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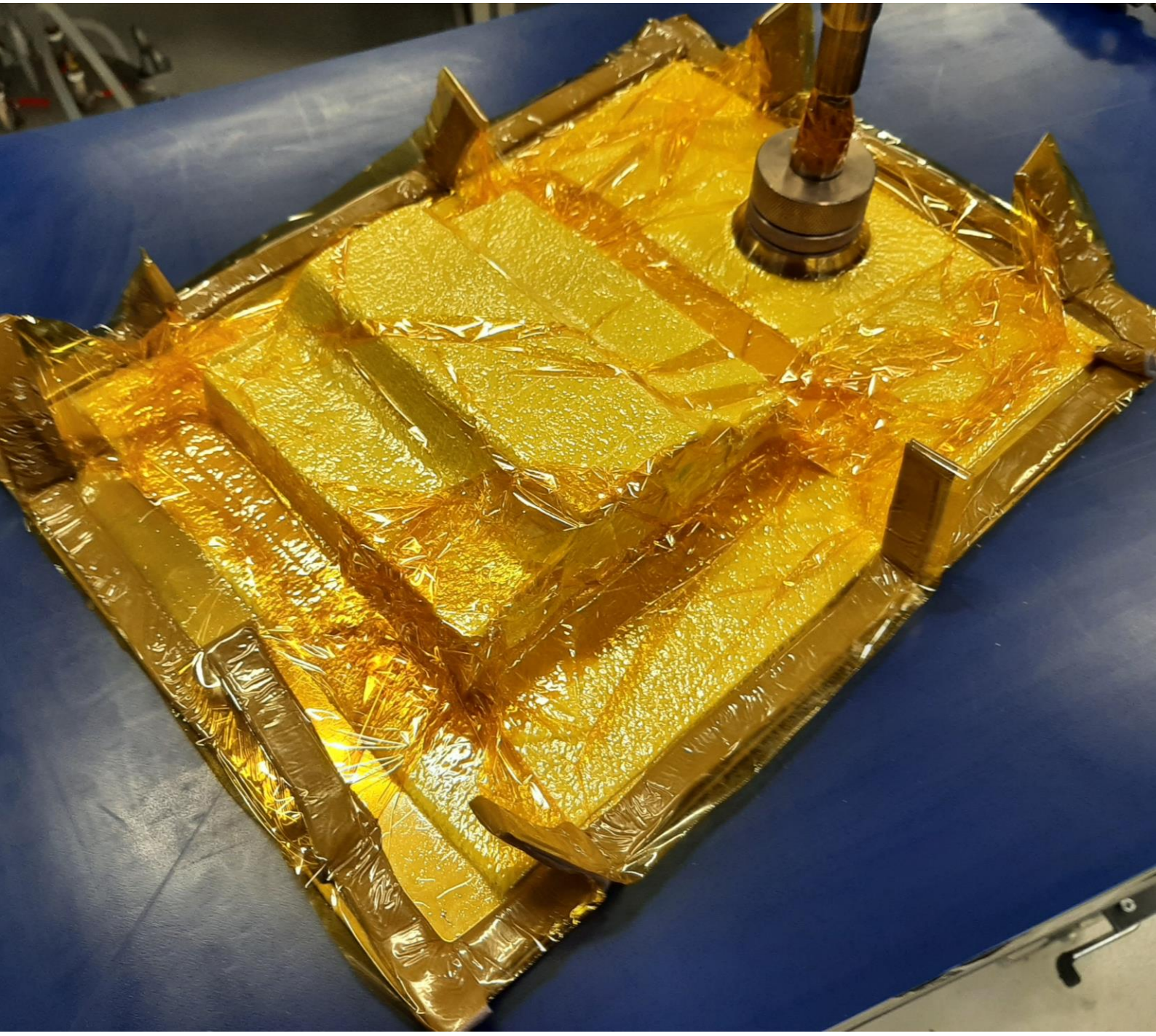
ADVANCED MATERIALS GROUP

