SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 84N Series Prepreg
Supplier: Arlon EMD
Address: 9433 Hyssop Drive
           Rancho Cucamonga, CA 91730 - USA
Telephone: 001-909-987-9533
Fax: 001-909-987-8541
Email: info@arlonemd.com
Emergency Telephone Number: 800-424-9300 (U.S. & Canada)
                             001-703-527-3887 (International – Call Collect)

2. HAZARDS IDENTIFICATION

Emergency Overview:
OSHA Hazard: None
Target Organs: None
GHS Classification: None
GHS Pictograms & Signal Word: None
GHS Hazard Statements: None
GHS Precautionary Statements: None

Potential Health Effects:
Inhalation: Machined dust may cause respiratory irritation.
Skin: NA
Eyes: Dust may cause mechanical eye irritation.
Ingestion: NA

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Cas #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyimide Resin  Confidential</td>
<td>&gt;50</td>
<td></td>
</tr>
<tr>
<td>Ceramic Filler  Confidential</td>
<td>&gt;15</td>
<td></td>
</tr>
<tr>
<td>Talc Filler  Confidential</td>
<td>&lt;5</td>
<td></td>
</tr>
<tr>
<td>Glass Fibers; Continuous Filament</td>
<td>65997-17-3</td>
<td>&gt;15</td>
</tr>
</tbody>
</table>

The material contains no other hazardous ingredients as defined in OSHA’s Hazard Communication Standard 29 CFR 1910.1200 or EU directive 1999/45/EC, and do not present a health or environmental hazard according to directive 67/548/EC.
4. FIRST-AID MEASURES

General Advice: Fabrication may produce dust particles, which may be an irritant.

If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular, provide artificial respiration or oxygen by trained professional. Get medical attention if adverse health effects persist or are severe.

In Case of Skin Contact: Take off contaminated clothing. Immediately wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention. Wash clothing before reuse.

In Case of Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms persist.

If Swallowed: Rinse out mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Conditions of Flammability: Flash Point: NA UEL: NA
Auto Ignition Temperature: NA LEL: NA

Suitable Extinguishing Media:  X Water Spray  X Foam  X CO2
  X Dry Chemical  Other:

Special Protective Equipment for Fire Fighters: Fire-fighters should wear NIOSH-approved positive pressure, self-contained breathing apparatus (SCBA) and full protective gear. Avoid fire-fighting from downwind. Cool containers with water spray. Provide adequate ventilation. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Hazardous Combustion Products: Combustion products may include: carbon dioxide, carbon monoxide, oxides of nitrogen, and maleic anhydride.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear personal protective equipment (see section 8). Remove all sources of ignition. Avoid contact with skin and eyes. Avoid breathing dust/mist. Ensure adequate ventilation.

Environmental Precautions: Prevent leakage into the sewer, drainage system or soil. Avoid release to environment. Inform the relevant authorities if the product has caused environmental pollution.

Methods and Materials for Containment and Cleaning Up: Sweep or shovel into the appropriate container for disposal. Cloth gloves are not recommended as they may accumulate debris. Prevent airborne dust.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Wear protective equipment (See section 8).

Conditions for Safe Storage: Store in a cool, dry and well-ventilated area. Keep away from Ultraviolet light.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with Workplace Controls Parameters: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Provide eyewash stations.

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass Fibers; Continuous Filament</td>
<td>65997-17-3</td>
<td>5mg/m³ (resp.)</td>
<td>5 mg/m³ (inhalable)</td>
</tr>
<tr>
<td>Talc Filler</td>
<td>Confidential</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Nuisance Dust</td>
<td>NA</td>
<td>5mg/m³ (resp.)</td>
<td>10mg/m³ (inhalable)</td>
</tr>
</tbody>
</table>

Personal Protective Equipment:

**Respiratory Protection:** In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**Hand Protection:** Wear resistant gloves to prevent cutting or mechanical irritation. Rubber or vinyl preferred. Cotton gloves tend to accumulate dust and debris and are not suitable.

