

DuPont™ Pyralux® TAS & TAHS

All-Polyimide Single-Sided Copper-Clad Laminate

Flexible Circuit Materials

Product Description

DuPont™ Pyralux® TAS and TAHS are Single-sided Copper-clad Laminates featuring adhesive-less, all-polyimide dielectric layer. These materials exhibit excellent low loss performance, enabling remarkable signal integrity in high-speed digital and high-frequency circuit applications. Offered in a variety of both dielectric and conductor thickness, DuPont™ Pyralux® TAS and TAHS provide designers, fabricators, and assemblers a versatile option for wide variety of flexible circuit constructions.

Key Features and Benefits

- Low loss dielectric and ED Cu foil (TA) or RA Cu foil (TAH) conductor layers
- Excellent thermal resistance from all-polyimide dielectric
- Minimal variance in dielectric thickness for consistent performance
- High flex and bending reliability due to excellent adhesion between dielectric and copper foil
- UL 94V-0, UL File E161336
- RoHS Compliant

Packaging

DuPont™ Pyralux® TAS and TAHS Single-side Clads are supplied as 100 linear meter (328 ft) rolls in widths of either 250 mm (9.8 in) or 500 mm (19.7 in).

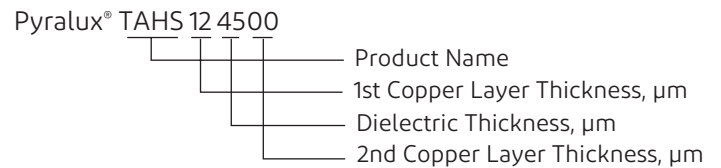
Storage and Warranty

DuPont™ Pyralux® TAS and TAHS Single-side Clads should be stored in original packaging at temperatures of 4 - 29 °C (40 - 85 °F) and below 70% relative humidity. The product should not be frozen and should be kept dry, clean, and well-protected. Subject to compliance with the foregoing handling and storage recommendations, DuPont's warranties shall remain in effect for the period provided in the DuPont Standard Conditions of Sale.

Table 1 - Standard Pyralux® TAS & TAHS Clad Offerings

Product Code	Copper Thickness µm (oz/ft²) & Type	Dielectric Thickness µm (mil)
TAS122500	12 (0.33) ED	25 (1.0)
TAHS121200	12 (0.33) RA	12 (0.5)
TAHS122500	12 (0.33) RA	25 (1.0)
TAHS124500	12 (0.33) RA	45 (1.8)

Product Code Key



Processing

DuPont™ Pyralux® TAS and TAHS Single-side Clads are fully compatible with all conventional flexible circuit fabrication processes, including oxide treatment and wet chemical plated-through-hole de-smearing. Fabricated circuits can be cover coated and laminated together to form multilayers or bonded to heat sinks using polyimide, acrylic, or epoxy adhesives. Pyralux® TAS & TAHS processing guide available from your DuPont sales representative

Safe Handling

Prior to handling, DuPont recommends referencing the Pyralux® Safe Handling Guide available at pyralux.dupont.com.

Quality and Traceability

DuPont™ Pyralux® TAS and TAHS Single-side Clads are manufactured under a certified ISO9001:2015 Quality Management System facility. Complete material and manufacturing records, which include archive samples of finished product, are maintained by DuPont. Each manufactured lot is identified for reference traceability. The packaging label serves as the primary tracking mechanism in the event of customer inquiry and includes the product name, batch number, size, and quantity.

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Product Performance

Table 2 - DuPont™ Pyralux® TAS & TAHS Single-sided Copper-clad Laminate Properties

Property	TAS121500 Typical Value	TAHS124500B Typical Value	Test Method
Dielectric Constant (Dk)			
1 MHz	3.7	3.7	IPC-TM-650 2.5.5.3
10 GHz	3.4	3.4	ASTM D2520
Loss Tangent (Df)			
1 MHz	0.003	0.003	IPC-TM-650 2.5.5.3
10 GHz	0.0045	0.0045	ASTM D2520
Peel Strength (Adhesion to Copper)			
As Received, N/mm (lb/in)	> 0.6 (> 3.5)	> 0.8 (> 4.6)	IPC-TM-650 2.4.9
After Solder, N/mm (lb/in)	> 0.6 (> 3.5)	> 0.8 (> 4.6)	
Dimensional Stability (MD/TD)			
After Etching, %	± 0.05 %	± 0.1 %	
After Thermal (200 °C for 30 min), %	± 0.1 %	± 0.1 %	IPC-TM-650 2.2.4
Coefficient of Thermal Expansion			
XY-Axis, ppm/°C	24	24	IPC-TM-650 2.4.41
Solder Float, 288 °C for 10 s	Pass	Pass	IPC-TM-650 2.4.13
Moisture Absorption, %	0.9	0.9	IPC-TM-650 2.6.2
Volume Resistivity, Ω · cm	TBD	> 10 ¹⁶	IPC-TM-650 2.5.17
Surface Resistance, Ω	TBD	> 10 ¹⁵	IPC-TM-650 2.5.17
Tensile Modulus, GPa	TBD	> 6.5	IPC-TM-650 2.4.19
Tensile Strength, MPa	TBD	> 240	IPC-TM-650 2.4.19
Elongation, %	TBD	35	IPC-TM-650 2.4.19
Flexural Endurance, cycles	> 200	> 60	JIS C6471 (MIT)
Glass Transition Temperature (Tg), °C	280	280	DuPont Method, TMA
Chemical Resistance			
Tensile Strength Retention, %	> 80%	> 80%	DuPont Method,
Elongation Retention, %	> 80%	> 80%	NaOH & HCl Dip for
Peel Strength Retention, %	> 90%	> 90%	10 min separately

Data within this table are typical values for the listed product. Performance can vary depending on construction and processing.



For more information on Pyralux® TAS & TAHS Single-side Clads or other DuPont products, please visit our website.

pyralux.dupont.com

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CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102-5 and "DuPont Policy Regarding Medical Applications" H-50103-5.

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