Ultra-High Temperature
Vacuum Bagging Materials



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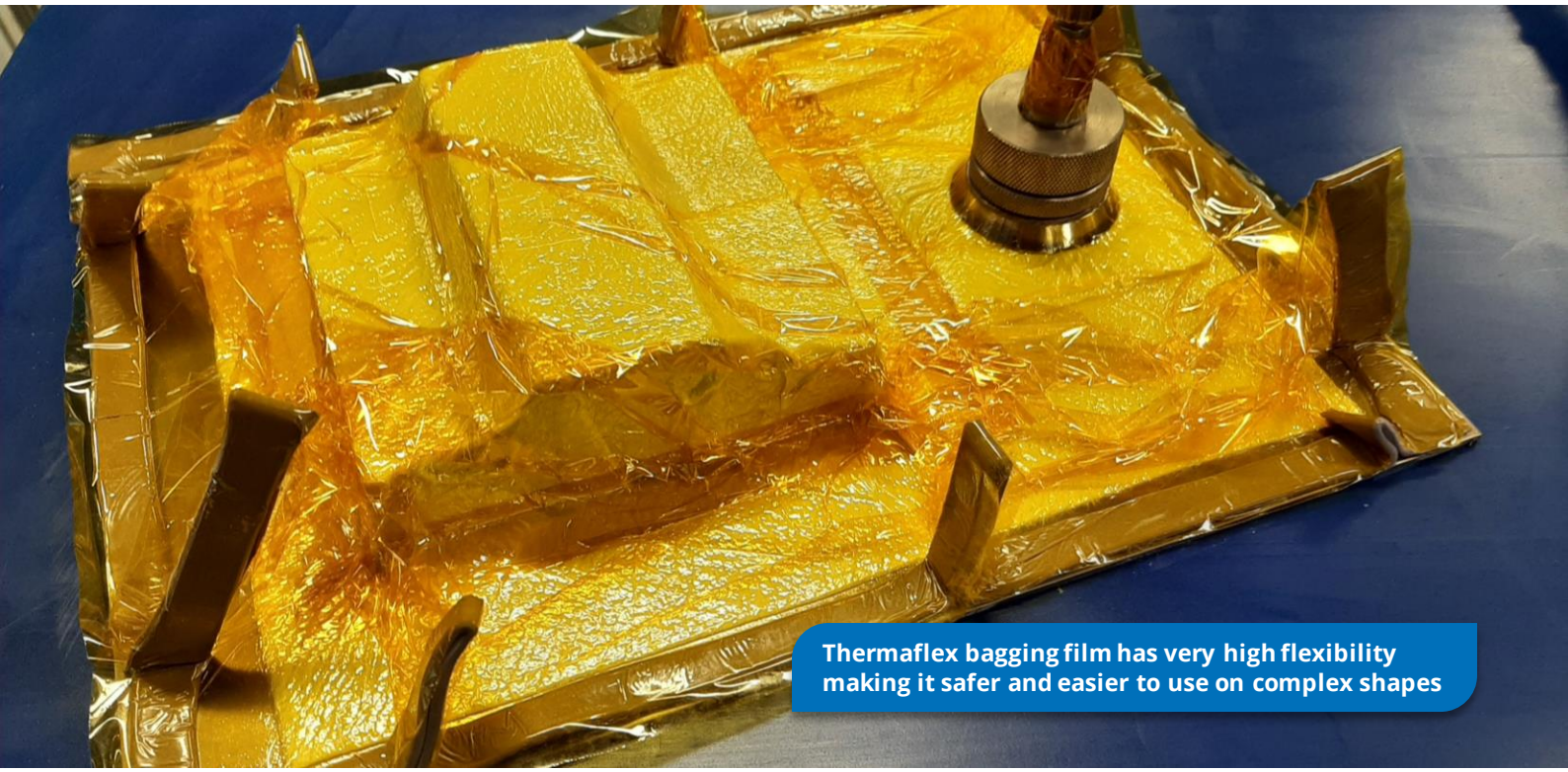
Vacuum Bagging & Composite Tooling Materials

Vacuum bagging films



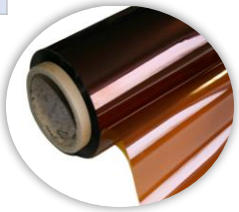
Thermaflex bagging film has very high flexibility making it safer and easier to use on complex shapes

Thermalimide

Strong and Flexible

Maximum Use Temperature	Elongation	Tensile Strength	Roll Sizes (Metric)	Roll Sizes (Inches)
426°C (799°F)	80%	240 MPa (35,000 psi)	12.7 µm x 1.52m SHT x 78m	0.0005" x 60" SHT x 255ft
Description			25 µm x 1.52m SHT x 78m	0.001" x 60" SHT x 255ft
			50 µm x 1.52m SHT x 78m	0.002" x 60" SHT x 255ft
			25 µm x 2.00m SHT x 78m	0.001" x 78.70" SHT x 255ft
			50 µm x 2.00m SHT x 78m	0.002" x 78.70" SHT x 255ft

Thermalimide is a high-performance bagging film for cure temperatures up to 426°C (799°F). High temperature resistance enables vacuum bagging for extremely high temperature applications. Superior toughness of film in comparison to metallic foils helps avoid bag tearing.

