



# Scotchcal™

## Label Film 3690-906E

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### Product Data Sheet

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Updated : April 2004  
Supersedes : June 2000

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**Description :**

Label Film 3690-906E is recommended for Thermal Transfer Printed Label Stock applications where a very high durability and performance is required combined with non-transferability on some surfaces and excellent covering power.

Label Film 3690-906E is resistant to outdoor weathering, UV-light and many solvents as well as being dimensionally stable.

The specially modified acrylic adhesive shows high initial tack and good adhesion to nearly all surfaces including most low surface energy substrates such as Polyethylene, and textured paint, as well as curved surfaces.

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**Physical Properties**

Not for specification purposes  
(Calipers are nominal values)

<b>Facestock</b>	50 micron Cast PVC with smooth silver-grey gloss surface
<b>Adhesive</b>	30 micron Transparent pressure sensitive modified acrylic adhesive
<b>Liner</b>	75 micron 90g/m <sup>2</sup> Densified Paper
<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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**Effective Performance Life :**

When applied in accordance with 3M recommended procedures similar films have been found to offer the following performance life in applications to vertical surfaces.

	<b>Outdoors</b>	<b>Indoors</b>
Unprinted Film	Minimum 5 years	Unlimited
Printed with 3M 66001 Inks	Minimum 5 years	Unlimited

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**Physical Properties**  
Not for specification purposes

<b>Minimum Application Temperature</b>	+ 4°C
<b>Tensile Elongation</b>	> 10 %
<b>Tensile Strength</b>	> 10N/25mm (Test conditions : DIN50014 on tensile tester according to DIN51221/DIN51220; 300mm/min, 100mm Film length)
<b>Dimensional Stability (DIN30646)</b>	< 0.2 %
<b>Shelf Life</b>	24 months (processed labels can be stored for one additional year)

**Environmental Performance**  
Not for specification purposes

<b>Weather Resistance</b>	Accelerated weathering in Zenon Tester 1,000 hr : No Change To Film
<b>Temperature Resistance</b>	Permanent = -60°C to +95°C Short Term = -60°C to +150°C
<b>Chemical Resistance</b>	240 hr Salt Spray 20% 35°C      No Change to Film Humidity: 38°C, 95% RH,      No Change to Film 200 hours Water : 32°C, 150 hours      No Change to Film Diesel Fuel, 8 hours      No Change to Film

**Processing**

Printing:

Label Film 3690-906E is recommended for roll to roll screen printing using appropriate inks for vinyl films (e.g. Marastar SR, Wiederhold J etc, etc.). Both UV and solvent based inks are suitable, Sheet screen printing 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.

Cutting:

Label Film 3690-906E features a smooth, hard, caliper controlled liner with very good kiss cutting characteristics. Weed stripping is recommended using a 25mm diameter idler.

Adhesion:	<u>Substrate:</u>	<u>N/25mm</u>
	Aluminium	26
	Stainless Steel	28
	Chrome	22
	Acrylic Paint	22
	ABS Plastic	22
	Polypropylene	16

(DIN 30646, FINAT FTM 1) 48 hrs dwell time, 300mm/min. Pullback 180° Angle.

Application:

All surfaces must be clean and dry at an ambient temperature of over 4C.

Label Film 3690-906E has been developed for application to smooth and slightly rough surfaces, including most low-surface energy plastics and small diameter applications. Individual substrates should be evaluated for suitability.

UL Recognition and CSA Acceptance testing have been successfully completed. (UL file MH 17496 (N) and CSA file 99316)

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## Processing Contd...

### Storage:

Unprocessed films can be stored for at least two years and processed labels can be stored for an additional one year.

Films and Labels must be stored in a clean area free of excessive moisture and direct sunlight or room temperature. Processed labels should be stored in Polyethylene bags, 0.1mm thickness, to protect against moisture fluctuations.

### Thermal Transfer Imprinting :

Label Film 3690-906E offers an ideal surface for Thermal 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 using Label Film 3690-906E.

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

#### Printers

Zebra Z90,Z91,Z130,Z140  
Zebra 5099; 5175, Ricoh B110C, Sony 4070,  
Armor AXR-7, ICS CC-2000; ICS CC-4099-1  
Fargo Prodigy, Prodigy Plus  
Sato 8400, 8450  
TEC B602, B402, B65, B30  
Intermec 8646

#### Ribbons

Zebra 5099; 5175, Ricoh B110C, Sony 4070,  
Armor AXR-7, ICS CC-2000; ICS CC-4099-1  
Ricoh B110C, Sony 4070, Armor AXR-7  
Ricoh B110C, Sony 4070, Armor AXR-7  
Ricoh B110C, Sony 4070, Armor AXR-7  
Intermec 053258-2

This listing does not claim to be complete or represent any order of merit. Other combinations can be considered but should be evaluated on a case to case basis.

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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

3M United Kingdom PLC  
3M Centre,  
cain Road,  
Bracknell, Berkshire,  
RG12 8HT

Product Information :  
Tel 0870 60 800 50  
Fax 0870 60 700 99

3M Ireland  
3M House, Adelphi Centre,  
Upper Georges Street,  
Dun Laoghaire, Co. Dublin,  
Ireland

Customer Service :  
Tel (01) 280 3555  
Fax (01) 280 3509

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