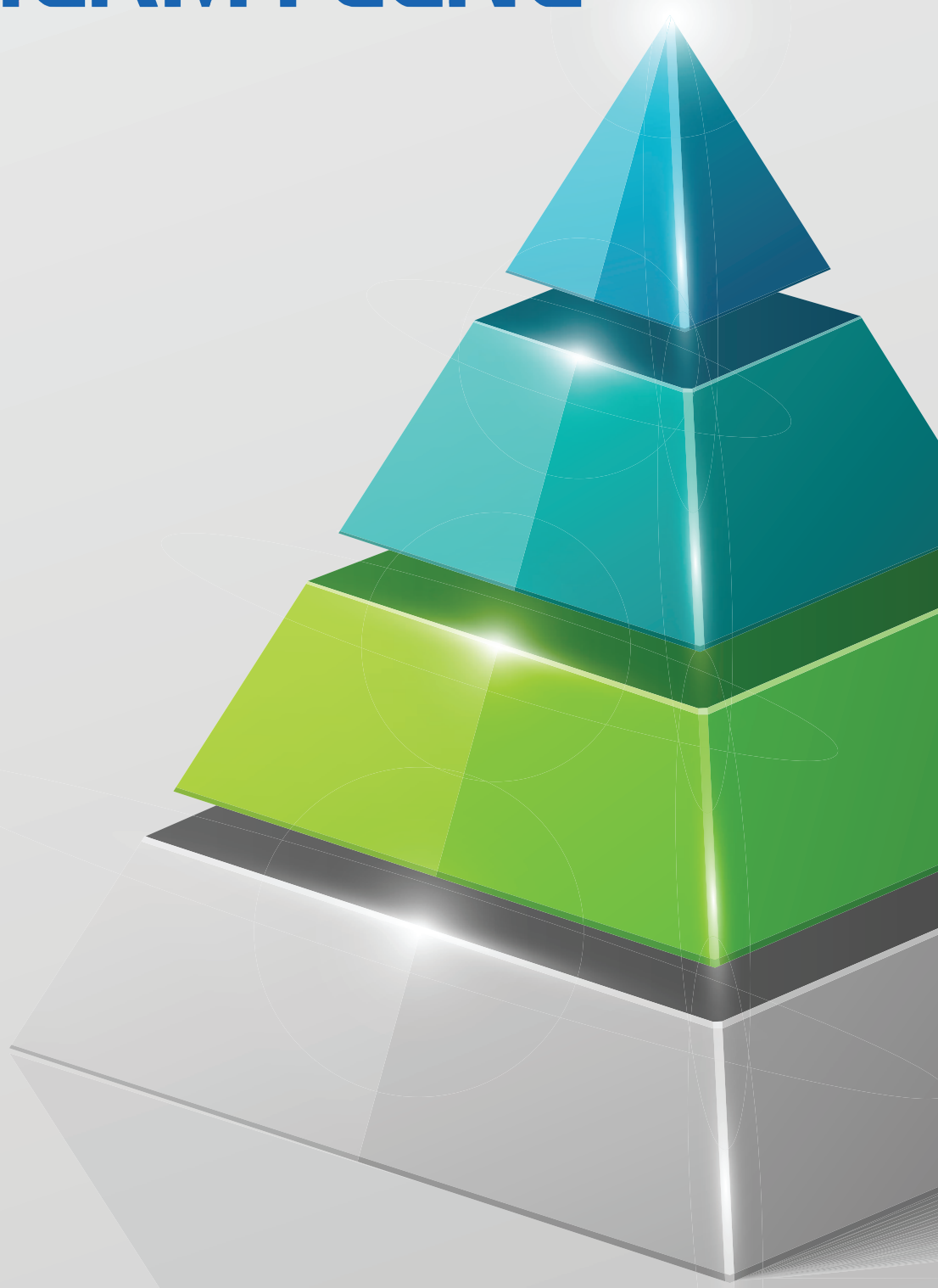
THERMYLENE®



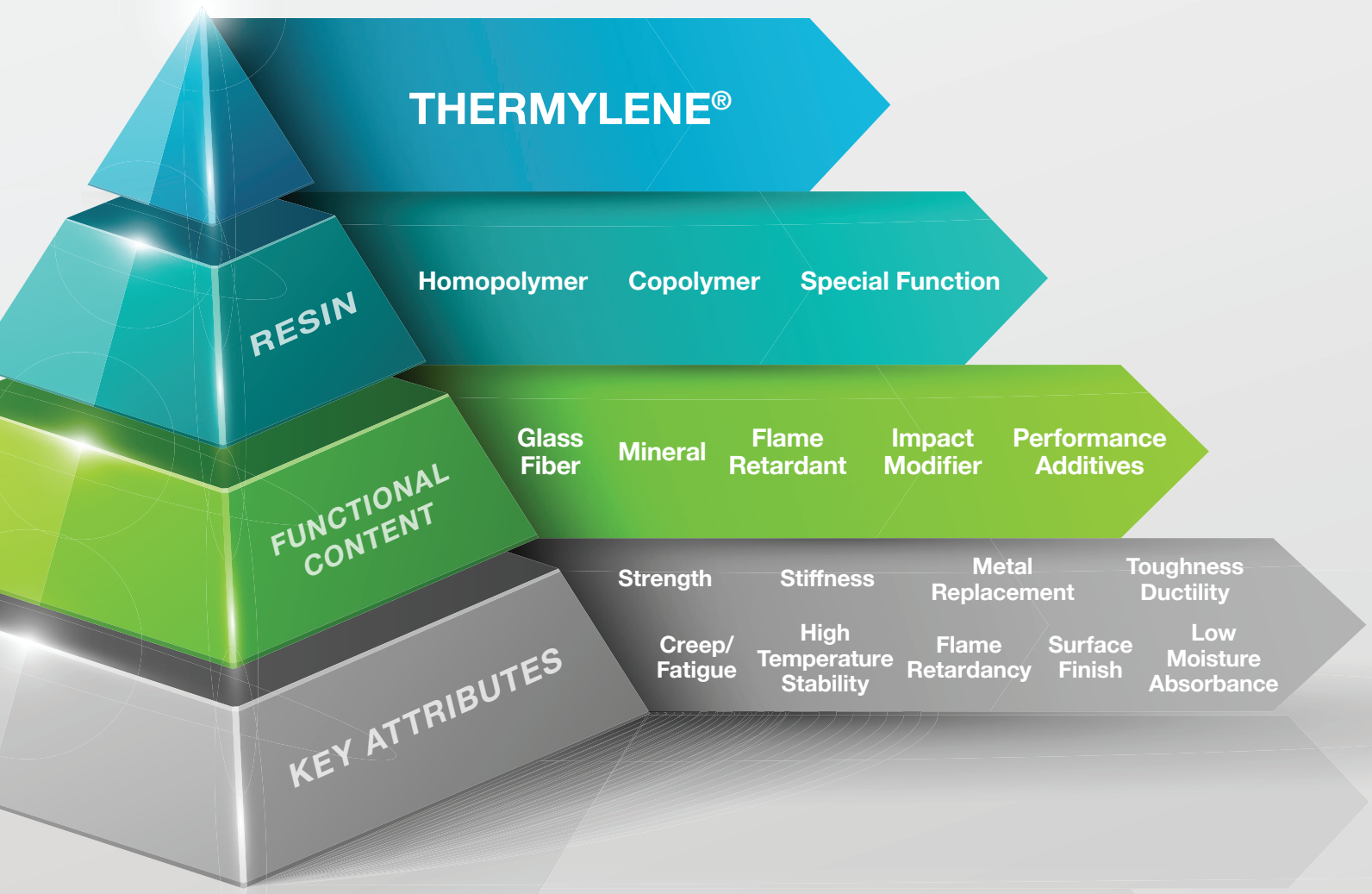
Engineered Polypropylene Compounds

AsahiKASEI

Innovative Polypropylene Compounds for Enabling Applications

What is Thermylene®?