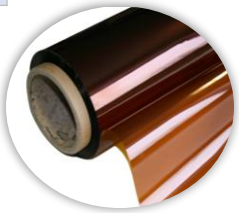


ThermaFlex

Highly Flexible

Maximum Use Temperature	Elongation	Tensile Strength	Roll Sizes (Metric)	Roll Sizes (Inches)
426°C (799°F)	80%	240 MPa (35,000 psi)		
Description			1.52m SHT x 78m	60" SHT x 255ft
			1.52m SHT x 155m	60" SHT x 510ft

ThermaFlex is a highly flexible bagging film for cure temperatures up to 799°F (426°C). High temperature resistance enables vacuum bagging for extremely high temperature applications. High flexibility for applying pressure over simple contoured shapes.



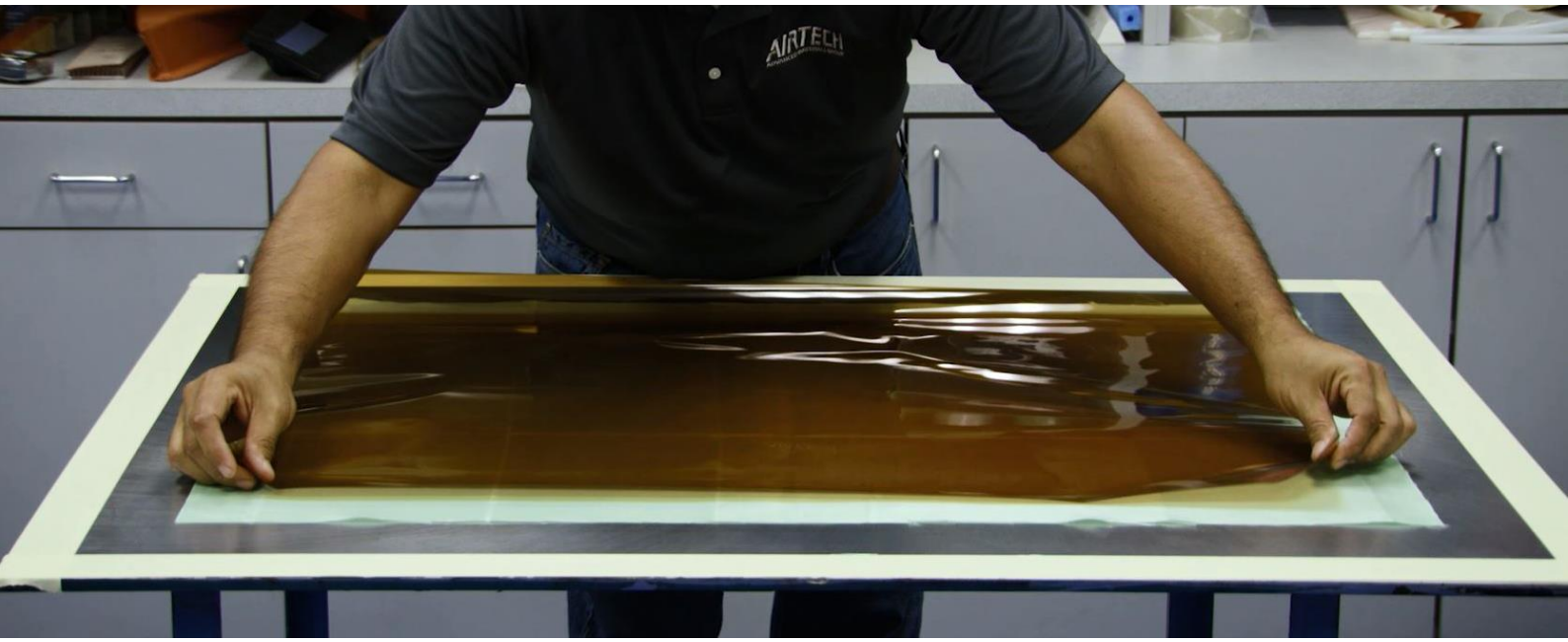
VB-3

Soft and High Elongation

Maximum Use Temperature	Elongation	Tensile Strength	Roll Sizes (Metric)	Roll Sizes (Inches)
315°C (600°F)	400%	13 MPa (2000 psi)		
Description			75µm x 1,27m SHT x 53m	0,003" x 50" SHT x 175ft

VB-3 vacuum bagging film is a high temperature, high elongation film which is suitable for cure temperatures up to 315 °C (600°F). It is recommended for high temperature cure cycles where a good softness and drapability are required.

