1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 680DDN
Product Number (Optional): 680DDN
Use of Product: Polyimide Primer
Supplier: Rogers Corporation
1100 Governor Lea Road,
Bear, DE 19701
Phone: 001-302-834-2100
Fax: 001-302-834-4021
Email: msdsinfo@rogerscorporation.com
Emergency Telephone Number: 800-424-9300 (U.S. & Canada) Chemtrec
001-703-527-3887 (International – Call Collect)

2. HAZARDS IDENTIFICATION

Emergency Overview:
OSHA Hazard: Not Applicable
Target Organs: Not Applicable
GHS Classification:
- Flammable liquids (Category 3)
- Acute toxicity, Inhalation (Category 4)
- Skin irritation (Category 2)
- Eye irritation (Category 2A)
- Carcinogenicity (Category 2)
- Specific target organ toxicity-single exposure (Category 3), Respiration system
- Specific target organ toxicity-repeated exposure (Category 2)
- Specific target organ toxicity-repeated exposure, Inhalation (Category 2), Central nervous system, Liver, Kidney
- Aspiration Hazard (Category 1)
- Acute aquatic toxicity (Category 2)
- Chronic aquatic toxicity (Category 3)

GHS Label Elements:

Pictogram:
- Flammable liquid and vapor
- Causes skin irritation
- Serious eye irritation
- Harmful if inhaled
- Respiratory irritation
- Suspected of causing cancer
- May cause damage to organs through prolonged or repeated exposure

Signal Word: Danger

Hazard Statements:
- H226: Flammable liquid and vapor
- H304: May be fatal if swallowed and enters airways
- H315: Causes skin irritation
- H319: Causes serious eye irritation
- H332: Harmful if inhaled
- H335: May cause respiratory irritation
- H351: Suspected of causing cancer
- H373: May cause damage to organs through prolonged or repeated exposure

Including Precautionary Statements:
- H401: Toxic to aquatic life
H412: Harmful to aquatic life with long-lasting effects

P261: Avoid breathing dust.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330: Rinse mouth.
P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P501: Dispose of contents/container to approved Hazardous waste Company.

HMIS Classification: *H 2 F 3 R 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>32-56</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>8-14</td>
</tr>
<tr>
<td>Bis(2,4-dichlorobenzoyl)peroxide</td>
<td>133-14-2</td>
<td>0.1</td>
</tr>
</tbody>
</table>


4. FIRST-AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If Inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In Case of Skin Contact: Wash off with soap and plenty of water. Consult a physician.

In Case of Eye Contact: Rinse thoroughly with plenty of water for at least 20 minutes and consult a physician.

If Swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling (see Section 2) and/or in Section 11

Indication of any immediate medical attention and special treatment needed: No data available.

5. FIRE-FIGHTING MEASURES

Conditions of Flammability: No data available.

Suitable Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special Protective Equipment for Fire Fighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous Combustion Products: Carbon Oxides

Further Information: Do not allow fire water to penetrate into surface or ground water. Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protective equipment. Avoid breathing vapors mists or gas. Ensure adequate ventilation. For personal protection see Section 8.

Environmental Precautions: Prevent further leakage or spillage. Do not let product enter drains.

Methods and Materials for Containment and Cleaning Up: Remove all sources of ignition. Contain spillage, then collect with electrically protected devices, or by wet brushing. Take up mechanically. Collect in closed containers for disposal. For disposal see Section 13.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with skin and eyes. Avoid formation of aerosols. Provide appropriate exhaust ventilation at places where vapors are formed. No Smoking, Take Measures to prevent the build-up of electro-static charge. For precautions see Section 2.

Conditions for Safe Storage: Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with Workplace Controls Parameters:

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Value</th>
<th>Control Parameter</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>TWA 100 PPM</td>
<td>150 PPM</td>
<td>ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 100 PPM</td>
<td>435 mg/M³</td>
<td>USA OSHA</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>TWA 20 PPM</td>
<td>125 PPM</td>
<td>ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 100 PPM or 435 mg/M³</td>
<td>USA NIOSH Recommended Exposure limits</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 125 PPM or 454 mg/M³</td>
<td>USA OSHA</td>
<td></td>
</tr>
</tbody>
</table>

Exposure Controls: Handle in accordance with good industrial hygiene and safety practice.

