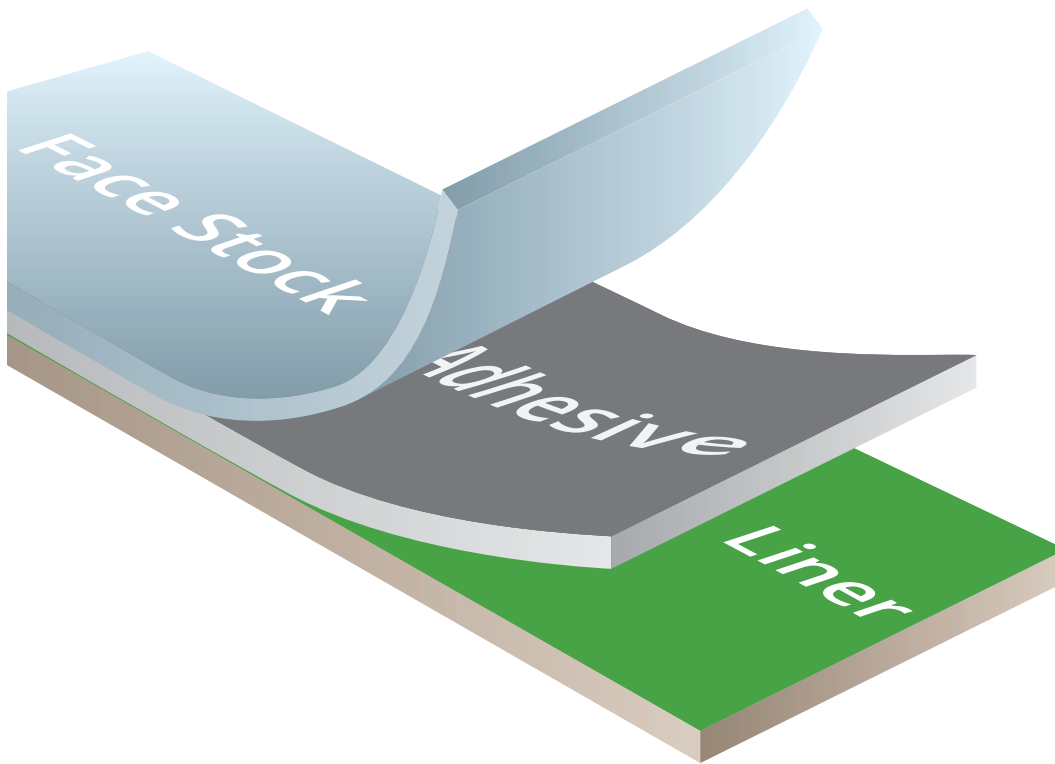


# TT433



## Labels for Life.



**Face Stock:** 2.3 mil gloss white polyimide with ultra durable chemical and high temperature resistance. The material is specifically designed to withstand multiple harsh chemical wash cycles in printed circuit board (PCB) manufacturing and also perform without preliminary heat treatment.

**Adhesive:** 2.0 mil ultra aggressive permanent acrylic adhesive offering excellent resistance to harsh chemicals and high temperatures.

**Release Liner:** 55# glassine liner or a 1.5 mil polyester liner designed to offer excellent performance for both manual and automatic application.

## Ultra Durable Chemical Resistant Gloss White Polyimide Film

TT433 is designed for on demand thermal transfer printing of variable information. **Key features include:** indoor and outdoor applications and excellent smudge, solvent, heat and abrasion resistance. When used in combination with the recommended Identco ribbon, it will meet the most demanding durable labeling requirements. The TT433/TTRR-CR material/ribbon combination is the only product available that has been successfully tested to withstand KYZEN and ZESTRON's cleaning agents and products.

## Typical Applications

Chemical and thermal resistant labels for printed circuit board processes without preliminary heat treatment of the PCB

## Typical Industry Sectors

Aerospace  
Mdeical  
Military




[www.identco.com](http://www.identco.com)


# TT433

Ultra Durable Chemical Resistant Gloss White Polyimide Film




Labels for Life.


 **Agency Recognitions**  
UL-MH16873


 **Adhesion**

Stainless Steel	20 minute dwell	35 oz/in (38 N/100mm)	Epoxy PC Board	20 minute dwell	40 oz/in (44 N/100mm)
	24 hours dwell	40 oz/in (44 N/100mm)		24 hours dwell	43 oz/in (48 N/100mm)


 **Material Caliper**


Face Stock	.0023"	58.4μ	Liner (glassine/Polyester)	.0031"/.0015"	78.7/38.1μ
Adhesive	.0020"	50.8μ	<b>Total Material</b>	<b>.0074"/.0058"</b>	<b>187.9/147.3μ</b>

 **Exterior Durability**  
Recommended: Indoor use only

 **Temperature Range**

Service Temperature: -40°F to 302°F (-40°C to 150°C)      Minimum Application Temperature: 50°F (10°C)

