Multi Purpose Inkjet Film and Specialty Products Reference for Solvent & UV Inkjet Printers

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Contents

1.0 Scope

This guide has been prepared to provide quick reference for media and printer compatibility as well as information on warranty coverage. Printer/ ink combinations listed in this matrix have been tested with the Avery Graphics MPI product line and have been found to provide acceptable image quality. The following information is based on tests believed to be reliable. This information is given without guarantee and does not constitute a warranty. The purchaser should independently determine, prior to use, the suitability of the material for his/her specific purpose.

- Avery Dennison™ MPI products will provide acceptable image quality when used with the recommended OEM inks and select 3rd party inks when noted with an **X** in the preceding charts.
- The following information is based on tests believed to be reliable. This information is given without guarantee and does not constitute a warranty.
- The purchaser should independently determine, prior to use, the suitability of the material for his/her specific purpose.

2.0 Warranty Coverage

All Avery Dennison materials qualify for our Materials Warranty. For more detailed warranty information (i.e. specific material, printer and application warranties) please contact your Avery Dennison Sales Representative.

2.1 Compatible

Avery Graphics will guarantee the product to be free from defects in material and workmanship for one year from the date of shipment as long as the product is properly stored and applied. Printer/ink combinations that have been checked as compatible have been tested for printability and ink adhesion only. Any issues related to printability should be addressed with the printer or ink manufacturer.

2.2 ICS PG

This is a warranty program that recognizes the mutual effort between Avery Graphics and specific printer, ink, and clear coat manufacturers to determine graphics performance expectations. Avery and their partners do the legwork so the graphics manufacturer does not have to. The ICS Performance Guarantee is available for a variety of proven printer, ink, media combinations, and specifically addresses

expected outdoor durability with allowance for various types of graphics protection (film overlaminate and/or liquid clear coat).

Participation does not require qualification or registration. Any graphics manufacturer utilizing qualified components and equipment has their Avery Digital Imaging Media covered in the event that the product does not perform as expected.

2.3 ICS Fleet

This is a warranty program, designed for long-term fleet graphics applications, that also recognizes the mutual effort between Avery Graphics and specific printer, ink, and clearcoat manufacturers to determine graphics performance expectations. Avery Graphics and their partners have identified exactly which components and processes are necessary to produce the best possible long-term fleet graphics.

The ICS Fleet Warranty is only available to select graphics manufacturers who demonstrate strict control over their processes and utilize ICS approved components and equipment. Qualification is required. This warranty is attractive to fleet owners and operators as it covers all of potential exposure should the graphics fail to perform as expected.

Graphics manufacturers must make a request to their Avery sales personnel, or the sales personnel of their authorized Avery distributor, to begin the process. Information required at the time of the request will include specific digital printer make and model to be qualified, ink series used, and target volume of film purchases for warranted fleet applications.

As part of the qualification process, the printer must agree to allow Avery technical personnel direct machine access for 3-4 hours to run Avery film products (provided by Avery at Avery expense), as well as open access to related processes within the shop. Avery reserves the right to charge for this qualification, but any such charge will be rebated in a material credit upon purchase of a reasonable amount of Avery Digital Imaging Media products.

3.0 Compatibility Matrix

The printers listed below are compatible with all MPI, DBM, and DFM products unless otherwise noted.

Manufacturer / Distributor	Model	Ink	Recommended Printer Settings* / ICC Profiles	Warranty Coverage		
				Comp	ICS PG	ICS Fleet
Agfa	Grand Sherpa Universal	Eco-Solvent Plus	• Recommended starting temperatures: o Pre Heat 40-55°C o Print Heat 45-55°C o Post Heat 45-55°C	X		
	Anapurna M1600	*Anapurna UV*		*X*		
	Anapurna M2050	*Anapurna UV*		*X*		
	Anapurna M2540 FB	*Anapurna UV*		*X*		
	Anapurna M4f	*Anapurna UV*		*X*		
	Anapurna Mw	*Anapurna M UV*		*?*		
	Anapurna M²	*Anapurna UV*		*X*		
	Jeti 1224 HDC FTR	*Jeti UV*		*X*		