Release films

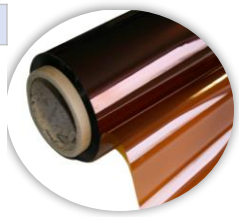


Thermalimide RCBS

Fast Cure / Press Cycle

Maximum Use Temperature	Elongation	Tensile Strength	Roll Sizes (Metric)	Roll Sizes (Inches)
405°C (761°F)	80%	240 Mpa (34,809 psi)	25µm x 1.52m x 78m	0.001" x 60" x 255ft
Description			50µm x 1.52m x 78m	0.002" x 60" x 255ft
			25µm x 2.00m x 78m	0.001" x 78.7" x 255ft
			50µm x 2.00m x 78m	0.002" x 78.7" x 255ft

Thermalimide RCBS is a high performance release film treated both sides for cure temperatures up to 405°C (761°F). Thermalimide RCBS is an ideal release film used during the forming process of thermoplastic materials and other high temperature applications.

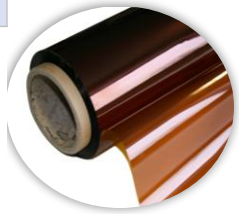


Thermalimide RCBS HR

Long Cure / Autoclave

Maximum Use Temperature	Elongation	Tensile Strength	Roll Sizes (Metric)	Roll Sizes (Inches)
405°C (761°F)	80%	240 Mpa (34,809 psi)		
Description			50 µm x 1.52m x 78m	0.002" x 60" x 255ft
			50 µm x 2.00m x 78m	0.002" x 78.7" x 255ft

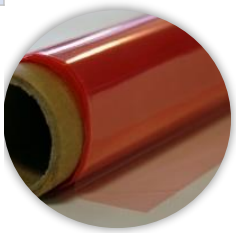
Thermalimide RCBS HR is an ultra high performance film treated both sides with enhanced release properties. Thermalimide RCBS HR is an ideal release film used during the forming process of thermoplastic materials and other high temperature applications up to 405°C (761°F).



Airtech MR1/MR2

Maximum Use Temperature	Elongation	Tensile Strength	Roll Sizes (Metric)	Roll Sizes (Inches)
315°C (600°F)	400%	31 Mpa (4,496 psi)		
Description			25µm x 1.22m x 152m	0.001" x 48" x 500ft
			50µm x 1.22m x 77m	0.002" x 48" x 252ft

MR release films can take temperature up to 315°C (600°F). These films have a high elongation and a good conformability. They work well with our high temperature sealant tapes. This film will provide a smooth surface after the cure. MR1 release film is offered in 25 µm (0,001 inch) thickness and MR2 release film is offered in 50 µm (0,002 inch) thickness. All standard perforations are available. Please see our perforation table in this section.



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Release fabrics & Peel ply

Bleeder Lease® C

Max. Use Temperature	Fibre Type	Weight	Colour	Roll Sizes (Metric)	Roll Sizes (Inches)
427°C (800°F)	Fibreglass	299 g/m² (8.8 oz/yd²)	Green		
Description				1.27m x 91m	50" x 100 yds

Bleeder Lease® C peel ply is a high temperature fabric coated with a silicone release agent. It provides superior release to plain peel plies because the coating prevents the fabric from bonding to the laminate while producing a textured surface. It will provide easy release from most prepregs and resin systems. All coated peel plies have the potential to transfer. It has been used up to 427°C cures and is ideal for use on thermoplastic high temperature lay-ups.

Bleeder Lease® E

Max. Use Temperature	Fibre Type	Weight	Colour	Roll Sizes (Metric)	Roll Sizes (Inches)
427°C (800°F)	Fibreglass	126 g/m² (3.7 oz/yd²)	Green		
Description				1.27m x 91m	50" x 100 yds

Bleeder Lease® E peel ply is a high temperature fabric coated with a silicone release agent. It provides superior release to plain peel plies because the coating prevents the fabric from bonding to the laminate while producing a textured surface. It will provide easy release from most prepregs and resin systems. All coated peel plies have the potential to transfer. It is a tightly woven fabric that has been used up to 427°C cures and is ideal for use on thermoplastic high temperature lay-ups.