Thermylene® is a series of engineered polypropylene compounds designed to enable application performance requirements at an optimal value. The enhanced properties of these polymers yield an extremely attractive cost/performance balance when compared to traditional engineering thermoplastics. Thermylene® is a globally established brand that is currently in production in multiple locations throughout North America, Europe and Asia.

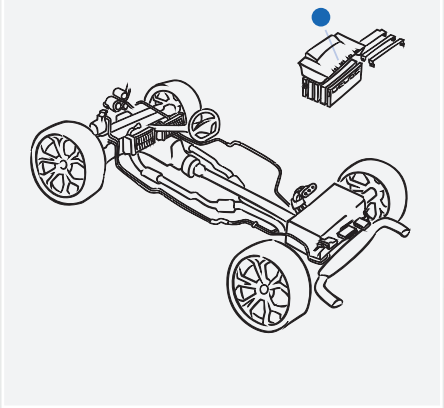


Key Attributes:

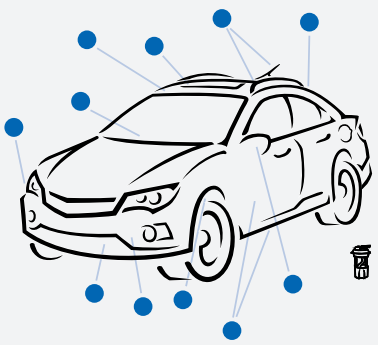
- Available in all varieties of fillers and reinforcements
- Portfolio includes high performance chemically coupled glass reinforced polypropylene compounds
- Enhanced tensile strength and stiffness
- Enhanced toughness
- Underhood temperature performance
- Higher creep resistance
- Excellent chemical resistance
- R&D focused on innovation with patented technology
- Custom designed formulations
- Global technical service support
- Automotive and regulatory approved grades