Appropriate Engineering Controls: Wash hands before breaks and at the end of workday.

Personal Protective Equipment: Where risk assessment show air-purifying respirators are appropriate use a full-face respirator with multi-purpose combinations(US) and type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the
Hand Protection: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye Protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and Body Protection: Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene Measures: Wash and dry hands.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Form: Silicone Rubber Dispersion
Color: Clear

Safety Data:
\( \text{pH: No data available.} \)
Melting/Freezing Point: \(<32 \, ^\circ\text{F} \, (\text{DIN EN ISO 306}) \)
Boiling Point: \(137 \text{ to } 140^\circ\text{C} \, (278.6\text{-}284^\circ\text{F})\)
Flash Point: \(77 \, ^\circ\text{F}\)
Autoignition Temperature: \(530^\circ\text{C} \, (986^\circ\text{F})\)
Lower Explosion Limit: \(1.1\%\)
Upper Explosion Limit: \(7\%\)
Vapor Pressure: \(24 \, \text{hPa} \, (18 \, \text{mmHG}) \, \text{at } 38^\circ\text{C} \, (100.4^\circ\text{F})\)
Specific Gravity: \(0.95 \, \text{at } 20 \, ^\circ\text{C} \, (68 \, ^\circ\text{F})\)
Water Solubility: Not water soluble.
Partition Coefficient: \(~2.98 \, \text{Log } K_{\text{fs}}\)
Relative Vapor Density: \(3.67 \, (\text{air }=1)\)
Odor: Characteristic of xylene
Odor Threshold: \(1 \, \text{ppm} \, (\text{Xylene})\)
Evaporation Rate: \(0.6 \, (\text{BuAc }=1)\)

10. STABILITY AND REACTIVITY

Reactivity: No data available.
Chemical Stability: Stable under recommended storage conditions.
Possibility of Hazardous Reactions: Vapors may form explosive mixture with air.

Conditions to Avoid: Protect from excessive heat. Keep away from sources of ignition and heat. Avoid dust formation.
Materials to Avoid: Oxidizing agents.
Hazardous Decomposition Products: Other decomposition products - no data available.
Thermal decomposition: To avoid thermal decomposition, do not overheat.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:
Oral LD50: No data available.
Dermal LD50: No data available.
Other Info. on Acute Toxicity: No data available.
Skin Corrosion/Irritation: No data available.
Serious Eye Damage/Irritation: No data available.
Respiratory or Skin Sensitization: No data available.
Germ Cell Mutagenicity: No data available.
Carcinogenicity:
IARC: 2B - Group 2B: Possibly carcinogenic to humans (Ethylbenzene).
IARC: 3- Group3: Not Classified as to its carcinogenicity to humans (Xylene)
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.
OSHA No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by OSHA.
Reproductive Toxicity: No data available.
Teratogenicity: No data available.
Specific Target Organ Toxicity – Single Exposure (GHS): No data available.
Specific Target Organ Toxicity – Repeated Exposure (GHS): No data available.
Aspiration Hazard: No data available.
Additional Information: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Vomiting, nausea, diarrhea possible.

12. ECOLOGICAL INFORMATION:
Toxicity: No data available.
Persistence and Degradability: No data available.
Bioaccumulative Potential: No data available.
Mobility in Soil: No data available.
PBT and vPvB Assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Other Adverse Effects: No data available.

13. DISPOSAL CONSIDERATIONS
Product: Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated Packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION
IMDG Classification: UN1993, Flammable liquids N.O.S. (Xylene), 3, PG III EMS-No: F-E, S-D
IATA Classification: UN1993, Flammable liquids N.O.S. (Xylene), 3, PG III

15. REGULATORY INFORMATION
SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III.
SARA 311/312 Hazards: Acute Health Hazard
CERCLA (Comprehensive Emergency Response, Compensation, and Liability Act): Not Applicable
SARA Title III (Superfund Amendments and Reauthorization Act): Not Applicable

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372:
<table>
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</tbody>
</table>

### 16. OTHER INFORMATION

NA = Not Applicable
NE = Not Established
NC = Not Classified

FILE: 99430 - 680DDN - SDS 12222016
PREPARED BY: Jianhua Zou
REVIEWED BY: Michal Werbecki
DATE: 12-22-2016

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