Release Ease® 234 TFP

Max. Use Temperature	Fibre Type	Thickness	Colour	Roll Sizes (Metric)	Roll Sizes (Inches)
288°C (550°F)	PTFE coated fibreglass	0,060 mm (0.0024")	Brown		
Description				0.97m x 91m	38" x 100 yds
				1.52m x 91m	60" x 100 yds

Release Ease® PTFE coated fibreglass fabrics will provide release from all conventional resin systems. Porous products will allow excess resin, volatiles and trapped air to escape into the breather during cure. Release Ease® products have a continuous service temperature to 288°C.

Release Ease® 234 TFNP

Max. Use Temperature	Fibre Type	Thickness	Colour	Roll Sizes (Metric)	Roll Sizes (Inches)
288°C (550°F)	PTFE coated fibreglass	0,075 mm (0.003")	Brown		
Description				1m x 100m	40" x 110 yds

Release Ease® 234 TFNP is a non-porous glass fabric. Release Ease® PTFE coated fibreglass fabrics will provide release from all conventional resin systems. Non-porous products will retain resin. Release Ease® products have a continuous service temperature to 288°C.

*Note: Other sizes are available, please contact your customer service representative for complete details.

Breathers & Bleeders

Airweave® UHT 300PGL

Maximum Use Temperature	Fibre Type	Weight	Roll Sizes (Metric)	Roll Sizes (Inches)
427°C (800°F)	Fibreglass	300 g/m² (8.8 oz/yd²)		
Description			1m x 50m	39" x 55 yards

Airweave® UHT 300PGL is a premium non-woven blended fibreglass breather for ultra high temperature applications. It is safer to use this breather in place of a woven fibreglass breather. Airweave® UHT 300PGL makes an easier transition for the vacuum bag and in any radius. One layer provides good breathing to 427°C. Airweave® UHT 300PGL is designed for use with high temperature thermoset and thermoplastic resin systems.

Airweave® UHT 450PGL

Maximum Use Temperature	Fibre Type	Weight	Roll Sizes (Metric)	Roll Sizes (Inches)
427°C (800°F)	Fibreglass	450 g/m² (13 oz/yd²)		
Description			1m x 50m	39" x 55 yards

Airweave® UHT 450PGL is a premium non-woven blended fibreglass breather for ultra high temperature applications. It is safer to use this breather in place of a woven fibreglass breather. Airweave® UHT 450PGL makes an easier transition for the vacuum bag and in any radius. One layer provides good breathing to 427°C. Airweave® UHT 450PGL is designed for use with high temperature thermoset and thermoplastic resin systems.

Airweave® UHT 800

Maximum Use Temperature	Fibre Type	Weight	Roll Sizes (Metric)	Roll Sizes (Inches)
427°C (800°F)	Fibreglass	610 g/m² (18 oz/yd²)		
Description			1.17m x 45m	46" x 50 yard

Airweave® UHT 800 is a non-woven blended, fibreglass breather. It is safer to use this breather in place of a woven fibreglass breather. Airweave® UHT 800 makes an easier transition for the vacuum bag and in any radius. One layer provides good breathing to 427°C. Airweave® UHT 800 is designed for use with high temperature thermoset and thermoplastic resin systems.