A Broad Range of Product Applications Across Diverse Industries

Automotive Electric

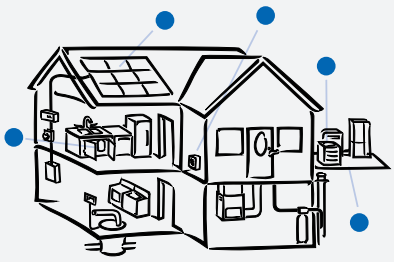


Automotive Exterior



Automotive Interior

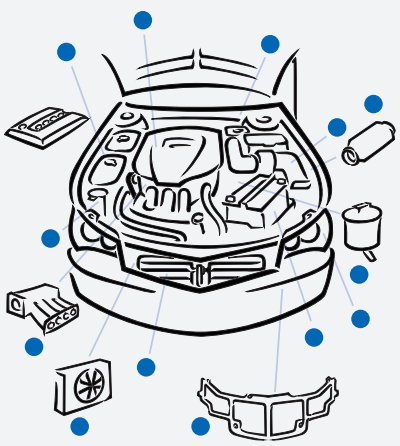
Home Electric



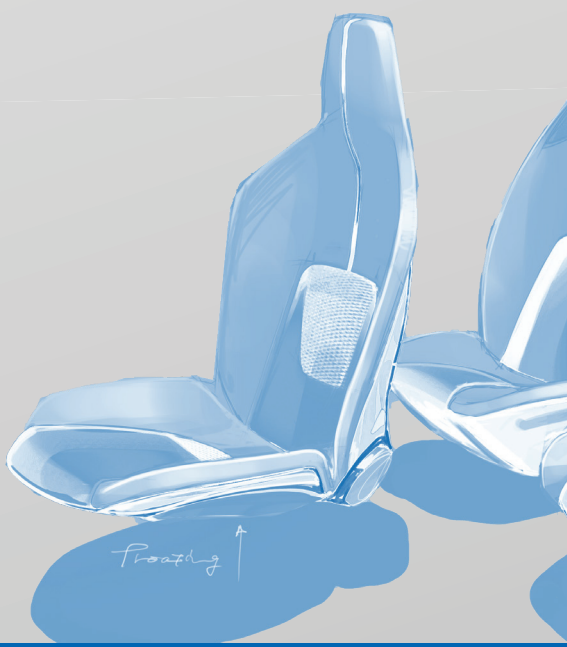
Home Water

Furniture

Automotive Underhood



Trucking



● Thermylene® Applications

Technology Evolution

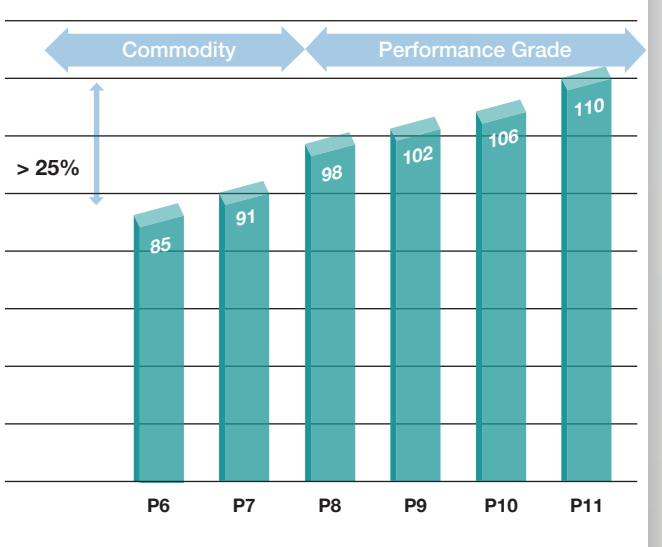
GF-30 Comparison

Property	Specification	Units	Thermylene P6-30FG	Thermylene P7-30FG	Thermylene P8-30FG	Thermylene P9-30FG	Thermylene P10-30FG	Thermylene P11-30FG
Filler		%	30	30	30	30	30	30
Tensile Strength	ISO 527	MPa	85	91	98	102	106	110
Flexural Modulus	ISO 178	MPa	5900	6500	6600	6900	6600	6900
Notched Charpy	ISO 179	kJ/m2	8.5	10	10	9	10	10
HDT @ 1.8 MPa	ISO 75	°C	142	146	148	150	152	154

Performance Improvement @ Constant Density of ~1.14 g/cm³

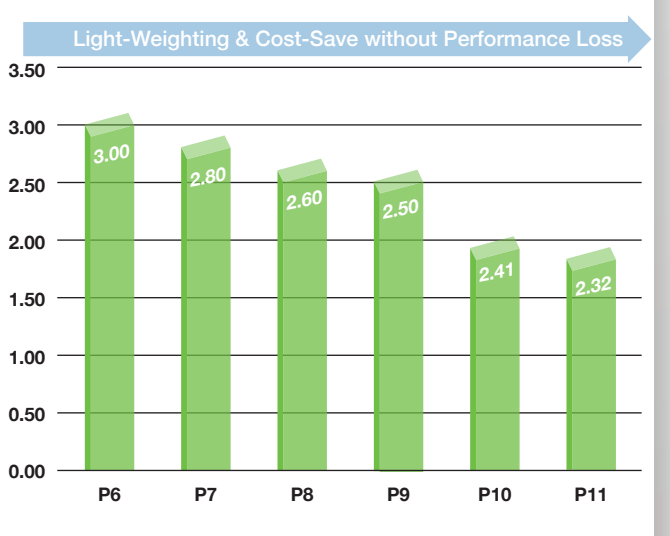
Performance Evolution @ Constant Density