Manufacturer/ Distributor	Model	Ink	Recommended Printer Settings* / ICC Profiles	Warranty Coverage Comp	ICS PG	ICS Fleet
Agfa	*Jeti 3020 Titan FTR*	*Jeti UV*		*X*		
	Jeti 3312 Solvent RTR	*Jeti Solvent*		*X*		
	Jeti 3324 Solvent RTR	*Jeti Solvent*		*X*		
	Jeti 3348 High Speed Solvent	*Jeti Solvent*		*X*		
	Jeti 3348 UV Galaxy RTR	*Agfajet UV*		*X*		
	Jeti 3348 UV Jetspeed RTR	*Agfajet UV*		*X*		
	Jeti 5024 Solvent RTR	*Jeti Solvent*		*X*		
ColorSpan	DisplayMaker 72$_S$	SolaChrome HR (solvent)	• Reference the media wizard for specific print mode/material settings. • ICC Profiles are provided in the ColorMark RIP. • Recommended starting temperatures: o Pre Heat 140°F(40°C) o Post Heat 140°F (40°C)	*X*	X	
	DisplayMaker 72 $_{SR}$			*X*	X	
	DisplayMaker 72 $_{SI}$			*X*	X	
	DisplayMaker 98 $_{SX}$			*X*	X	
	DisplayMaker 98 $_{SI}$			*X*	X	
Durst	Rho 160	UV (flexible inks)	• Contact Durst for media profiles and recommended printer settings.	*X*	X	
	Rho 160+			*X*	X	
	Rho 205			*X*	X	
	Rho 350			*X*		
	Rho 600			*X*		
	Rho P10 200/250	RHO UV Curable		*X*		
	Rho P10 320 R			*X*		
	Rho 1000			*X*		
	Rho 900			*X*		
	Rho 800 HS			*X*		
	Rho 800 Presto			*X*		
	Rho 500 R			*X*		
	Rho 320			*X*		
Hewlett-Packard	DesignJet 8000s	*780*	• ICC Profiles are available on Avery Graphics' web site at www.na.averygraphics.com . • Recommended starting temperatures: o Pre Heat 45°C o Print Heat 40°C o Post Heat 55°C	X	X	
	DesignJet 9000	*790*		X	X	
	DesignJet 10000			*X*	X	
	DesignJet L25500	*789*		*X*	*X*	
		792		*X*	*Testing*	
	DesignJet L265500	*792*		*X*	*Testing*	
	DesignJet L28500	*792*		*X*	*Testing*	
	DesignJet L65500	*768*		*X*	*X*	
HP Scitex	*LX 600*	*600*		*X*	*X*	
		610		*X*	*X*	
	LX 820	*600*		*X*	*X*	
		610		*X*	*X*	
	LX 850	*600*		*X*	*X*	
		610		*X*	*X*	

Manufacturer/ Distributor	Model	Ink	Recommended Printer Settings* / ICC Profiles	Warranty Coverage		
				Comp	ICS PG	ICS Fleet
HP Scitex	*FB500*	*FB250*		*X*		
	FB700	*FB250*		*X*		
	FB910 (formerly ColorSpan DisplayMaker 72 UVX, 72 UVR, 98 UVX)	*SolaChrome UV*	• *Reference the media wizard for specific print mode/material settings.* • *Recommended start point for all roll media:* o *UV Lamps = Low* o *Take-up = 3* o *Supply = Idle* o *Platen Vacuum = 5.0* o *Print Delay = 0.*	*X*	*X*	
	FB6100 (formerly NUR Tempo)	*UV*	o	*X*		
	FB7600	*FB255*		*X*		
	Novo (Idanit)	DR100	• Use material profile provided by Scitex. • Recommended starting temperatures: o Pre Heat: Level 3 or 4 (actual temperature should be 100°F/37°C) o Post Heat: Jet dryer should be 230°F (110°C) @ * FPM	X	X	X
	PressJet	DR100		X	X	X
	TJ8350 (formerly TurboJet)	TJ100 Supreme	NOTE: After completion of the print cycle on the Novo, the ink must be thoroughly jet dried to eliminate the solvents from the ink. It is recommended that the sheet remain in the heat section of the dryer for a minimum of 60 seconds at 190-200°F with good air exchange to eliminate solvent retention in the printed graphic. Excessive solvent retention can compromise film and adhesive properties. Actual jet dry times will depend on equipment and shop conditions.	X	X	X
	TJ8600	TJ210		X		
	XL1200 (formerly XLJet)	XL300 Supreme	• Use material profile provided by Scitex. • Recommended starting temperatures: o Print Heat 29-37°C o Post Heat: both rows of heaters on	X	X	X
	XL1500 (formerly XLJet Premium)	XL300 Supreme		X	X	X
	XP2500	XP222		X		
		XP 231		*X*		
	XP5100	*XP222*		*X*		
	XP5500	*XP222*		*X*		
		XP231		*X*		
Mimaki	JV3 Series	SS-2	• ICC Profiles are available on Avery Graphics' web site at www.na.averygraphics.com . Recommended starting temperatures: • Pre Heat 50°C • Print Heat 45°C • Post Heat 50°C	X	X	
		ES-3		X	X	
	JV33 Series	SS-21		X	X	
	CJV33 Series	SS-21		X	X	
	JV5	HS-1		X	X	
		ES-3		X		
	JV34 Series	*SS-21*		*X*	*X*	
	JV400 LX	*LX 100*		*X*	*Testing*	
	UVJ-160	*LH100*		*X*		
		LF200 (flexible)		*X*	*X*	