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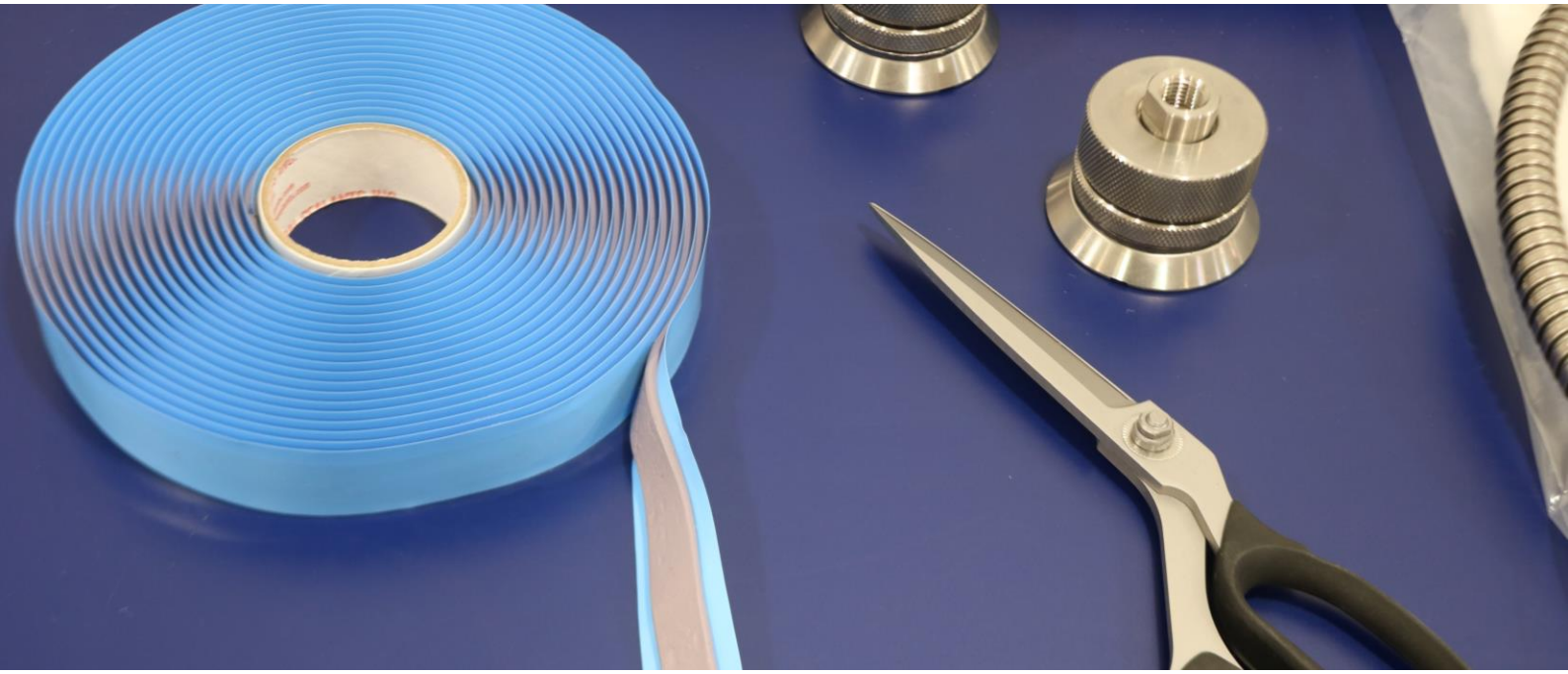
Pressure sensitive tapes

Airkap 1

Maximum Use Temperature	Carrier Type	Adhesive Type	Colour	Roll Sizes (Metric)	Roll Sizes (Inches)
399°C (750°F)	Polyimide	Silicone	Amber		
Description				25.4mm x 33m	1" x 36 yards
				50.8mm x 33m	2" x 36 yards

Airkap 1 is a high temperature pressure sensitive tape used for lay-ups up to 399°C. Airkap 1 has a fully cured silicone adhesive coating on a polyimide film and can be used to assist in holding down peel plies, breathers, vacuum bag pleats, thermocouples, etc. Airkap 1 will hold down the exposed edges of Thermalimide bagging film in order to insulate A-800-3G high temperature sealant tape.

Vacuum bag sealant tapes



A-800-3G

Maximum Use Temperature	Colour	Base Material	Roll Sizes
427°C (800°F)	Light green	Silicone	3mm x 12mm x 7.62m (1/8" x 1/2" x 25 ft)

Description

A-800-3G is a sealant tape suitable for very high temperature applications. With heat it gets tackier and works up to 427°C.

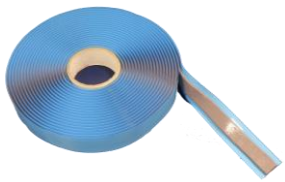
GS Xtreme HT

Best Tack Room Temp

Maximum Use Temperature	Colour	Base Material	Roll Sizes
427°C (800°F)	Purple/ Gray	Silicone	3mm x 12mm x 7.62m (1/8" x 1/2" x 25 ft)

Description

GS Xtreme HT is a state of the art ultra-high temperature vacuum bag sealant formulated and designed specifically for extreme temperature thermoplastic and thermoset processing. This sealant is structurally reinforced with heat stabilizing fillers, and has great adhesion to Airtech's high temperature Thermalimide film. GS Xtreme HT gets tackier when heated. GS Xtreme HT is ideal for autoclave cure cycles from 176°C to 427°C.



Fast Tack HT

Maximum Use Temperature	Colour	Base Material	Roll Sizes
427°C (800°F)	Sky blue	Silicone	3 mm x 12 mm x 7.62 m (1/8" x 1/2" x 25 ft)

Description

New generation sealant tape for high temperature applications. Fast Tack HT builds tack quickly when applied to Thermalimide. Having good room temperature adhesion to the high temp bagging film reduces the time required to vacuum bag high temperature parts.

