SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

   TRADE NAME: Bonding Film 3001
   CHEMICAL FAMILY: Fluorocarbon Film (PCTFE Film)
   HMIS RATING: H 1 F 1 R 0
   USE OF MATERIAL: Bonding Film
   EMERGENCY PHONE: 860-774-9605
   CHEMTREC: 800-424-9300 (U.S. & Canada)
              703-527-3887 (International – Call Collect)

2. COMPOSITION/INFORMATION ON INGREDIENTS

   Chemical Name | CAS No. | EINECS/ELINCS | % | OSHA PEL | ACGIH TLV | EU Classification
   -----------------------------------------------

   The material contains no 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. This SDS contains valuable information critical for safe handling and proper use of the product.

3. HAZARDS IDENTIFICATION

   EFFECTS OF OVEREXPOSURE: None. A clear plastic film. Not considered hazardous under normal usage. Can release irritating and/or toxic vapors at elevated processing temperatures or if involved in a fire.

   INHALATION: Not a route of exposure under normal usage. If exposed to vapors at elevated temperatures, remove to fresh air. Heated vapors may cause polymer fume fever. This is characterized by flu-like symptoms (fever, chills, muscle aches) that last about 24 hours.

   EYE CONTACT: Not considered hazardous. May cause mechanical irritation if film or dust comes into contact with the eye.

   SKIN CONTACT: Not considered hazardous.

   INGESTION: Not a route of exposure, not considered hazardous.

   CHRONIC: NA
4. **FIRST-AID MEASURES**

**INHALATION:** Not a route of exposure under normal usage. If exposed to vapors at elevated temperatures, remove to fresh air. Heated vapors may cause polymer fume fever. This is characterized by flu-like symptoms (fever, chills, muscle aches) that last about 24 hours. Obtain medical attention if symptoms persist.

**EYE CONTACT:** If material comes into contact with eye, flush eye with water while holding eyelids apart to ensure complete irrigation. Obtain medical attention if symptoms persist.

**SKIN CONTACT:** None known.

**INGESTION:** None known.

5. **FIRE-FIGHTING MEASURES**

**FLASH POINT:** NA  
**AUTOIGNITION TEMPERATURE:** NA  
**Flammable Limits:** LEL NA UEL NA  
**AUTOIGNITION TEMPERATURE:** NA  

**EXTINGUISHING MEDIA:**  
<table>
<thead>
<tr>
<th>Media</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>Water Spray</td>
<td>X</td>
<td>X</td>
<td>CO₂</td>
</tr>
<tr>
<td>X</td>
<td>Foam</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dry Chemical</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**SPECIAL FIRE FIGHTING PROCEDURES:** Firefighters should be equipped with self-contained breathing apparatus and turnout gear.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Gaseous products may be evolved if the film is heated to very high temperatures and they should be regarded as hazardous.

6. **ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS:** This material is considered to be inert at ambient conditions but may evolve hazardous fumes upon reaching its decomposition temperature. Wear suitable protective equipment.

**ENVIRONMENTAL PRECAUTIONS:** Prevent from entering sewer system, surface water or soil.

**CLEANING METHODS:** Sweep or shovel spills into appropriate container for disposal.

7. **HANDLING AND STORAGE**

**HANDLING:** Wear suitable protective equipment. Refer to section 8. Use normal personnel hygiene and good housekeeping.

**STORAGE:** Store in a cool, well-ventilated area, away from direct sunlight.

8. **ENGINEERING CONTROLS/PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:** None required with normal use.

**VENTILATION**

**LOCAL:** Use local exhaust in operations that create airborne dust where material is heated above 500°F. Local Exhaust is recommended in all heating operations where fumes are emitted following good industrial hygiene practices.

**GENERAL:** Recommended with all industrial operations.
PERSONAL PROTECTION

HAND: None required.
EYE: Safety glasses with side shields for all industrial operations
OTHER: Safety Shower/eyewash in the area

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPEARANCE</td>
<td>Clear Transparent Film</td>
</tr>
<tr>
<td>ODOR</td>
<td>None</td>
</tr>
<tr>
<td>PHYSICAL STATE</td>
<td>Solid</td>
</tr>
<tr>
<td>FLASH POINT</td>
<td>NA</td>
</tr>
<tr>
<td>BOILING POINT</td>
<td>NA</td>
</tr>
<tr>
<td>MELTING POINT</td>
<td>412°F (211°C)</td>
</tr>
<tr>
<td>FREEZING POINT</td>
<td>NA</td>
</tr>
<tr>
<td>WATER SOLUBILITY</td>
<td>NA</td>
</tr>
<tr>
<td>VAPOR PRESSURE</td>
<td>NE</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY</td>
<td>2.11 (Water = 1)</td>
</tr>
<tr>
<td>PARTITION COEFFICIENT</td>
<td>NA</td>
</tr>
<tr>
<td>EXPLOSIVE PROPERTIES</td>
<td>NA</td>
</tr>
<tr>
<td>EVAPORATION RATE</td>
<td>NA</td>
</tr>
<tr>
<td>DENSITY</td>
<td>NA</td>
</tr>
<tr>
<td>VISCOSITY</td>
<td>NA</td>
</tr>
<tr>
<td>IGNITION TEMPERATURE</td>
<td>NA</td>
</tr>
<tr>
<td>PH</td>
<td>NA</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
<td>NA</td>
</tr>
<tr>
<td>OXIDIZING PROPERTIES</td>
<td>NA</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

STABLE X UNSTABLE

PTFE begins to decompose very slowly above 500°F. Decomposition increases rapidly above 750°F and processing at these temperatures for prolonged periods of time is not recommended.

MATERIALS TO AVOID: None under normal use.
HAZARDOUS POLYMERIZATION: May Occur
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition products may include hydrogen chloride, hydrogen fluoride, carbon monoxide, and carbon dioxide and combustion by products as well as:
- Tetrafluoroethylene (Above 800°F)
- Hexafluoropropylene (Above 825°F)
- Perfluoroisobutylene (Above 885°F)
- Carbonyl Fluoride (Above 930°F)

11. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: NA
ACUTE/CHRONIC: NA
REPRODUCTIVE HAZARDS: NA

12. ECOLOGICAL INFORMATION

This material is considered inert and not expected to be biodegradable or toxic.
**13. DISPOSAL CONSIDERATION**

ENVIRONMENTAL TOXICITY DATA: NA
WASTE DISPOSAL METHOD: Dispose of in accordance with applicable, federal, state, provincial, and local laws and regulations.

**14. TRANSPORT INFORMATION**

DOT CLASSIFICATION: Not regulated.
IMDG CLASSIFICATION: Not regulated.
ICAO/IATA CLASSIFICATION: Not regulated.

**15. REGULATORY INFORMATION**

INTERNATIONAL REGUALTIONS:
Canadian (DSL/NDSL): NE (Considered a manufactured article.)
Australian (ACIS): NE
Korea (KECI): NE
European Union: (EINECS): Listed
Japan (ENCS, MITI): NE
EU Directive 2002/95/EC (RoHS): Compliant

European:
R-Phase(s): NA
S-Phase(s): NA

TSCA (Toxic Substances Control Act): All ingredients are TSCA Listed.

CERCLA (Comprehensive Emergency Response, Compensation, and Liability Act): NA

SARA TITLE III (Superfund Amendments and Reauthorization Act): NA

311/312 HAZARD CATEGORIES: None

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>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

**16. OTHER INFORMATION**

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

DATE REVISED: 07/01/2014  REVISIED BY: Greg Sullivan, CIH

FILE: 99028-Bonding Film 3001-07012014.doc

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