Manufacturer/ Distributor	Model	Ink	Recommended Printer Settings* / ICC Profiles	Warranty Coverage Comp	ICS PG	ICS Fleet
Mutoh	Falcon Outdoor	Eco-Ultra	• ICC Profiles are available on Avery Graphics' web site at www.na.averygraphics.com. • Recommended starting temperatures: o Print Heat 45-55°C o Post Heat 45-55°C	*X*	X	
	Falcon Outdoor Jr.	Eco-Ultra		*X*	X	
	Falcon II Outdoor	Eco-Ultra	• ICC Profiles are available on Avery Graphics' web site at www.averygraphics.com . • Recommended starting temperatures: o Pre Heat 40-55°C o Print Heat 45-55°C o Post Heat 45-55°C	*X*	X	
	Toucan	Toucan Solvent	• ICC Profiles are available on Avery Graphics' web site at www.averygraphics.com . • Recommended starting temperatures: o Print Heat 45°C o Post Heat 65°C	*X*	X	X
	Toucan LT	LT Solvent	• ICC Profiles are available on Avery Graphics' web site at www.averygraphics.com . • Recommended starting temperatures: o Pre Heat 40-55°C o Print Heat 45-55°C o Post Heat 45-55°C	*X*	X	
		Eco-Ultra		X	*X*	
	ValueJet Series (all platforms)	Eco-Ultra	ICC Profiles are available on Avery Graphics' web site at www.averygraphics.com	*X*	X	
NUR	Blueboard	Solvent	• Use material profile provided by NUR.	X		
	Fresco	Solvent	• Use material profile provided by NUR. • Quality Modes: o Press (allows for better drying and print quality. o Press + • Recommended starting temperatures: o Pre Heat 50°C (120°F) o Post Heat 95°C (200°F)	X		
		Triangle FCO (3rd party ink)	Note: When setting at higher temperatures for drying check for consistent heating across the web. Use temperature tapes to ensure there are no hot zones that could damage the material during drying.	*X*	*X*	
	Salsa	Solvent	• Use material profile provided by NUR. The printer operator may optimize the profile. • Quality Modes: o Press (allows for better drying and print quality. o Press + • Recommended starting temperatures: o Pre Heat 50°C (120°F) o Post Heat 95°C (200°F)	X		
	Expedio	UV	• Use material profile provided by NUR.	X		