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Vacuum Bagging & Composite Tooling Materials

Vacuum valves & Hoses

Vac Valve 409 SS HTR

Maximum Use Temperature	Material	Size
482°C (900°F)	Stainless steel	

Description

Vac Valve 409 SS HTR was designed for high temperature cures where valves with silicone rubber seals breakdown. The Vac Valve 409 SS HTR utilizes the bagging film along with mechanical pressure to create an air tight seal. The bagging film is clamped between the ridged base plate and the holding ring with contra shape. The screw down seal design provides extra vacuum seal safety.

Ø 63 mm Base Diameter
1/4" male NPT

AHTC-1000 QTD

Maximum Use Temperature	Material	Size
538°C (1000°F)	All metallic	

Description

The AHTC-1000 QTD Quick Turn Disconnect is designed for use up to 538°C. The ferrule expands to create a seal at elevated temperatures. There are no organic materials to break down under high temperature applications. The end fittings are female NPT style and work well with our Vac Valve 409 SS HTR, Airflow 800, and BBH 1080 autoclave hoses.

Threaded
1/2 or 1/4 inch female NPT

Vac Valve 429 SS HTR

Valve & Connector Integrated

Maximum Use Temperature	Material	Size
482°C (900°F)	Stainless steel & high performance graphite gasket	

Description

Vac Valve 429 SS HTR was designed for high temperature cures where standard valves with silicone rubber seals breakdown. Vac Valve 429 SS HTR is to be used for direct connection to vacuum hoses instead of a complex and expensive coupling system. Vac Valve 429 SS HTR is usable up to 482°C in combination with new high performance graphite seals. This valve can be directly screwed to our Airflow 800 or BBH1080 which provide a safe connection for high temperature processes, such as thermoplastics. Graphite seals and thread sealing products for high temperature use are easy to replace and can be ordered separately.

Ø 61 mm Base Diameter
1/4" female NPT threaded fitting

Airflow 800

Maximum Use Temperature	Material	Thread Size	Roll Sizes (Inches)
482°C (900°F)	Steel / steel sleeve	12.7 mm (1/2 inch)	

Description

Up to 8 m (25 feet)

Airflow 800 is a vacuum hose designed for extremely high temperatures up to 482°C, in continuous operation. The solid steel construction maintains superior durability yet remains flexible. We recommend for use with our AHTC 1000 QTD quick disconnects and our Vac Valve 409 SS HTR. Optional outer steel sleeve can be ordered to provide additional durability. This product is an outstanding alternative for lower temperature use where longer hose life is desired.

BBH 1080

Maximum Use Temperature	Material	Thread Size	Length
482°C (900°F)	Stainless steel	11.1 mm (7/16 inch)	

Description

Up to 22 m (75 feet)

BBH 1080 is a durable high temperature and high pressure autoclave hose. The hose construction consists of an inner flexible stainless steel conduit over-wrapped with a stainless steel braid. A stainless steel armour jacket covers the hose and protects it from the harsh autoclave and production environment. The unique design provides durability, flexibility, and reliability.

Accessories

Auto-Couple 24 PHT

Maximum Use Temperature	Thermocouple Type	Diameter	Length
426°C (800°F) Continuous	Iron / Constantan conductors / Polyimide insulation	1.27 mm (0.050")	0.9 - 30.5m (3 - 100 ft)

Description

Auto-Couple 24 PHT is a thermocouple assembly suitable for use up to 426°C. Auto-Couple 24 PHT uses wire that has been directly coated with an abrasion and peel resistant polyimide to provide superior insulation at the intended temperature. Auto-Couple 24 PHT thermocouples are supplied with a ceramic J connector. Auto-Couple 24 PHT is ideal for PEEK, PEKK, PAEK, and polyimide composite processing.

A2750

Maximum Use Temperature	Material	Roll Sizes (Inches)	Roll Sizes (Metric)
477°C (890°F)	Fibreglass	0.035" x 3" x 25 yds	0.09 mm x 76.2 mm x 22.9m

Description

A2750 is four plies of heavy duty fibreglass sewn together with fibreglass thread. This product provides an air channel and will not compact at pressures up to 14 bars and temperatures up to 477°C. A2750 has enough mass to absorb excess resin and allow venting during an extended cure cycle. Using an edge bleeder and breather will significantly reduce porosity in the laminate.

A22C

Maximum Use Temperature	Material	Size
Up to 482°C (900°F)	Fibreglass	Custom made to size.

Description

Airtech custom make the A22C reusable blankets to your specifications. These blankets are placed under the vacuum bag, made to conform to the part, and channel air and volatiles out the vacuum system. These blankets can be reused many times in oven or autoclave cures. The A22C blankets are made from fibreglass, they can channel air up to 482°C.

