

Materials

Digital



Digital Printing Materials



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**MATERIALS FOR WATER-BASED INK-JET PRINTING**

Description						
	Article	Front Material	Colours / Surface finish gloss (G) matt (M) semi-gloss (SG)	Adhesive	Covering Material	Areas of Use
Outdoor Application	<b>ORAJET® 1915</b>	soft PVC film with one-sided micro-porous waterproof ink-jet coating, 110 micron	white (M)	solvent polyacrylate, permanent adhesive, transparent	Silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays. Long-term protection against UV-rays and mechanical stress in combination with ORAGUARD® laminating films. Edge-trimmed lamination recommended. However, sealing of the edges necessary in extreme stress (for example use of car wash).
	<b>ORAJET® 1916</b>	micro-porous polyolefine film with matt surface, 175 micron	white (M)	solvent polyacrylate, removable, transparent	Silicone-coated paper, 98 g/m <sup>2</sup>	For brilliant and colourful displays. Long-term protection against UV-rays and mechanical stress in combination with ORAGUARD® laminating films. Edge-trimmed lamination possible. However, sealing of the edges necessary in extreme stress (for example use of car wash).
	<b>ORAJET® 1917</b>	special PVC film with one-sided micro-porous waterproof ink-jet coating, 140 micron	white (M)	solvent polyacrylate, permanent, transparent	Silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful large format displays. Long-term protection against UV-rays and mechanical stress in combination with ORAGUARD® laminating films. Edge-trimmed lamination recommended. However, sealing of the edges necessary in extreme stress (for example use of car wash). Suitable also for oil based and mild solvent inks.
	<b>ORAJET® 1940</b>	transparent polyester film with one-sided waterproof matt white translucent ink-jet coating, 145 micron	white (M), translucent	—	—	For back-lit poster displays in front print technique. Suitable for indoor and outdoor application. Long-term protection against UV-rays and mechanical stress in combination with ORAGUARD® laminating films.
Indoor Application	<b>ORAJET® 1902</b>	coated paper, 120 g/m <sup>2</sup> , with one-sided special ink-jet coating	white (M)	polyacrylate, permanent adhesive, transparent	Silicone-coated paper, 80 g/m <sup>2</sup>	For inexpensive production of large-format prints for indoor short-term decoration.
	<b>ORAJET® 1911</b>	special soft PVC film with one-sided special translucent ink-jet coating, 100 micron	white (M)	solvent polyacrylate, permanent adhesive, transparent	Silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays.
	<b>ORAJET® 1930</b>	white (100 micron) and transparent (125 micron) polyester film with one-sided special glossy ink-jet coating	white and transparent (G)	polyacrylate, permanent adhesive, transparent	Silicone-coated paper, 80 g/m <sup>2</sup>	For high brilliancy and photorealistic large-format prints.

Recommended Printers and Information about ICC Profiles please see [www.orafol.de](http://www.orafol.de)

**Technical Data\***

**Recommendations**

Recommended Printing Inks 1. Dye 2. Pigmented 3. Oil based inks 4. Mild-Solvent	Adhesive Power (FINAT-TM 1) <sup>⊖</sup> N/25 mm (average)	Minimum Application Temperature	Temperature Resistance <sup>⊕</sup> no variation	Shelf Life (unprinted) in years	Standard Sizes of Rolls on 2" core <sup>⊙</sup>		ORAGUARD® Laminating Films											
					widths (mm)	lengths (m)	200	210	215	220HG	221HG	231HG	240	250AS	255AS	372		
1, 2, 3	18	+10°C	30°C to +60 °C	1	914 1070 1270 1370 1520	20 20 20 20 20	*											*
2	6	+8°C	20°C to +60 °C	1	914 1070 1270 1520	20 20 20 20	*											*
1, 2, 3 and 4	18	+10°C	30°C bis +60 °C	1	914 1070 1270 1370 1520	20 20 20 20 20	*							*				*
2 and 3	—	—	—	1	914 1270 1520	20 20 20				*	*							
1 and 2	16 (tear of the paper)	+10°C	20°C to +60 °C	1	914 1070 1270 1520	20 20 20 20	*	*		*	*	*						
1 and 2	12	+10°C	20°C to+60 °C	1	914 1270 1520	20 20 20	*	*		*	*	*						
1 bubble-jet technique	12	+10°C	30°C to +70 °C	1	914 1270 1520	20 20 20				*	*	*						

