1. MATERIAL IDENTIFICATION

Product Name: **AB9042 from AngströmBond**

Emergency Phone: For product emergencies involving spill, leak, fire, exposure, or accident call CHEMTREC at (800) 424-9300. For all other inquiries call Fiber Optic Center™, Inc. at (800) 473-4237.

2. COMPOSITION

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>CAS No.</th>
<th>Percent</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylate Oligomer</td>
<td>Proprietary</td>
<td>10-30</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>Isobornyl Acrylate</td>
<td>5888-33-5</td>
<td>10-30</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>2-Hydroxyethyl methacrylate</td>
<td>868-77-9</td>
<td>10-30</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>2-[2(ethoxy)ethoxy]ethyl acrylate</td>
<td>7328-17-8</td>
<td>10-30</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>Proprietary</td>
<td>5-10</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>Acrylic Acid</td>
<td>79-10-7</td>
<td>1-5</td>
<td>2 ppm</td>
<td>N.E.</td>
<td>2 ppm</td>
</tr>
<tr>
<td>Photoinitiator</td>
<td>Proprietary</td>
<td>1-5</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>Silane Coupling Agent</td>
<td>Proprietary</td>
<td>1-5</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
<tr>
<td>Fluoroaliphatic Polymeric Esters</td>
<td>Proprietary</td>
<td>0.1-1</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
</tbody>
</table>

Abbreviations: N.E. = Not Established
All hazardous ingredients are listed in the TCSA inventory as required.

3. HEALTH HAZARDS IDENTIFICATION

Primary Routes of Exposure:
- Eyes: Yes
- Skin: Yes
- Inhalation: Yes

Eye Contact:
May cause irritation.

Skin Contact:
May cause skin irritation in susceptible persons, May cause sensitization by skin contact, Effects of skin contacts may include: Redness, rash, blistering, May cause skin irritation and/or dermatitis.

Inhalation:
May cause sensitization by inhalation, May cause irritation of respiratory tract.

Ingestion:
Ingestion may cause irritation to mucous membranes.

4. PERSONAL PROTECTION

- Eyes: Safety glasses with side-shields, If splashes are likely to occur, wear: Goggles.
- Skin: Wear suitable protective clothing.
- Inhalation: Positive fresh air exhaust should be provided in the work area; respiratory equipment is unnecessary in normal use.

5. ACCIDENTIAL RELEASE MEASURES

Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. Try to prevent the material from entering drains or water courses. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust)

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Fiber Optic Center™, Inc., 23 Centre Street, New Bedford, MA, 02740-6322, USA
Toll Free: (800) IS-FIBER or (800) 473-4237 • Phone: (508) 992-6464 • Fax: (508) 991-8876 • Website: www.focenter.com
6. HANDLING AND STORAGE
Storage: Keep container tightly closed in a dry and well-ventilated place, Protect from light, Store at room temperature in the original container.
Handling: Handle in accordance with good industrial hygiene and safety practice, Ensure adequate ventilation, Protect from light.

7. FIRE FIGHTING PROPERTIES

FLAMMABLE PROPERTIES
- Flash Point: > 226°F (PMCC) / 108°C
- Explosive Limits (% volume in air): Not applicable.
- Auto-Ignition Temperature: Not applicable.
- Hazardous Thermal Decomposition: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke.

EXTINGUISHING MEDIA and FIRE FIGHTING INSTRUCTIONS
When sufficiently large quantities are present, firefighters should be equipped with full bunker gear, including a positive pressure, NIOSH approved, self-contained breathing apparatus.
Extinguishing Media: Use foam, dry chemical or carbon dioxide.

8. EMERGENCY TREATMENT PROCEDURES
Inhalation: Get in some fresh air, and call physician if any symptoms appear.
Ingestion: Get medical attention.
Skin Protection: Wash off immediately with soap and plenty of water, Get medical attention if irritation develops and persists.
Eye Protection: Immediately flush eyes with water for at least 15 minutes. Get medical attention.

9. STABILITY AND REACTIVITY
Chemical Stability: Stable under normal conditions.
Hazardous Decomposition Products: No decomposition if stored and applied as directed.
Hazardous Polymerization: None under normal processing.