A21C

Maximum Use Temperature	Configuration	Size
427°C (800°F)	Bleeder Lease® C / Thermal Wool Fibreglass	Custom made to size.

Description

A21C insulation blankets are used over the vacuum bag when it is required to slow the rate of heat transfer from the bag side of the part. Heavy, metallic tools have slow temperature rise rates in the autoclave (or oven), which can mean through-thickness temperature gradients within the part which could result in part quality problems. A21C insulation blankets can help solve this problem. A21C: standard version is made using Bleeder Lease® C upper and lower covers with a thermal wool inner layer. The maximum use temperature for this version is 427°C.

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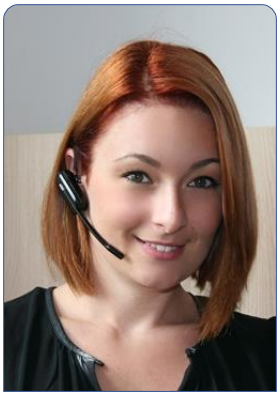
Airtech customer service

Global manufacturing & Local Inventories
Delivering Short Lead Times. AAMG: >98% OTD

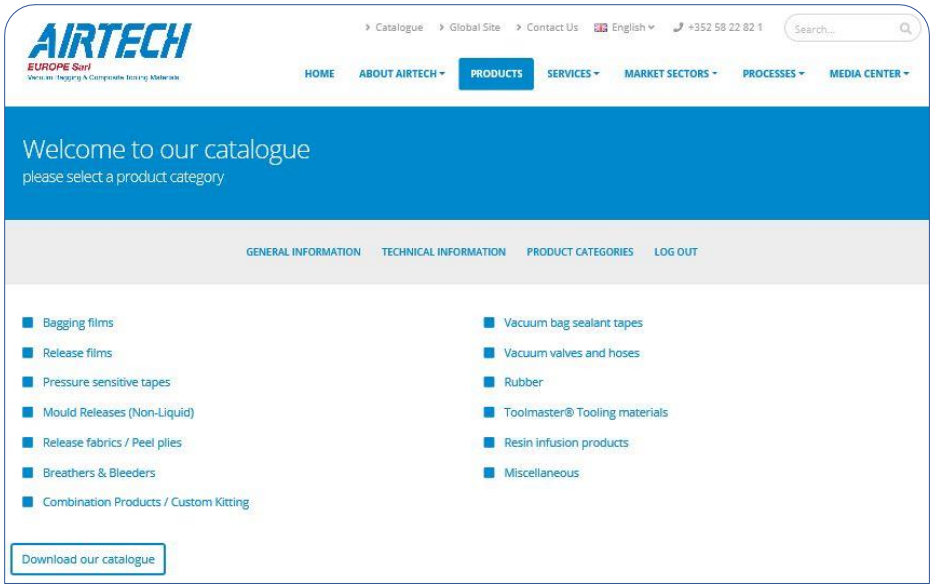


Customer Service
Team Contacts

Development, Innovation &
Continuous Improvement

Technical Support, Training Workshop & On-site Training Support

Quality System
Accreditation



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Ultra-High Temperature Vacuum Bagging Materials

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About Airtech

www.airtech.com
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- Airtech Advanced Materials Group is the largest manufacturer of vacuum bagging and composite tooling materials for prepreg / autoclave, resin infusion, and wet lay-up processes up to 426°C. Our product line consists of: vacuum bagging films , release films, pressure sensitive tapes, mould releases (non-liquid), peel plies, breathers & bleeders, sealant tapes, vacuum bag connectors & hoses, rubber, pressure pads, cutting tools, vacuum leak detectors, shrink tape, PTFE coated fibreglass, tooling prepregs and resins, and carbon and glass reinforcements.
- With 50 years of extrusion experience, we've taken the next step into additive manufacturing. Print-Tech® is our new large scale additive manufacturing or 3D printing tooling service for composites. Large scale tooling in the form of trim fixtures, holding fixtures, and layup moulds can be designed, tooled, and built faster without compromise quality. Also, we manufacture a full line of Dahltram® tooling and Dahlpram® purging resins.
- Airtech Advanced Materials Group is family owned. We have six locations strategically placed worldwide: Huntington Beach, California, USA; Chino, California, USA; Springfield, Tennessee, USA; Differdange, Luxembourg; Chadderton, UK; and Tianjin, China. All of our facilities offer technical assistance and are ready to meet your composite production challenges.
- Airtech is an ISO 9001:2015 / AS9100 Rev. D registered company.

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