PP-30GF Strength, MPa

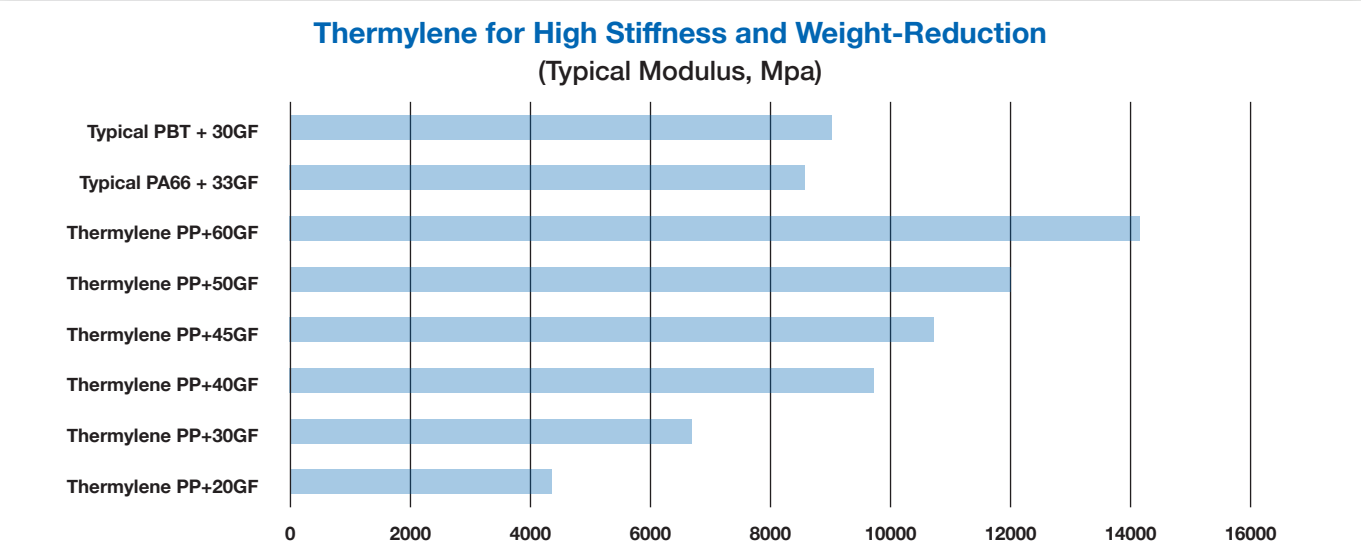


Nominal Wall Thickness Reduction Potential

(Represents mm units; Calculated for 10mm part width; 2550 N load force)