**Eye Protection:** Safety glasses with side shields (ANSI Z87 recommended). Do not wear contact lenses.

**Skin and Body Protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practices. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:**
- **Form:** Solid Sheet
- **Color:** Reddish-Brown

**Safety Data:**
- **pH:** Not Applicable
- **Melting/Freezing Point:** 60°C
- **Boiling Point:** Not Applicable
- **Flash Point:** Not Applicable
- **Ignition Temperature:** Not Applicable
- **Auto Ignition Temperature:** Not Applicable
- **Lower Explosion Limit:** Not Applicable
- **Upper Explosion Limit:** Not Applicable
- **Vapor Pressure:** Not Applicable
- **Density:** 1.8 (typical)
- **Water Solubility:** Not soluble in water
- **Partition Coefficient:** Not Applicable
- **Relative Vapor Density:** Not Applicable
- **Odor:** Slight
- **Odor Threshold:** Not Applicable
- **Evaporation Rate:** Not Applicable

10. STABILITY AND REACTIVITY

**Chemical Stability:**
- **Possibility of Hazardous Reactions:** Stable under normal conditions.
- **Conditions to Avoid:** Avoid temperatures above 25°C; ultraviolet light
- **Materials to Avoid:** strong acids; strong bases; strong oxidizing agents
Hazardous decomposition products: Combustion products may include carbon dioxide, carbon monoxide, oxides of nitrogen, and maleic anhydride.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:
Oral LD50: NA
Dermal LD50: NA
Other Info. on Acute Toxicity: NA
Skin Corrosion/Irritation: Dust may cause mechanical irritation.
Serious Eye Damage/Irritation: Dust may cause mechanical irritation.
Respiratory or Skin Sensitization: NA
Germ Cell Mutagenicity: NA
Carcinogenicity:
IARC: NA
ACGIH: NA
NTP: NA
OSHA: NA
Reproductive Toxicity: NA
Teratogenicity: NA
Specific Target Organ Toxicity – Single Exposure (GHS): NA
Specific Target Organ Toxicity – Repeated Exposure (GHS): NA
Aspiration Hazard: NA
Potential Health Effects:
Inhalation: Machined dust may cause respiratory irritation.
Ingestion: NA
Skin: NA
Eyes: Dust may cause mechanical irritation.
Signs and Symptoms of Overexposure: NA
Synergistic Effects Additional Information: NA

12. ECOLOGICAL INFORMATION:

No environmental hazards were identified based on a review of available data for the ingredients in this product. Not all of the ingredients have been tested for Ecotoxicity.

13. DISPOSAL CONSIDERATIONS

Product: Dispose of in accordance with applicable, federal, state, provincial, and local laws and regulations.
Contaminated Packaging: Recommend contaminated packaging material should be disposed of as stated above for residues and unused product.

14. TRANSPORT INFORMATION

DOT (U.S.) Classification: Not Classified
IMDG Classification: Not Classified
IATA Classification: Not Classified

15. REGULATORY INFORMATION
TSCA: All components are listed in TSCA inventory or are exempt.
OSHA Hazards: None
SARA 302 Components: None
SARA 313 Components: None
SARA 311/312 Hazards: None
CERCLA: NA
SARA Title III: NA

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>
<thead>
<tr>
<th>CAS #</th>
<th>CHEMICAL NAME</th>
<th>PERCENT BY WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

HMIS Classification: Health: 1  Flammability: 1  Reactivity: 0

NA = Not Applicable
NE = Not Established
NC = Not Classified
FILE: 84N SDS
PREPARED BY: Vipul Shah
REVIEWED BY: David Carlson
DATE: 2020-06-24

Acronyms
ACGIH: American Conference of Governmental Industrial Hygienists.
CAS No.: Chemical Abstracts Service registration number.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
HMIS: Hazardous Materials Information System
IARC: International Agency for Research on Cancer.
OSHA: Occupational Safety and Health Administration (United States).
PEL: Permissible Exposure Limit.
SARA: Superfund Amendments and Reauthorization Act.
STEL: Short Term Exposure Limit.
TSCA: Toxic Substances Control Act, (United States chemical inventory).
TLV: Threshold Limit Value.
TWA: Time Weighted Average.
UEL/LEL: Upper Explosion Limit/Lower Explosion Limit.

DISCLAIMER:
The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the result to be obtained from the use thereof.

ARLON EMD assumes no responsibility for personal injury or property damage to vendees, users or third parties caused by the material. Such vendees or users assume all risks associated with the use of the material. MSDS has been prepared in accordance with ANSI standard Z400.1-2044, and Regulation (EC) No. 1907/2006.

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