- ⊕ measurement after 24 hours
- ⊖ adhered to aluminium
- ⊙ special sizes on request

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## FILMS FOR SOLVENT-BASED INK-JET PRINTING

Description						
	Article	Front material	Colours / Surface Finish gloss (G) matt (M) semi-gloss (SG)	Adhesive	Covering Material	*Areas of Use
Long-term Application	<b>ORAJET® 3951</b>	Premium cast PVC-film, 53 micron	white (G) transparent (G)	solvent polyacrylate, repositionable, permanent adhesive, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. complete car wrapping.
	<b>ORACAL® 870</b>	PVC cast-film 70 micron	various colours (G)	solvent polyacrylate, repositionable, permanent adhesive, transparent	silicone paper, 135 g/m <sup>2</sup>	For complete car wrapping.
	<b>ORAJET® 3751</b>	polymeric PVC film, 60 micron	white (G) transparent (G)	solvent polyacrylate, repositionable, permanent adhesive, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For long-term displays with the highest degree of brilliancy and durability in outdoor applications.
	<b>ORAJET® 3551</b>	polymeric PVC film, 70 micron	white (G), (M), transparent (G)	solvent polyacrylate, repositionable, permanent adhesive, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.
	<b>ORAJET® 3591</b>	polymeric PVC film, 70 micron	white (G), (M), transparent (G)	solvent polyacrylate, removable, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For long-term displays with the highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.
	<b>ORAJET® 3105</b>	polymeric PVC film, 100 micron	white (G), (M), (SG), transparent (G)	solvent polyacrylate, permanent adhesive, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For displays with highest service life in outdoor, e.g. large format application.
	<b>ORAJET® 3109</b>	polymeric PVC film, 100 micron	white (G), (M), (SG), transparent (G), (M), (SG)	solvent polyacrylate, removable, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For displays with highest service life in outdoor, e.g. large format application.
	<b>ORAJET® 3107</b>	polymeric PVC film, 110 micron	white (G)	solvent polyacrylate, repositionable, permanent adhesive, transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For displays with highest service life in outdoor, e.g. large format car wrapping.
	<b>ORAJET® 3850</b>	translucent polymeric PVC film, 80 micron	white (SG)	solvent polyacrylate, permanent adhesive, transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For illuminated displays for long-term outdoor applications, e.g. application on light boxes.
Medium-term Application	<b>ORAJET® 3165</b>	special PVC film, 100 micron	white (G), (M), (SG), transparent (G), (M), (SG)	solvent polyacrylate, permanent adhesive, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For brilliant and colourful displays for outdoor applications.
	<b>ORAJET® 3169</b>	special PVC film, 100 micron	white (G), (M), (SG), transparent (G), (M), (SG)	solvent polyacrylate, removable, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For brilliant and colourful displays for outdoor applications.
	<b>ORAJET® 3651</b>	special PVC film, 70 micron	white (G), (M), (SG), transparent (G), (M), (SG)	solvent polyacrylate, permanent adhesive, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For brilliant and colourful displays for outdoor applications.
	<b>ORAJET® 3650</b>	special PVC film, 70 micron	white (G), (M), (SG)	solvent polyacrylate, permanent adhesive, transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For brilliant and colourful displays for outdoor applications.
	<b>ORAJET® 3691</b>	special PVC film, 70 micron	white (G), (M), (SG), transparent (G), (M), (SG)	solvent polyacrylate, removable, grey transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For brilliant and colourful displays for outdoor applications.