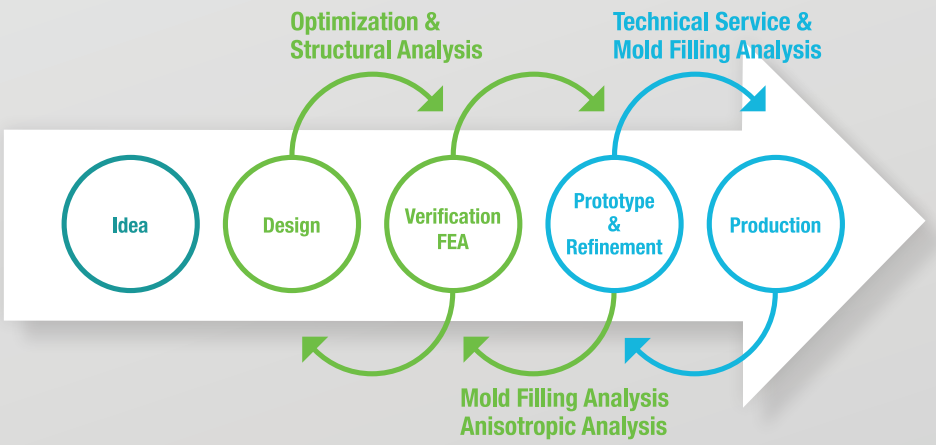


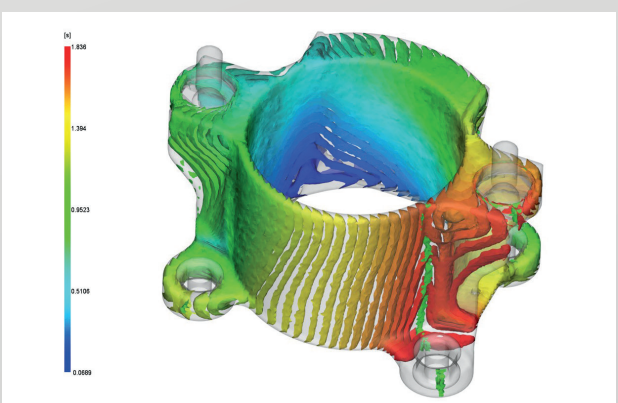
Modulus Spectrum



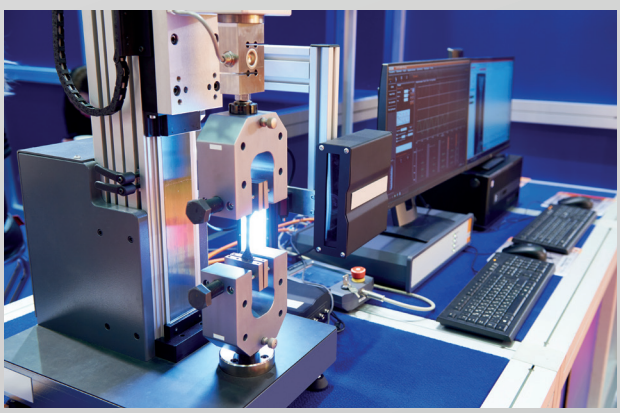
Computer Aided Engineering (CAE)

Asahi Kasei supports the application success of our customers with computer aided engineering (CAE) support. This support includes, but is not limited to, material testing, material processing, molding, mold flow analysis, part design and structural finite element analysis (FEA) capabilities. All these testing methods are available on global scale.





Simulation Output Example



Lab Capabilities

Specialty Grades

Thermylene® Soform™

Soform™ is developed as a soft-touch haptics grade that provides structural soundness. It is tailored for weathering and enhanced scratch resistance in your applications. Soform™ can help eliminate need for soft-touch paints, over-molding with soft materials, while also being able to be directly injection molded.

Thermylene® Element™

Element™ is designed to provide your applications with a hydrophobic part surface to help repel ice and water build-up in cold conditions. Element™ can also help repel surface stains such as coffee, sunscreen, juice and lotion, to help your application have a stain-free and longer service life. It can be designed with tailored mechanical properties, weathering and scratch resistance.

Thermylene® Stress Whitening Prevention™ (SWP)

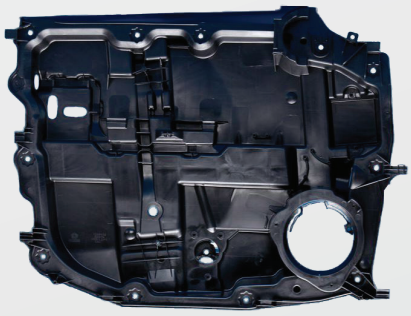
The Thermylene® Stress Whitening Prevention™ (SWP) is a patented technology that has been designed to eliminate stress whitening defects that occur in molded applications. This technology was initially designed for furniture and consumer applications but has been perfected to also improve aesthetics in automotive interiors. SWP is available in various configurations to meet the mechanical requirements of various applications.

