



Scotchcal™ Graphic Film

Series IJ70; Series SP70

Product Bulletin

Product Description These cast films offer great versatility making them perfect for indoor and outdoor signs and fleet graphics.

Product Line	Inkjet printing	IJ70-10 IJ70-114	white, opaque, glossy, permanent adhesive. transparent, glossy, permanent adhesive.
	Screen printing	SP70-10 SP70-114	white, opaque, glossy, permanent adhesive. transparent, glossy, permanent adhesive.

Product Characteristics These are typical values for unprocessed products.
Contact your 3M representative for a custom specification.

Physical & Application	Material	cast vinyl		
	Surface finish	glossy		
	Thickness (film)	50 µm (0.05 mm)		
	Adhesive type	solvent acrylic; pressure-sensitive		
	Adhesive appearance	grey, except for transparent versions		
	Liner	double-sided Polyethylene coated paper		
	Adhesion	approx. 20 N/25 mm	FTM 1: 180° peel, substrate: glass; cond: 24 h 23°C/50%RH	
	Application method	wet or dry		
	Applied shrinkage	< 0.1 mm	FTM 14	
	Application temperature	+10°C	minimum (air and substrate)	
Service temperature	-60°C to +107°C			
Surface type	flat to curved, incl. rivets			
Substrate type	aluminum, glass, PMMA, PC*, ABS, paint			

PC*, PETG*: Might require drying with heat before use

Graphic removal Fair to remove with heat and/or chemicals from supported substrates.

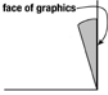
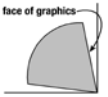
No liability is given for ease or speed of removal of any graphic. Pay attention to adequate air and substrate temperature.

Storage Shelf life Use within 2 years from the date of manufacture on the sealed original box.
Use within 1 year after opening the box.

Storage conditions +4°C to +40°C, out of sunlight, original container in clean and dry area.

Flammability Flammability standards are different from country to country. Ask your local 3M contact for details, please.

Durability

Unprocessed film	The following durability data are given for unprocessed film only!		
3M™ MCS™ Warranty	In addition, 3M provides a warranty on a finished applied graphic within the framework of 3M™ MCS™ warranty program.		
Climatic zones	Graphic durability is largely determined by the climate and the angle of exposure. Find below a table showing the durability of a product according to the angle of exposure and the geographical location of the application.		
	Zone 1	Northern Europe, Italy (north of Rome), Russia	
	Zone 2	Mediterranean area without North Africa, South Africa	
	Zone 3	Gulf area, Africa	
Exposure types	Vertical:		The face of the graphic is ±10° from vertical.
	Non-vertical:		The face of the graphic is greater than 10° from vertical and greater than 5° from horizontal.
	Interior:	Interior means an application inside a building without direct exposure to elements.	

	Zone 1	Zone 2	Zone 3
Vertical outdoor exposure			
white	8 years	7 years	5 years
transparent	6 years	5 years	4 years
Non-vertical outdoor exposure			
white	4 years	3.5 years	2.5 years
transparent	3 years	2 years	2 years
Interior application			
interior	8 years	8 years	8 years

Limitations of End Uses

3M specifically does not recommend or warrant the following uses, but please contact us to discuss your needs to recommend other products.

Graphics applied to	<ul style="list-style-type: none"> - flexible substrates incl. 3M™ Panaflex™ Awning and Sign Facing 945GPS and 3M™ Panagraphics™ III Wide Width Flexible Substrate. - low surface energy substrates or substrates with low surface energy coating. - other than flat or moderate curved/corrugated surfaces. - painted or unpainted wallboards, gypsum boards and wallpapers. - stainless steel. - surfaces that are not clean and smooth. - surfaces with poor paint to substrate adhesion.
Graphic removal from	<ul style="list-style-type: none"> - signs or existing graphics that must remain intact.
Graphics subjected to Important Notice	<ul style="list-style-type: none"> - gasoline vapors or spills. - 3M Commercial Graphics Division products are not tested against automotive manufacturer specifications!

Graphics Manufacturing

Graphic protection can improve the appearance, performance and durability of printed graphics. Any printed graphic exposed to abrasive conditions (including vehicles), harsh cleaners or chemicals must include graphic protection in order to be warranted.

When to use an overprint clear or overlaminate

See instruction bulletin GPO 'graphic protection options' for further information about selection and use of protective overlaminates and printable clears.

[> Product Bulletin Graphic Protection Options <](#)

Shipping finished graphics

Flat, or rolled film side out on 130 mm (5 inch) or larger core. These methods help to prevent the liner from wrinkling or application tape, if used, from popping off.

Converting Information Inkjet Printing

Adequately Dry Graphics

A too high total physical ink amount on the film results in media characteristic changes, inadequate drying, overlaminate lifting, and/or poor graphic performance. The maximum recommended total ink coverage for this film is 270%.

Inadequate drying can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under warranty. Build enough time into your process to ensure adequate drying of the graphic.

Poorly dried film becomes soft and stretchy, and the adhesive becomes too aggressive. 3M recommends at least a minimum drying time of 24 hrs before further processing. Dry the graphic unrolled or at least as a loose wound roll standing upright.

Converting Information Screen Printing

Formulations and processing conditions can affect ink durability. Refer to the 3M Product and Instruction Bulletins for your ink for limitations and proper usage. Graphic protection can improve the appearance, performance and durability of your graphic.

A clear coat also prevents chalking on unprinted films. Use equipment designed to handle high viscosity materials and make sure the coating is evenly applied to the specifications given in the clear's Instruction Bulletin.

Application

See product bulletin ATR 'application tape recommendations' for information about selection and use of suitable application tapes for this product, please.

[> Product Bulletin Application Tape Recommendations <](#)

Refer to Instruction Bulletin 5.1 'select and prepare substrates for graphic application', for general application information.

[> Instruction Bulletin 5.1 'select and prepare substrates for graphic application' <](#)

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without strong solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline).

Refer to Instruction Bulletin 6.5 'storage, handling, maintenance and removal of films and sheetings', for general maintenance and cleaning information.

[> Instruction Bulletin 6.5 'Storage, Handling, Maintenance and Removal of Films and Sheetings' <](#)

Remarks

Important notice

This bulletin provides technical information only.

All questions of warranty and liability relating to this product are governed by the terms and conditions of the sale, subject, where applicable, to the prevailing law.

Before using, the user must determine the suitability of the product for its required or intended use, and the user assumes all risk and liability whatsoever in connection therewith.

Additional Information

Visit the web site of your local subsidiary at www.3Mgraphics.com for getting more:

- details about 3M™ MCS™ Warranty and 3M Performance Guarantee
- additional instruction bulletins
- a complete product overview about materials 3M is offering



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