Manufacturer/ Distributor	Model	Ink	Recommended Printer Settings* / ICC Profiles	Warranty Coverage		
				Comp	ICS PG	ICS Fleet
Roland	VersaCAMM Series	ECO-SOL MAX	• ICC Profiles are available on Avery Graphics' web site at www.na.averygraphics.com .	X	X	
		w/ white & metallic		X		
	VersaArt RS Series	*ECO-SOL MAX*		*X*	*X*	
	VersaArt RS Series	*ECO-SOL MAX*		*X*	*X*	
	SolJet Pro II Series	ECO-SOL MAX		X	X	
	SolJet Pro III Series	ECO-SOL MAX	• *No durability statements available for white and metallic inks.*	X	X	
		w/ white & metallic		*X*		
	SolJet Pro 4 Series	*ECO-SOL MAX w/ white & metallic*		*X*		
	SolJet EX	ECO-SOL MAX			X	
	Advanced Jet AJ 1000	*Eco Xtreme*		*X*	*X*	
	VersaUV LEJ	*Eco-UV*		*X*		
		Eco-UV S		*X*		
	VersaUV LEC Series	*Eco-UV*		*X*		
		Eco-UV S		*X*		
Seiko ColorPainter	64S &100S	EG-Outdoor LX	• ICC Profiles are available on Avery Graphics' web site at www.na.averygraphics.com .	X	X	
	V64	EG-Outdoor EX	• Recommended starting temperatures:	X	X	
		EG-Outdoor LX	o Pre Heat 45°C	X	X	
	H-74s & H-104s	EG-Outdoor GX	o Print Heat 40°C o Post Heat 55°C	X	X	
	W-64s & W-54s	GX Low Solvent		X		
		IX HAPs-Free		X		
		Neon		X		
	H2-74s & H2-104	EG-Outdoor GX		X	?	
	H2P-74s & H2P-104s	Low Solvent VX		X		

Manufacturer/ Distributor	Model	Ink	Recommended Printer Settings* / ICC Profiles	Warranty Coverage Comp	ICS PG	ICS Fleet
VUTEk	UltraVu 150 UltraVu 250	UltraVu 5	• Use material profile provided by VUTEk. • Vacuum 40-100% • Recommended starting temperatures: o Pre Heat: 95-110°F (35-43°C) o Post Heat: 140-150F (60-65°C) • Tension: 30 on dial (needle should bounce when media moves.	X	X	X
	UltraVu 2360/3360	UltraVu 5	• Use material profile provided by VUTEk.	X	X	X
		Sericol Color+ for YT VUTEk (3rd party ink)	• Recommended starting temperatures: o Pre Heat: 95-110°F (35-43°C)	X	X	
		Triangle VUV (3rd party ink)	o Post Heat: 140-150°F (60-65°C)	X	X	
	UltraVu II 3360	UltraVu 5		X	X	X
	UltraVu 3300/5300	UltraVu 5		X	X	X
	UltraVu 5330	UltraVu 5	NOTE: Units with the IR Heat unit for drying should keep the dryer temperature around 90°F and the IR temperature can be set to recommended post heat settings listed above.	X	X	X
	PressVu UV 200/600	PressVu 200	• Use material profile provided by VUTEk.	X	X	
	QS 2000	QS Series 2		X		
	QS 3200	QS Series 2		X		
		Co-Branded EFI & 3M		X		
	QS 3250r	Flexible EFI UV		X		
	QS2 Pro	Flexible EFI UV		X		
	GS 2000	Flexible EFI UV		X		
	GS 3250	Flexible EFI UV		X		
	GS 3250$_{LX}$	EFI UV		X		
	GS 3250r	Flexible EFI UV		X		
		GSr 3M Premium UV		X		
	GS 5000r	Flexible EFI UV		X		
		GSr 3M Premium UV		X		
	HS 100 Pro	HS 100 UV		X		

NOTES:

- These settings are intended as a starting point only. Regions with higher relative humidity may require increased drying temperatures.
- 3rd party inks are identified under the ink name.
- Regions with higher relative humidity may require increased drying temperatures.

4.0 General Information on Durability

Applying an overlaminate or clear coat to graphic images provides depth, protection, and various gloss levels for the image and is a necessary step in the production of a finished digital print.