Thermylene® Thermoforming Grades

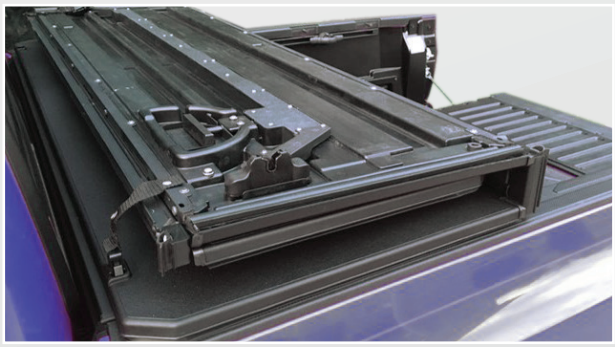
The Thermylene® family of thermoforming grades are meant for use in deep draw thermoforming applications. These materials have very high melt strength compared to competitive materials and wide processing windows. Grades can be designed according to your application with varying levels of stiffness, gloss and superior UV and scratch resistance.

Awards and Recognition

Thermylene® Door Module



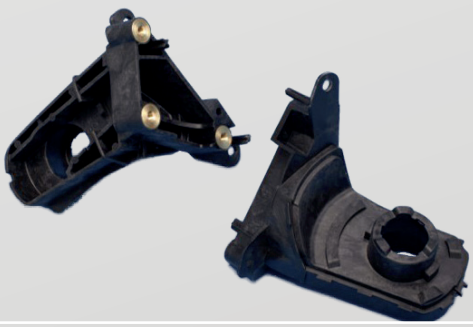
Thermylene® Tonneau Cover Assembly



Thermylene® Integrated Sunroof Module

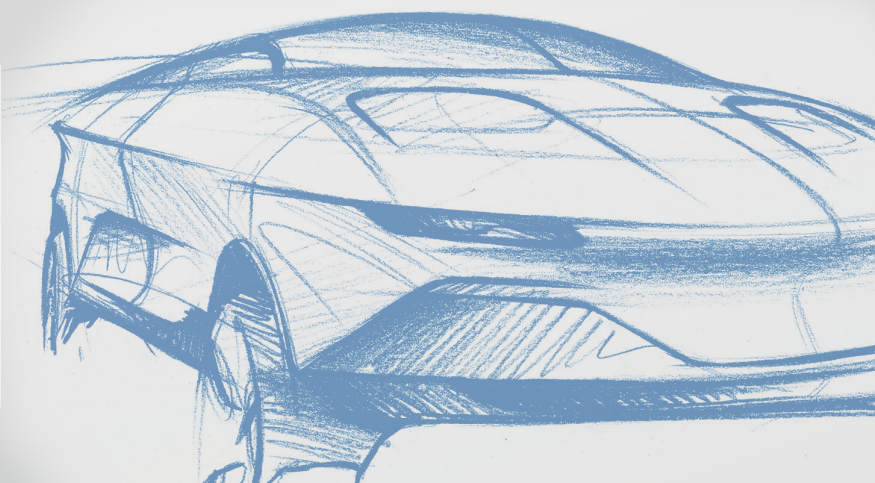
Thermylene® Fan Shroud

Thermylene® Mirror Bracket



Thermylene® Wiper Components

Thermylene® Truck Storage Box



Plastics Resources Around the Globe

Thermylene® Resources:

United States of America and Mexico
Asahi Kasei Plastics North America
https://www.akplastics.com/
+1-517-223-2000

European Countries
Asahi Kasei Europe GmbH
https://www.asahi-kasei.eu/
+49-(0)211-8822-030

Japan
Asahi Kasei Advance Corporation
https://www.asahi-kasei.co.jp/asahi
+81-3-5404-5043

China
Asahi Kasei Plastics Shanghai Co., Ltd.
https://www.asahi-kasei.cn
+86-(0)21-6391-5252

Thailand
Asahi Kasei Advance Thailand Co., Ltd
http://www.asahi-kasei.co.th/index.php/en/
+66-2258-4870

India
Asahi Kasei India Pvt. Ltd.
https://asahi-kasei.in/
+91-22-6710-3962

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