure guidelines and Lower Explosion Limit (LEL).

Respiratory Protection: Use only with ventilation to keep levels below exposure guidelines listed in Section 2. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure, or not able to monitor, use MSHA/NIOSH approved organic vapor respirator. Follow all current OSHA requirements for respirator use.

Skin Protection: Recommend impervious gloves and clothing to avoid skin contact. If material penetrates to skin, change gloves and clothing. The use of protective creams may be beneficial to certain individuals. Protective creams should be applied before exposure.

Eye Protection: Recommend safety glasses with side shields or chemical goggles to avoid eye contact.

Other protective equipment: Eye wash and safety showers should be readily available.

Hygienic Practices: Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Use of a hand cleaner is recommended. Launder contaminated clothing before reuse. Leather shoes can absorb and allow hazardous materials to pass through. Check shoes carefully after soaking before reuse.

Section 9 - Physical And Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Range:</td>
<td>176 F (80 C) - 530 F (277 C)</td>
<td>Vapor Density:</td>
<td>Heavier than Air</td>
</tr>
<tr>
<td>Odor:</td>
<td>Solvent</td>
<td>Odor Threshold:</td>
<td>N/D</td>
</tr>
<tr>
<td>Appearance:</td>
<td>Viscous, amber liquid</td>
<td>Evaporation Rate:</td>
<td>Slower than Ether</td>
</tr>
<tr>
<td>Solubility in H2O:</td>
<td>N/D</td>
<td>Specific Gravity:</td>
<td>1.52</td>
</tr>
<tr>
<td>Freeze Point:</td>
<td>N/D</td>
<td>PH:</td>
<td>N/D</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>N/D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical State:</td>
<td>Liquid</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity
Conditions To Avoid: Heat, sparks and open flames.

Incompatibility: Keep away from strong oxidizing agents, heat and open flames.

Hazardous Decomposition Products: Carbon monoxide, nitrogen oxides, and unidentified organic compounds. Consider all smoke and fumes from burning material as very hazardous. Welding, cutting or abrasive grinding can create smoke and fumes. Do not breathe any fumes or smoke from these operations.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Product LD50: N/D  Product LC50: N/D

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICROCRYSTALLINE SILICA</td>
<td>14808-60-7</td>
<td>NOT AVAILABLE</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>TOluene</td>
<td>108-88-3</td>
<td>5.0 G/KG RAT ORAL, 14G/KG RABBIT DERMAL 8000 PPM/4HRS, RAT, INHALATION</td>
<td></td>
</tr>
<tr>
<td>ISOpropyl alcohol</td>
<td>87-63-0</td>
<td>4720MG/KG RAT, ORAL 22500 PPM/8HRS RAT, INHALATION</td>
<td></td>
</tr>
<tr>
<td>BENZYL ALCOHOL</td>
<td>100-51-6</td>
<td>1230MG/KG RAT, ORAL 1000PPM/8HRS RAT, INHALATION</td>
<td></td>
</tr>
<tr>
<td>POLYXYPXYPROPYLENEDIAMINE</td>
<td>9046-10-0</td>
<td>48 G/KG, ORAL, RAT NOT AVAILABLE</td>
<td></td>
</tr>
<tr>
<td>CYCLOALIPHATIC AMINE</td>
<td>TRADE SECRET</td>
<td>1230 MG/KG ORAL RAT, 2000 MG/KG DERMAL NOT AVAILABLE</td>
<td></td>
</tr>
<tr>
<td>CYCLOALIPHATIC AMINE</td>
<td>TRADE SECRET</td>
<td>1230 MG/KG ORAL RAT, 2000 MG/KG DERMAL NOT AVAILABLE</td>
<td></td>
</tr>
<tr>
<td>Diaminocyclohexane</td>
<td>694-83-7</td>
<td>1752 MG/KG, RAT, ORAL NOT AVAILABLE</td>
<td></td>
</tr>
<tr>
<td>aromatic hydrocarbon</td>
<td>64742-95-6</td>
<td>4700 MG/KG, ORAL, RAT 3670 PPM/8 HOURS, RAT, INHALATION</td>
<td></td>
</tr>
<tr>
<td>1,2,4 triMethyLBenzene</td>
<td>95-63-6</td>
<td>5 GM/KG, ORAL, RAT 18 GM/M3/4HOURS</td>
<td></td>
</tr>
</tbody>
</table>

Section 12 - Ecological Information

Ecological Information: No data

Section 13 - Disposal Information

Disposal Information: Dispose of in accordance with State, Local, and Federal Environmental regulations. Responsibility for proper waste disposal is with the owner of the waste.

Section 14 - Transportation Information

DOT Proper Shipping Name: Paint  Packing Group: II
DOT Technical Name: N/A  Hazard Subclass:N/A
DOT Hazard Class: 3  Resp. Guide 128
DOT UN/NA Number: 1263

Additional Notes: None.

Section 15 - Regulatory Information

CERCLA - SARA HAZARD CATEGORY

This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and
312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA SECTION 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOXIC SUBSTANCES CONTROL ACT</td>
<td></td>
</tr>
<tr>
<td>All components of this product are listed on the TSCA inventory.</td>
<td></td>
</tr>
<tr>
<td>This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:</td>
<td></td>
</tr>
<tr>
<td>No TSCA 12(B) Substances exist in this product</td>
<td></td>
</tr>
<tr>
<td>U.S. STATE REGULATIONS AS FOLLOWS:</td>
<td></td>
</tr>
<tr>
<td>NEW JERSEY RIGHT-TO-KNOW</td>
<td></td>
</tr>
<tr>
<td>The following materials are non-hazardous, but are among the top five components in this product.</td>
<td></td>
</tr>
<tr>
<td>PENNSYLVANIA RIGHT-TO-KNOW</td>
<td></td>
</tr>
<tr>
<td>The following non-hazardous ingredients are present in the product at greater than 3%.</td>
<td></td>
</tr>
<tr>
<td>CALIFORNIA PROPOSITION 65</td>
<td></td>
</tr>
<tr>
<td>Warning: The following ingredients present in the product are known to the state of California to cause Cancer:</td>
<td></td>
</tr>
<tr>
<td>Warning: The following ingredients present in the product are known to the state of California to cause birth defects, or other reproductive hazards:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
</tr>
<tr>
<td>1,2,4 TRIMETHYL BENZENE</td>
<td>95-63-6</td>
</tr>
<tr>
<td>HYDROCARBON RESIN</td>
<td>68855-24-3</td>
</tr>
<tr>
<td>POLYSTYRENE</td>
<td>9003-53-6</td>
</tr>
<tr>
<td>MICROCRYSTALLINE SILICA</td>
<td>14808-60-7</td>
</tr>
<tr>
<td>CUMENE</td>
<td>98-82-8</td>
</tr>
<tr>
<td>ETHYL BENZENE</td>
<td>100-41-4</td>
</tr>
<tr>
<td>FORMALDEHYDE</td>
<td>50-00-0</td>
</tr>
<tr>
<td>TOLUENE</td>
<td>108-88-3</td>
</tr>
</tbody>
</table>
INTERNATIONAL REGULATIONS AS FOLLOWS:

CANADIAN WHMIS

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B2 D2A D2B

Section 16 - Other Information

HMIS Ratings
Health: 2    Flammability: 3    Reactivity: 0    Personal Protection: X

VOLATILE ORGANIC COMPOUNDS, GR/LTR MIXED (UNTHINNED): 195

REASON FOR REVISION: Changes made in Section(s): 1, 2, 5, 8, 9, 11, and 15

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

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