

Flexcon® ThermFilm® HT™

High-Temperature Labeling for Extreme Environments

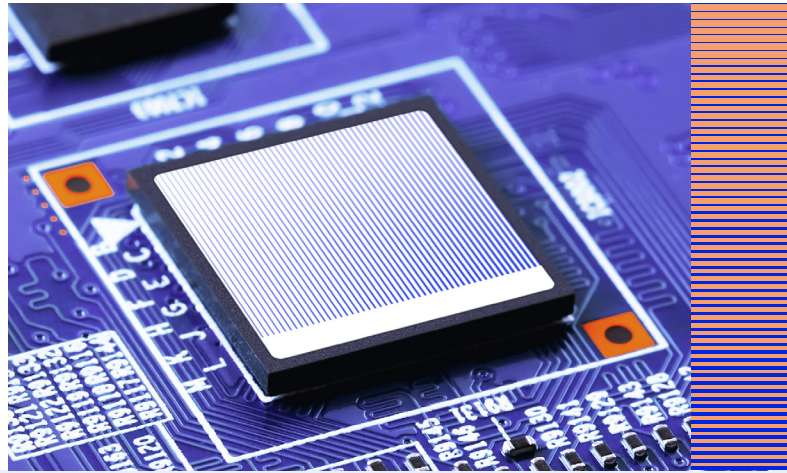
When durability and heat resistance are critical, Flexcon's ThermFilm® HT™ series delivers unmatched performance across demanding industries. These high-performance label materials are designed to withstand temperatures up to 750°F (399°C), resist chemical exposure, and endure abrasion, ensuring reliable product identification throughout the manufacturing process and beyond.

ThermFilm® HT™ PI1W50GV2

1 mil (25 micron) high temperature white polyimide film, topcoated for extensive printability

ThermFilm® HT™ PI2W50GV2

2 mil (50 micron) high temperature white polyimide film, topcoated for extensive printability



Key Benefits at a Glance

- Withstands intermittent heat up to 750°F (399°C) for high-heat applications
- 600 DPI resolution for sharp barcodes, data matrix codes, and alphanumeric tracking
- ANSI scannability compliance ensures reliable long-term traceability
- Topcoat has static dissipating properties
- Chemical, solvent, and abrasion resistance (OHR1 Compliant) for harsh industrial conditions
- Low-outgassing adhesive for sensitive applications
- UL 969 recognized, REACH & RoHS compliant, and halogen-free
- Available in 1 mil (25 micron) and 2 mil (50 micron) polyimide constructions with standard 50 lb. glassine liner in master rolls or in custom slit width

Industry Applications

ThermFilm® HT™ is ideal for high-temperature labeling in:

- Printed Circuit Boards (PCB) - Withstands leaded and non-leaded reflow soldering, harsh cleaning chemicals, and flux exposure while maintaining barcode clarity.
- Automotive (Under-the-hood & Electronics) - Resists extreme temperatures, oil, and engine chemicals, ensuring long-lasting component identification.
- Aerospace & Defense - Maintains durability under extreme conditions, ideal for wiring, avionics, and high-heat applications.
- Medical Devices & Sterilization Tracking - Designed for autoclave and high-heat sterilization cycles, ensuring permanent traceability.
- Oil & Gas, Renewable Energy - Survives harsh chemicals, high temperatures, and rugged outdoor exposure.

Tested & Approved for:

- Leaded and lead-free reflow soldering (top & bottom)
- Wave soldering and chemical washes (up to 7 cycles)
- Thermal transfer printing with a wide range of UL-recognized ribbons

Special Considerations

- Ensure clean, dry surfaces before label application. IPA (isopropyl alcohol) is recommended for cleaning.
- Expose printed labels to 302°F (150°C) before performance testing for best results.
- Actual application testing is recommended to confirm suitability for specific environmental conditions.



For samples, technical support, or ordering information, call 1 (508) 885-8200 (NA), +44 1592 663 200 (EU), or visit flexcon.com/spotlights/thermfilmht

Flexcon® ThermiFilm® HT™

High-Temperature Labeling for Extreme Environments

Product Construction Sheet

Flexcon® ThermiFilm® HT™ PI1W50GV2 & PI2W50GV2

Product Data	Value	1.0	2.0	Test Method
Physical Properties		Mils (Microns)	Mils (Microns)	
Thickness	Film + Coating (+/- 15%)	1.7 (43)	2.7 (69)	ASTM D 3652 (Modified for use with non-tape products)
	Adhesive (+/- 0.1 (3))	1.4-1.5 (36-38)	1.4-1.5 (36-38)	
	Liner 50 lb. Glassine (+/- 10%)	2.7 (69)	2.7 (69)	
Adhesion Properties		Average oz/in (N/m)	Average oz/in (N/m)	
Surface	Stainless Steel	42 (462)	51 (561)	ASTM D 903
	Acrylic	40 (440)	60 (660)	
	Glass	46 (506)	49 (539)	
	FR4 Board	50 (550)	51 (561)	
	Expected Shear (hours)	75+	75+	ASTM D 3654 Method A a. 1 hr. dwell b. 1 sq. in. surface c. 4 lb. load
	Tack (gm)	1240	1390	
Durability		ANSI Scannability	ANSI Scannability	
Leaded Reflow	Up to 7 washes	100%	100%	*Testing conducted at ITWEAE - Electronic Assembly Equipment using Kester 977, and Alpha 3355-11 ORH1
Non-leaded Reflow	Up to 7 washes	100%	100%	
No Reflow	Up to 7 washes	100%	100%	
Service Temperature Range		-40°F to 356°F (-40°C to 180°C) Five Minutes - Up to 500°F (260°C) Intermittent - Up to 750°F (399°C)		Flexcon M-29 applied to panel
Recommended Ribbons		PI1 Direct Exposure: Iimak: SP-575 PI2 Direct Exposure: Armor: AXR 8, Coding Products: 7993, Dai Nippon: R510 HF ITW Thermal Films: B814, Iimak: SP-575, Ricoh: B110CR Zebra Technologies Corp: 5100		
Storage Stability:		Two years when stored at 70°F (21°C) and 50% relative humidity		
Minimum Application Temperature:		Room temperature (65°F/18°C) is recommended		
UL Approved:		Under UL 969 - UL File No. PGJ12.MH16635 Printing Materials - Component		
Compliance and Content:				
RoHS - Restriction of Hazardous Substances (EU Directives 2002/95/EC and 2003/11/EC):		None of the substances named in these directives are knowingly used or intentionally added during the manufacturing process		
REACH - Registration, Evaluation and Authorization of Chemicals		None of the substances currently on the Candidate List are knowingly used or intentionally added during the manufacturing process		
SVHC - Substances of Very High Concern (EU Directive 1907/2006/EC):				
Halogen Free IEC 61249-2-21:		Halogens are not knowingly used or intentionally added during the manufacturing process		
IMDS Data Available on Request				

*Reflow testing on Centurion 1040N, Wave Solder Testing on Electra – EC4, Wash Testing Aquastorm AS200 (Kyzen Aquanox A4626 Aqueous Cleaning solution)

Product Performance and Suitability

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