10. CHEMICAL AND PHYSICAL PROPERTIES
- Appearance: Transparent Liquid
- Odor: Characteristic
- Vapor Pressure: N.A.
- Solubility: N.A.
- Boiling Point: N.A.
- Vapor Density: N.A.
- Specific Gravity: N.A.
- Viscosity: 50,000 cP

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11. DISPOSAL

Waste Disposal Methods
This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

12. TOXICOLOGICAL INFORMATION

Acute toxicity

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral (Rat)</th>
<th>LD50 Dermal (Rabbit)</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobornyl Acrylate</td>
<td>4890 mg/kg</td>
<td>&gt; 5g/kg</td>
<td></td>
</tr>
<tr>
<td>2-Hydroxyethyl methacrylate</td>
<td>5050 mg/kg</td>
<td>&gt; 3000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>3160 mg/kg</td>
<td>5000 mg/kg</td>
<td>1.039 mg/l 4 h</td>
</tr>
<tr>
<td>Acrylic acid</td>
<td>33500 µg/kg</td>
<td>280 µL/kg</td>
<td>5300 mg/m³ 2 h</td>
</tr>
<tr>
<td>Sliane Coupling Agent</td>
<td>&gt; 5000 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chronic toxicity

Carcinogenicity
Contains no ingredients above reportable quantities listed as a carcinogen.

Subchronic toxicity

Sensitization
May cause sensitization of susceptible persons.

13. ECOLOGICAL INFORMATION

Ecotoxicity effects
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Acute aquatic toxicity

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>algae ErC 50 =2.7 mg/L 96h</th>
<th>fish LC50=1.8 mg/L 96 h</th>
<th>daphnia,aquatic invertebrates EC 50 = 1.1 mg/L 48 h</th>
<th>microorganisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobornyl Acrylate</td>
<td>(Pseudokirchneriella subcapitata)</td>
<td>(Danio rerio)</td>
<td>(Daphnia magna)</td>
<td></td>
</tr>
<tr>
<td>2-Hydroxyethyl methacrylate</td>
<td>LC50 213-242 mg/L 96 h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amorphous Silica</td>
<td>LC50 = 227 mg/L 96 h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acrylic acid</td>
<td>EC50 0.17 mg/L 96 h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sliane Coupling Agent</td>
<td>EC50 &gt; 536.00 mg/l 72 h</td>
<td>EC50 &gt;222 mg/L 96 h</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOEC > 536,00 mg/l 72 h

EC50 > 876,00 mg/l 48 h

EC10 2200mg/l16 h

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Rev. B 02/2014
14. REGULATORY INFORMATION

US FEDERAL REGULATIONS

OSHA Regulatory Status
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

SARA Title III Information
Section 313 – Toxic Chemicals:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>SARA 313 –Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylic acid</td>
<td>79-10-7</td>
<td>1-5</td>
<td>1.0</td>
</tr>
<tr>
<td>2-[2-(ethyloxy)ethyl acrylate]</td>
<td>7328-17-8</td>
<td>10-30</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories
Acute Health Hazard  Yes

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Hazardous Substances RQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrylic acid</td>
<td>5000 lb</td>
</tr>
</tbody>
</table>

NFPA: Health: 1  Flammability: 1  Reactivity: 1
HMIS: Health: 1  Flammability: 1  Reactivity: 1

State Right To Know
CALIFORNIA Proposition 65
This product contains materials which the State of California has found to cause cancer, birth defects, or other reproductive harm.

DOT/IATA: Not restricted
Mexico - Grade
Slight risk, Grade 1
Mexico
This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000)

Canada
WHMIS Statement
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
WHMIS Hazard Class
D2B Toxic materials

Fiber Optic Center™, Inc. urges each customer or recipient of this MSDS to study it carefully in order to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and/or fire prevention, as necessary to use and understand the data contained in this MSDS.

To promote safe handling, customers and recipients should: 1 – notify their employees, agents, contractors, and others whom they know or suspect will use this material or the information in this MSDS and any other information regarding hazards or safety; 2 – furnish this same information to each of their customers for the product; and 3 – request their customers to notify their employees, customers and other users of the product of this information.

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