 **Shelf Life**  
Recommended Storage: 45-90°F (7-32°C) 20-75% R.H.  
Shelf Life: 2 years @ recommended storage

 **Recommended Ribbons**  
TTRR-CR Ultra Chemical resistant resin ribbon  
TTRR-B resin ribbon  
TTRR-D resin ribbon

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## Product Details

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 Substrate (Topcoat & Film) Adhesive Liner (Glassine) Total	0.0023" (0.0584 mm) 0.0020" (0.051 mm) 0.0031/0.0015" (0.079/0.038 mm) 0.0074/0.0058" (0.188/0.147 mm)
Adhesion to:  Stainless Steel  Expoy PC Board	ASTM D 1000  20 minute dwell 24 hours dwell  20 minute dwell 24 hours dwell	  35 oz/in (38 N/100mm) 40 oz/in (44 N/100mm)  40 oz/in (44 N/100mm) 43 oz/in (48 N/100mm)
Tack	ASTM 2979  Polyken Probe Tack 0.5 second dwell	  12 oz (330 g)
Drop Shear	PSTC-7 (1/2" x 1" sample)	>100 hours
Dielectric Strength	ASTM D1000	10,000 volts

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## Performance Properties

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Short Term High Service Temperature	80 seconds at 572F (300C)	No visible effect
	5 minutes at 500F (260C)	No visible effect
	2 hours at 338F (170C)	No visible effect
Long Term High Service Temperature	1000 hours at 212F (100C)	No visible effect
Low Service Temperature	1000 hours at -94F (-70C)"	No visible effect
Humidity Resistance	1000 hours at 98F (37C), 95% R.H.	No visible effect
UV Light Resistance"	30 days in UV Sunlighter 100	Topcoat turns yellow, label remains functional
Weatherability	1000 hours in Xenon Arc Weatherometer	Slight discoloration
Salt Fog Resistance	ASTM B 117 30 days in 5% salt fog solution chamber	No visible effect
Abrasion Resistance	Taber Abraser, CS-10 grinding wheels, 500 g/arm (Fed. Std. 191A, Method 5306	Print legible after 100 cycles
Chemical Vapor Phase Resistance	Labels adhered to epoxy PC board and exposed to the vapor of the boiling chemical for 10 minutes and then rubbed with a cotton swab saturated with the chemical for 10 rubs.  Testing samples were baked 4 minutes at 160C prior to testing  Ionox 3955 Micronox MX2501"	Severe print removal Complete print removal

Performance properties tested on TT433 printed with IDENTCO Series TTRR-D thermal transfer ribbon. Printed samples of TT433 were laminated to aluminum and allowed to dwell 24 hours before exposure to the indicated environmental conditions.

\* TT433 is not recommended for outdoor use.

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## Performance Properties

PERFORMANCE PROPERTIES		CHEMICAL RESISTANCE			
CHEMICAL REAGENT		SUBJECTIVE OBSERVATION OF VISIBLE CHANGE			
	EFFECT TO LABEL	RIBBON PERFORMANCE: TTRR-B, TTRR-CR, TTRR-D			
		WITHOUT RUB	WITH RUB		
			TTRR-B	TTRR-CR	TTRR-D
Kyzen Corp. 15% Aquanox® A4625 at 140F (60C)	No visible effect	1	4	3	1
Kyzen Corp. 17% Aquanox® A4520 at 140F (60C)	No visible effect	1	5	1	1
Kyzen Corp. 10% Aquanox® A4638 at 150F (65C)	No visible effect	1	1	1	1
Kyzen Corp. 20% Aquanox® A4703 at 145F (63C)	No visible effect	1	5	3	1
Zestron, 15% Atron® AC205 at 150F (65)	No visible effect	1	5	1	3
Zestron, 15% Atron® AC207 at 150F (65)	No visible effect	1	5	4	3
Zestron, 15% Vigon® A201 at 150F (65)	No visible effect	1	5	3	3
Zestron, 15% Vigon® N600 at 150F (65)	No visible effect	1	5	3	1
Isopropyl Alcohol 99% at 180F (82C)	No visible effect	1	1	1	1
Deionized Water AT 212F (100C)	No visible effect	1	1	1	1

Samples printed with TTRR-B, TTRR-CR, & TTRR-D thermal transfer ribbons. Samples laminated to epoxy PC board. Test samples exposed to indicated environments. Test samples baked 4 minutes at 160°C before testing. All test samples were immersed in the test fluids for 10 minutes. Samples were rubbed 10 times with cotton swab saturated with the test fluid.

### Rating Scale:

- 1=no visible effect
- 2=slight smear or print removal, detectable but minimal smear
- 3=moderate smear or print removal (print still legible)
- 4=severe smear or print removal (print illegible or just barely legible)
- 5=complete print removal

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## Performance Properties

PERFORMANCE PROPERTIES	CHEMICAL RESISTANCE
Solvent Resistance TEST FLUID	MIL-STD202G, Method 215K RESULTS TTRR-D
Solvent A 1 part IPA, 3 parts mineral spirits	Meets Requirement
Solvent B Terpene Defluxer	Meets Requirement
Solvent C Saponifier @ 70C	Meets Requirement

Test samples were printed with TTRR-D thermal transfer ribbon. Labels were printed with alphanumerics and barcodes. Test samples were subjected to 3 cycles of 3 minute immersions immediately followed by a toothbrush rub after each immersion.

Product testing, customer feedback and history of similar products support a customer performance expectation of at least two years from the date of receipt for this product as long as this product is stored in its original packaging in an environment between 45-90°F (7-32°C) and 20-75% RH. We are confident that our product will perform well beyond this time frame however it remains the responsibility of the user to assess the risk of using such product. We encourage customers to develop functional testing protocols that will qualify a product's fitness for use in their actual applications.

### Trademarks:

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ASTM: American Society for Testing and Materials (U.S.A.)  
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