CHEMFAB® CHEMFILM®

PEM FUEL CELL PROCESSING AIDS, GASKETS & MEAs SUPPORTS

RELEASE & PROTECTION SOLUTIONS FOR **COMPONENTS AND FUTURE ENERGY STRATEGIES**

In today's and future energy strategies, fuel cells and hydrogen electrolysis are an increasing source of sustainable clean energy. They will form the foundation of a new era of energy usage in heating, transportation, and many other industries.

Saint-Gobain Films and Fabrics plays a major role by helping to increase Membrane Electrode Assembly (MEA) efficiency, ensure efficient decal processes, and decrease stack size. They offer a combination of high mechanical strength, smooth surface, excellent dielectric properties, and outstanding release behaviour.

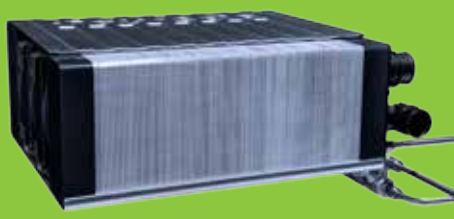
WITH OUR PRODUCTS YOU CAN ACHIEVE:

1. **REDUCED STACK HEIGHT**
2. **HIGH SPEED DECAL PRODUCTIVITY**
3. **THINNER AND HOMOGENEOUS CATALYST LAYERS**

ENERGY

MULTI-MATERIAL SOLUTIONS USED IN...

- Production of Catalytic Layers
- Lamination of CCMs by Transfer
- Sub Gaskets & Frame Gaskets



SAINT-GOBAIN

- Superior chemical resistance
- Excellent smooth surface
- Configurable for any required size
- Low thickness tolerance
- High temperature resistance up to 260°C/500°F
- Excellent heat transfer
- Excellent non-stick surface
- Greatly consolidated surface
- Excellent dielectric properties
- Low shrinkage/hysteresis

FEATURES

OUTCOMES

- Improved productivity due to higher process speed
- Optimal release
- Low risk of creasing
- Less downtime
- Consistent production processes
- Low risk of failure due to chemical inertness
- Great sealing properties
- Providing multiple gasketing functions
- Usable in harsh environments

SAINT-GOBAIN CHEMFAB® and CHEMFILM® release solutions work as effective processing aids for the decal process in the production of catalytic layers for energy efficient fuel cells.

Used as processing belts, they are a very flat, smooth and mechanically stable substrate surface upon which the catalytic ink is evenly distributed in a controlled manner. They have excellent thermal stability, up to 260°C, and because of its hysteresis behaviour they are suitable for most decal processes even under challenging conditions.

At the end of the production of the Catalyst Coated Membrane (CCM) by decal transfer method, the substrates can easily be removed allowing 100% transfer of the catalytic layer. Extremely thin and light, our release liners carry the finished CCM during winding-up, allowing customers to have more CCM on each roll for increased productivity.

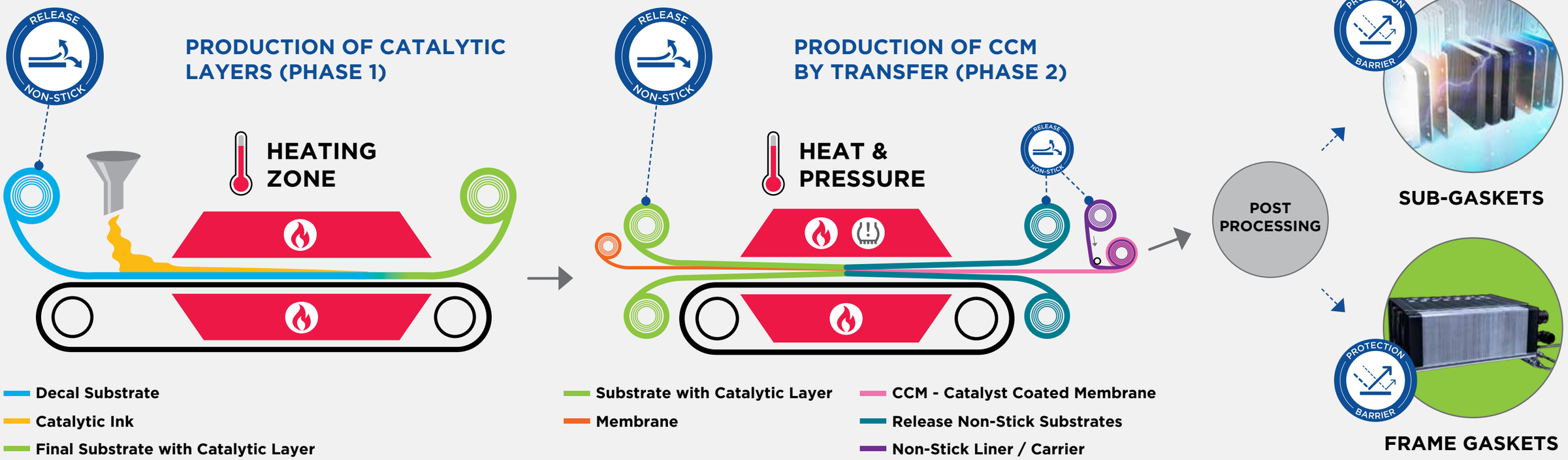
Multi-functional, reliable and robust, SAINT-GOBAIN composites are also used as seals and separator component parts within the fuel cell system. Suitable as sub-gaskets or as frame gaskets, they ensure the energy efficiency of the fuel cell stacks and provide modularity to the system.

One of the key features of Saint-Gobain's gasket and seal components solutions is their reduced material creep and excellent tensile strength. This provides long-lasting performance in fuel cells which are often operating in very challenging environments.

CHEMFAB® and CHEMFILM® multi-material composites work as protection and barrier solutions within the Fuel Cell Systems. They have the ability to perform well in the presence of multiple stress factors or challenging conditions, such as temperatures up to a peak of 300°C, frequent flexing, elevated pressures, as well as multiple exposure to chemicals. Finally, their non-burning characteristics are paramount even in the presence of fire. All of our protection barrier solutions are components that are customised and configured for many new developments in the energy sector.

The Saint-Gobain range of materials for sub-gaskets and gaskets can be supplied as sheets or roll-to-roll process or we can die-cut to your required size.

SAINT-GOBAIN NON-STICK RELEASE SOLUTIONS & BARRIER PROTECTION SOLUTIONS



WHERE CAN SAINT-GOBAIN FILMS AND FABRICS BE USED?

All PEM Fuel Cells for:

- Automotive
- Home Heating Systems
- BUP Power Stations
- Electrolyzer

SAINT-GOBAIN FILMS AND FABRICS PRODUCTS OF CHOICE

SRF206	Smooth surface and durable release for **decal substrates**
PET 9011	High tensile strength and tear resistance for **CCM liners**
DF2919N	Smooth surface and good friction properties for **sub-gaskets**
0200 Skived PTFE	Excellent dielectric properties and low permeability for **frame gaskets**

CASE STUDY

INCREASING THE CCM OUTPUT BY THREEFOLD

Improved productivity and cost effectiveness

After switching to our solution, one of our customers reported a threefold increase in his output of CCM per roll.

Used as the carrier belt for their CCM wind-up, our film showed exceptional tensile strength – which in combination with a release coating allowed the customer to go significantly thinner with the carrier – this optimizing the ratio of carrier vs. CCM on the roll. We are committed to working in partnership with our customers and developing customized solutions - while utilizing our wide range of different material options available in various thicknesses to identify the best solution for customer needs.

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