Release Films

• Optical quality coating
• Class 1,000 and 10,000 coating and converting
• Ultra smooth coating
• Stable, uniform release properties
• Easy winding characteristics
• Easy and moderate release options
• Multiple substrate options
• Multiple coating options
• Controlled release options

Functional Coatings

• Anti-stat
• Matte
• Hardcoat
• Friction
• Tints
• Fire retardant
• Adhesives
• Primers
• Conductive
• Toll coating

Coating Systems

• UV curable coatings
• Aqueous-based coatings
• Solvent-based coatings

Laminations

• Optical quality lamination
• Class 1,000 and 10,000 clean room
• Superior curl control
• State-of-the-art tension controls
• Multi-layer capability
• Toll lamination

Sputtered Films

• Single or multi-layer
• Multi-cathode
• Multi-zone
• Rotatable or planar magnetron
• In-line optical monitoring (VLT, R, Color)
• Plasma emission control
• In-line resistance monitoring
• Plasma pre-treat
Custom solutions involving coated and laminated films require an understanding of the application and the experience with a broad range of processes and materials. Saint-Gobain has more than 40 years of experience in developing custom solutions for the most demanding applications. Whether precision substrate coating, sputtering or clean room lamination, we have the people, capabilities and company resources to be your partner of choice for the long term.

Engineered Films
Our product line comprises principally silicone and specialty formulated coatings applied to films and custom laminations. Customers who use these products operate within a wide range of industries, including medical, consumer electronics, graphics, digital printing, tapes, labels, decals, automotive and general industrial.

Capabilities
Saint-Gobain meets the exacting demands of multiple markets. We have the capability, equipment and ingenuity to process differential and two-sided release coatings as well as a multitude of other surface coatings – anti-graffiti, tints and hardcoats, for example.

Several unique coating methods are available to ensure distinctive and optimal performance characteristics.

• Coating width capability is 78 inches (1,981 mm)
• Roll weights up to 2,400 pounds (>1,000 kg)
• Substrate thickness from 0.2 mil–50 mil (.005 mm–1.27 mm)

Saint-Gobain’s state-of-the-art manufacturing and production facilities feature superbly equipped class 1,000 and 10,000 clean rooms. The modular design of our processing equipment, including coating heads and ancillary assemblies, provides optimum flexibility, enabling us to switch from production of one product to another with minimal downtime.

Specialties
Our vast experience with coating chemistries and substrates allows us to process very smooth and thin films with precision and ease. We specialize in optical grade coatings. These clean, clear coatings are designed to accommodate even the most critical medical, electronic and industrial applications.

Customization
One size does not fit all. The very nature of the industries we serve requires products that are finely tuned to perform to individual needs. Our sales managers work directly with our chemists and application engineers to define and customize products that work for you. We have on-site labs, access to world-class R&D facilities located at or near our production sites and pilot coaters that offer economic trial options for new customers. Based on your needs, we can also serve as a toll manufacturer for your formulations.

Responsiveness
Product development should not be a slow process. We recognize there is tremendous value in the marketplace to not only deliver quality solutions, but to deliver them fast. Our business managers, customer support team and chemists are all centrally located and work together to provide quick answers and quick solutions.
### Examples of Other General and Specialty Release Coatings

<table>
<thead>
<tr>
<th>PRODUCT LINE</th>
<th>Series / Coatings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Tin</td>
<td>5000 Series</td>
</tr>
<tr>
<td>Thermal Platinum</td>
<td>6000 Series</td>
</tr>
<tr>
<td>UV Epoxy</td>
<td>4000 Series</td>
</tr>
<tr>
<td>UV Epoxy</td>
<td>7000 Series</td>
</tr>
<tr>
<td>UV Acrylated</td>
<td>8000 Series</td>
</tr>
<tr>
<td>Non-silicone</td>
<td>0092</td>
</tr>
<tr>
<td>Fluoro-silicone</td>
<td>9000 Series</td>
</tr>
</tbody>
</table>

### Film Selection Guide

<table>
<thead>
<tr>
<th>FILM</th>
<th>Gauge</th>
<th>Market</th>
<th>Applications</th>
<th>Key Properties</th>
</tr>
</thead>
</table>
| Polyester (PET)     | 92-1,400 | Label | Roll label, overlaminates, beverage, pharmaceutical, toiletries, health & beauty | • High tensile and tear resistance  
                      |       | Decal Graphic | Transfer lettering, window graphics                                          | • Excellent smoothness  
                      |       | Industrial    | Solar, gaskets, nameplate, automotive, construction, composites, free adhesives | • High clarity  
                      |       | Tape          | One/two side, transfer                                                        | • Gauge control  
                      |       | Medical       | Transdermal, hydrogels, wound care, EKG, hygiene                             | • Temperature resistance  
                      |       |               |                                                                               | • Recyclable  
                      |       |               |                                                                               | • Back-side printable  
                      |       |               |                                                                               | • Mechanically stable  
                      |       |               |                                                                               | • Spliceable  |
| Polystyrene (PS)    | 750-1,000 | Medical | Hydrogels, wound care, EKG                                                      | • Thermoformable  
                      |       | Label         | Piggyback                                                                     | • Good stiffness  
                      |       |               |                                                                               | • Back-side printable |
| Polyvinyl Chloride (PVC) | 800-1,000 | Medical | Transdermal, hydrogels, EKG                                                     | • Thermoformable |
| Polyethylene (PE)   | 100-2,300 | Tape  | One/two side, transfer                                                          | • Tear resistance  
                      |       | Medical       | Wound care, hygiene                                                            | • Conformable  
                      |       | Industrial    | Construction gasket, automotive                                                | • High yield  
                      |       |               |                                                                               | • High yield  |
Sputtered Films

Sputtering is a vacuum deposition technique in which a thin film is deposited in a precise, uniform layer to a substrate for medical, graphic arts and imaging, electronic, automotive, aerospace and security applications. Saint-Gobain partners with large OEMs to provide sputtered film components that enhance their own product offering.

Using state-of-the-art facilities, Saint-Gobain provides roll-to-roll sputtering capabilities using a wide variety of precious metals and oxides in single or multi-layer constructions. Saint-Gobain also can apply adhesives, hard coats and other custom coatings to create a film tailored to your needs. Saint-Gobain works with customers in a wide range of markets that demand the highest quality products and the strictest confidentiality from concept and process development to commercial production.

Product capabilities include clean room sputtering, wet coating and custom slitting.

<table>
<thead>
<tr>
<th>Typical Deposition Materials</th>
<th>Examples of Previously Sputtered Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Material</strong></td>
<td><strong>Metals and Alloys</strong></td>
</tr>
<tr>
<td></td>
<td>Gold, silver, platinum, palladium, titanium, aluminum, nickel, copper, Inconel, stainless steel, chrome, copper and zirconium</td>
</tr>
<tr>
<td><strong>Oxides, Nitrides and Carbides</strong></td>
<td>Indium tin oxide, silicone oxide, titanium oxide, zinc oxide, aluminum oxide, titanium nitride, chrome nitride, titanium carbide and silicone carbide</td>
</tr>
</tbody>
</table>
Limited Warranty: For a period of 6 months from the date of first sale, Saint-Gobain Performance Plastics Corporation warrants this product(s) to be free from defects in manufacturing. Our only obligation will be to provide replacement product for any portion proving defective, or at our option, to refund the purchase price thereof. User assumes all other risks, if any, including the risk of injury, loss or damage, whether direct or consequential, arising out of the use, misuse, or inability to use this product(s). SAINT-GOBAIN PERFORMANCE PLASTICS DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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