



# High Temperature Resistant Labelstock 3921

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## Product Data Sheet

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Updated : April 2004  
Supersedes : September 2000

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### Description :

High temperature resistant labelstock 3921 is recommended for thermal transfer imaged labelstock applications where a high durability and superb resistance against highest application temperature is required.

The acrylic based film is resistant to outdoor weathering, UV-light and many solvents as well as being dimensionally stable.

The matte white facestock provides a very good contrast which leads to a high first readability rate; even of high density BARCODES.

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### Physical Properties

Not for specification purposes  
(Calipers are nominal values)

<b>Film</b>	White matte cast acrylic film (caliper 0.05mm) 50 microns
<b>Adhesive</b>	33 µm # 150 Crosslinked acrylate adhesive
<b>Liner</b>	Single sided siliconised, densified kraft paper (caliper 0.08mm, weight 94g/m <sup>2</sup> ) 80 microns
<b>Shelf Life</b>	24 months from date of manufacture by 3M when properly stored at 22°C & 50 % Relative Humidity

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### Physical Properties

Not for specification purposes

<b>Minimum Application Temperature</b>	+ 15°C
<b>Elongation</b>	5% - 15%
<b>Tensile Strength</b>	> 30N/25mm (Test conditions : DIN50014 on tensile tester according to DIN51221/DIN51220; 300mm/min, 100mm Film length)
<b>Dimensional Stability (DIN30646)</b>	< 0.2 %
<b>Temperature Resistance</b>	High temperature resistance *300°C (60 sec) No change *200°C (60 min) No change *80°C (14 days) No change
	A slight yellow tinge may occur after times listed. The temperatures have no impact on the form stability of the film.
	Low Temperature Resistance *40°C (7 days) No change
<b>Weather Resistance</b>	Accelerated weathering in Xenon tester (in accordance with DIN 30646) 2000 hours : No Change

**Adhesion**

(DIN 30646, FINAT FTM 1) 48 hrs dwell time, 300mm/min. Pullback 180° Angle.	Substrate	N/10mm
	Aluminium	7.8
	ABS	9.8
	Polycarbonate	5.9
	Polyester	5.9
	PVC (hard)	4.7
	PP	1.9
PE	1.9	
The adhesion on Printed Circuit Boards is depending on the used lacquer system. (Test conditions in accordance with DIN30646, 48 hours dwell time, 300mm / min Pull Back, 180° angle).		

**Chemical & Solvent Resistance**

Film applied onto PCB panels 1 hour prior to immersion and evaluated directly after the test. Duration of immersion, 10 minutes at room temperature.	
Xylo	No change
n-Heptane	No change
Ethanol	No change
Isopropanol	No change
Water	No change
Sulphuric Acid (30%)	No change
Caustic Soda (10%)	No change
Trichloroethane 1,1,1	No change
Toluene (5 minutes)	No change
* The film is not resistant to harsh fluorine-chlorine.	

**Abrasion Resistance**

Grinding wheel:	CS10
Load :	500g
1000 cycles	no surface damage

**Processing**

<p><b>Printing:</b>          High temperature resistant labelstock 3921 is recommended for screenprinting processes using appropriate inks from suppliers like Wiederhold, Marabu etc. Both UV and solvent based inks are suitable. Sheet screenprinting must be evaluated depending on size and actual conditions. Flexographic, letterpress and offset printing methods can be considered but should be evaluated on a case to case basis.</p> <p><b>Cutting:</b>          High temperature resistant smooth, hard, caliper controlled liner with very good kiss cutting characteristics. Weed stripping is recommended using a 25 mm idler. For better handling we recommend label formats with "rounded" corners.</p> <p><b>Application:</b>          All surfaces must be clean and dry and at ambient temperature of over 10°C. High temperature resistant labelstock 3921 has been developed for application to smooth and slightly rough surfaces, including several low-surfaces energy plastics and small diameter applications. Individual substrates should be evaluated for suitability. UL Recognised (File No. MH16411) and CSA Accepted (File No. 99316).</p> <p><b>Storage:</b>          Unprocessed films: at least two years and Processed labels: one year.</p> <p>Films and labels must be stored in a clean area free of excessive moisture and direct sunlight of room temperature. Processed labels should be stored in Polyethylene bags, 0.1 mm thickness, to protect against moisture fluctuations.</p>
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**Processing Contd...**

**Thermal Transfer:**

High temperature labelstock 3921 offers an ideal surface for Thermal **Imageability**.

**Transfer Printing.**

This technology provides excellent covering power combined with the capability of uniform surface coverage. It also allows the individual printing of high density BARCODES beyond standard labelling applications.

The quality of the printing is dependent on the printer/ribbon combination. Good results have been obtained through the following units.

**Parameters:**

New printer/ribbon combinations should be evaluated beginning with lowest printing speed and highest burn temperature. Printing speed and burn temperature can be then successively increased/reduced.

**U.L.:** Recognised as Printing Materials component - U.L. 969 under File No. MH16411 (N)

**C.S.A.** Accepted as Class 7922 Printing material under 3M File No. 99316 -indoor and outdoor use.

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Values presented have been determined by standard test methods and are average values not to be used for specification purposes. Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications. This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.



**Tapes & Adhesives Group**

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