The durability of the total graphic construction is stated in the following charts. The least durable of the following items determines the overall durability:

- Ink
- Substrate Product
- Overlaminate Film or Clear Coat

5.0 Solvent Inkjet Outdoor Durability

- Reference Digital Media Selector for Durability of all MPI films
- Reference Instructional Bulletin #1.30 for durability guidelines

6.0 Troubleshooting

Problem	Possible Cause	Solution
Ink runs at edge of media	Wavy edges / media lifting from platen or drum at edge	Make sure media is loaded straight.
		On machines with a vacuum platen or drum, make sure the holes are not filled with ink.
		Move print heads away from media. This will reduce sharpness of image but may fix problem.
		Store media vertically. Allows media to settle causing edges to be flush with the core.
		Shop conditions should be in recommended range for material being used. See specific Product Data Bulletin for material being used. If using a drum printer, use material on 6.0" (15.2 cm) core.
Ink not drying	Post/Drying heat too low.	Adjust temperature. See chart in section 2 for recommended starting points.

Problem	Possible Cause	Solution
Ink mottle	Pre-heat temperature too low.	Adjust temperature. See chart in section 2 for recommended starting points.
	Incorrect ICC profile or FM table (on Scitex drum printers).	Download correct ICC profile from www.digital.averygraphics.com .
		For Scitex drum printer select different FM table. Use table created for media being used.
Poor print quality	Contamination on material face.	Use isopropyl alcohol to clean all drive rollers that come in contact with the material face.
	Pre-heat temperature too low.	Adjust temperature. See chart in section 2 for recommended starting points.
Clogged print heads	Pre-heat temperature too high.	Lower temperature setting. See chart in section 2 for recommended starting points.
	Print heads dirty.	Clean print heads.
Media is loading incorrectly	Media is wrinkled or wavy when loaded onto printer.	On Scitex Drum printers, make sure MPI products on 6" core are being used. (The MPI products are specifically designed for loading onto the Idanit printer.)
		Cover unused vacuum holes with a low tack premask. This will increase vacuum on holes that are in use.
		On machines with a vacuum platen or drum, make sure the holes are not filled with ink.
		Make sure that material is evenly tensioned.
Media not flat on the platen or drum.	Not using MPI materials.	Make sure the appropriate MPI products are being used.
	Media is not loaded correctly.	Make sure that material is evenly tensioned and loaded straight on the printer.
Media is not unloading properly on drum printers.	Media is sticking to the drum.	Lower the drum temperature. Standard setting is 3-4.
	Unload speed of drum is faster than transfer conveyer.	Lower drum unloading speed or increase transfer conveyer speed.
Horizontal Banding	Clogged nozzle	Clean affected print head. It may be necessary to replace the head. Follow maintenance and adjustment procedures to ensure the print head is in good condition. This will reduce risk of nozzle drop out.
	Print speed	Switch from bidirectional to unidirectional printing. Bidirectional printing, although typically faster than unidirectional, is more prone to banding. This is due to the fact that dots are dropped from the carriage as it moves both left and right, creating differing dot angles.
	Ink not compatible with Avery media	Be sure to use quality inks. If the OEM ink is not being used, reference section 3 of this document for 3rd party inks that have been tested with Avery digital media.

Problem	Possible Cause	
Horizontal Banding	Material wound too loosely or uneven tension across web	Material wound loosely or unevenly will cause slippage and generally you will find banding, many times more prevalent on one side of the media than the other. Make sure media is fed straight through the printer. If media is not straight uneven tension can be created.
	Too much or too little heat	Too much heat can cause the ink to dry in the heads and clog nozzles. Too little heat can cause other print defects such as fisheyes or speckles.
	Tension	Too much tension may cause incorrect stepping of the media resulting in banding.
Roller marks appearing on media	The appearance of pinch roller marks on media is usually due to static electricity on the media.	Clean the pinch rollers with Isopropyl Alcohol - use a sparing amount as this can create marks as well (the IPA is absorbed into the roller and is 'squeezed' out over a period of time).
		Turn down the vacuum level on the platen - this may reduce the amount of static.
		Make sure carriage height is as low as possible - less flight time for print drops means less time to be effected by static charges.
		Use a lower pressure setting for holding the media in the pinch point of the printer - reduces the opportunity for physically 'denting' the media.
		Humidify the work area to 30% to 40% RH - lessens the potential for static electricity generation. The onset of drier conditions in winter usually generates issues for some customers.
Paper sticking to Flag material	Too much pre or print heat	Print and pre heat temperature should not exceed 92-95 F otherwise paper will stick.

Revisions have been italicized.

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