FibraLAST™ PC-200
Non-fluorinated Barrier Technology

Additive for paper and paperboard products
Our Mission

We’re committed to supplying our customers high-performance material solutions through our motivated employees, innovative technologies and responsiveness.
New Non-fluorinated Barrier Technology

FibralAST™

Designed as an environmentally friendly alternative to traditional oil sizing product grades as non-fluorinated sizing additives to protect paper products from both water and food oils.
New Non-fluorinated Barrier Technology

Fluorinated vs. Non-fluorinated FibraLAST

- Coats individual fibers
- Low surface energy of the fibers prevents penetration by higher surface tension liquids

- Coats fibers and fills pores in fiber network
- A single wet-end additive repels both water and oil
- Unique combination of chemical and physical barrier
- Liquids face a tortuous path to penetrate fiber network
Applications for FibraLAST Additives

- Molded, formed fiber, and cardboard products
- Fast-casual bowls, plates, containers, pizza boxes
Approved for Food Contact

- FDA compliant for contact with food of all types, with the following limitations:
  1. Maximum loading of 20% active content by weight of oven-dried pulp
  2. Apply prior to sheet forming
  3. Use in accordance with current good manufacturing practice
- Kosher approval pending
Benefits for Paper and Molded Fiber Products

- Repels water
- Provides a barrier against food oils and greases
- Prevents bleed-through of high-temperature liquids and oils
- -80 °C water and oil holdout performance
- Patent pending technology
- Made in the U.S.A.
Environmental Benefits

- Non-fluorinated
- No silicones
- No heavy metals
- Plant derived components
Processing with FibraLAST

- Applied to the paper pulp itself
- Designed for wet end processes
- No additional equipment or process required since additives are applied to the pulp before fabrication
**FibraLAST Certification Status**

<table>
<thead>
<tr>
<th>Certification</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDA Food Contact</td>
<td>✓</td>
</tr>
<tr>
<td>BfR Compliant</td>
<td>In progress</td>
</tr>
<tr>
<td>BPI Certified Compostable</td>
<td>In progress</td>
</tr>
<tr>
<td>Kosher</td>
<td>In progress*</td>
</tr>
<tr>
<td>Kosher certification of manufacturing facility</td>
<td>In progress</td>
</tr>
<tr>
<td>on DSL</td>
<td>✓</td>
</tr>
<tr>
<td>ChemForward or GreenScreen inventories</td>
<td>Being considered</td>
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</tbody>
</table>

*raw materials are not animal sourced*
TAPPI Holdout Performance Test Results

80 °C Mazola® corn oil for 2 hours

<table>
<thead>
<tr>
<th>300 gsm</th>
<th>untreated</th>
<th>PC-200 5% dry/OD</th>
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</thead>
<tbody>
<tr>
<td>top</td>
<td><img src="image1.png" alt="Untreated Top" /></td>
<td><img src="image2.png" alt="PC-200 Top" /></td>
</tr>
<tr>
<td>bottom</td>
<td><img src="image3.png" alt="Untreated Bottom" /></td>
<td><img src="image4.png" alt="PC-200 Bottom" /></td>
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<tr>
<td>TAPPI kit score</td>
<td>0</td>
<td>4</td>
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</table>
**TAPPI Holdout Performance Test Results**

90 °C tap water

<table>
<thead>
<tr>
<th></th>
<th>300 gsm</th>
<th>untreated</th>
<th>PC-200 5% dry/OD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>top</strong></td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td><strong>bottom</strong></td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td>Cobb 120 (gsm)</td>
<td>440.7</td>
<td>22.6</td>
<td></td>
</tr>
</tbody>
</table>

*No AKD or ASA needed*
FibraLAST Now Available

- Currently in scale-up
- Will be manufactured in the United States
- Not currently available in all regions

Learn more
www.agcchem.com
610-423-4300 800-424-7833
AGC Global Operations

A world-leading fluorochemical manufacturer

US $14.2 billion net sales

56,000 employees

205 consolidated subsidiaries in 30 countries

Your Dreams, Our Challenge
Global Network

AGC Chemicals Japan
- Headquarters – Tokyo
- Factories – Chiba and Kashima
- Sales offices – Tokyo, Osaka, Fukuoka, Nagoya
- R&D – Yokohama

AGC Chemicals Asia
- AGC Chemicals Trading Co. Ltd. – Shanghai, China
- P.T. Asahimas Chemical – Jakarta, Indonesia
- AGC Chemicals Co. Ltd. – Bangkok, Thailand
- AGC Chemicals Asia Pacific Pte. Ltd. – Singapore

AGC Chemicals Europe
- Head Office and Production Plant Thornton Cleveleys, UK
- Chemicals Commercial Center – Amsterdam, The Netherlands
- Sales office in Russia

AGC Chemicals Americas
- Production Plant – Thorndale, Pa.
- Formed in 2004 through a merger with AGA Chemicals and AG Fluoropolymers USA
- Sales office in Guaratinguetá Brazil