## Technical Data\*

## Recommendations

	Adhesive Power (FINAT-TM I) N / 25 mm (average)	Minimum Application Temperature	Temperature Resistance ② no variation	Service Life (unprinted) in years	Standard Sizes of Rolls on 3" and 6" cores and Arizona		ORAGUARD® Laminating Films															
					widths (mm)	lengths (m)	200	210	215	220HG	221HG	240	290	290F	297GF	250AS	255AS					
													*	*								
Recommended Printers and Information about ICC Profiles please see <a href="http://www.orafol.de">www.orafol.de</a>	18	+8°C	50°C to +100 °C	10  8	760 1370 1520	50 100 250									*	*						
	18	+8°C	50°C to +100 °C	6 - 10 (according to colour shade)	1520	50 100 250									*	*						
	18	+8°C	50°C to +90 °C	8	760 1370 1520	50 100 250			*						*	*						
	18	+8°C	50°C to +90 °C	7	760 1370 1520	50 100 250			*						*	*						
	8	+8°C	50°C to +90 °C	7	760 1370 1520	50 100 250			*						*	*						
	18	+8°C	50°C to +90 °C	7	760 1370 1520	50 100 250			*						*	*						
	8	+8°C	50°C to +90 °C	7	760 1370 1520	50 100 250			*						*	*						
	16	+8°C	40°C to +90 °C	7	1520	50 100 250			*						*	*						
	18	+8°C	40°C to +80 °C	7	760 1370 1520	50 100 250			*													
	18	+8°C	40°C to +80 °C	5	760 1370 1520	50 100 250		*	*													
	8	+8°C	40°C to +80 °C	5	760 1370 1520	50 100 250		*	*													
	18	+8°C	40°C to +80 °C	5	760 1370 1520	50 100 250		*	*													
	18	+8°C	40°C to +80 °C	5	760 1370 1520	50 100 250		*	*													
	8	+8°C	40°C to +80 °C	5	760 1370 1520	50 100 250		*	*													

① measurement after 24 hours

② adhered to aluminium

③ special sizes on request

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**FILMS FOR SOLVENT-BASED INK-JET PRINTING**

Description						
	Article	Front Material	Colours / Surface Finish gloss (G) matt (M) semi-gloss (SG)	Adhesive	Covering Material	*Areas of Use
Medium-term Application	<b>ORAJET®</b> <b>3451</b>	highly flexible special PVC film, 80 micron	white (SG)	solvent polyacrylate, permanent adhesive, transparent	PE-coated silicone paper, 148 g/m <sup>2</sup>	For displays on flexible substrates in outdoor applications, e.g. tarpaulins
	<b>ORAJET®</b> <b>3164</b>	soft PVC film, 100 micron	white (G), (M) transparent (G), (M)	polyacrylate, permanent adhesive, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
	<b>ORAJET®</b> <b>3164-x</b>	soft PVC film, 100 micron	white (G), (M)	polyacrylate, permanent adhesive, grey	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
	<b>ORAJET®</b> <b>3162</b>	soft PVC film, 100 micron	white (G), (M), transparent (G), (M)	polyacrylate, removable, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
	<b>ORAJET®</b> <b>3162-x</b>	soft PVC film, 100 micron	white (G), (M)	polyacrylate, removable, grey	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
	<b>ORAJET®</b> <b>3640</b>	soft PVC film, 80 micron	white (G), (M), transparent (G), (M)	polyacrylate, permanent adhesive, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
	<b>ORAJET®</b> <b>3641</b>	soft PVC film, 80 micron	white (G), (M)	polyacrylate, permanent adhesive, grey	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
	<b>ORAJET®</b> <b>3620</b>	soft PVC film, 80 micron	white (G), (M), transparent (G), (M)	polyacrylate, removable, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
	<b>ORAJET®</b> <b>3621</b>	soft PVC film, 80 micron	white (G), (M)	polyacrylate, removable, grey	silicone-coated paper, 135 g/m <sup>2</sup>	For brilliant and colourful displays in short- and medium-term outdoor applications.
Short-term Application	<b>ORACAL®</b> <b>1663</b>	highly pigmented special PVC film, 110 micron	white (G), (M)	solvent polyacrylate, removable, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For floorgraphics in connection with ORAGUARD® laminating films 250AS or 255AS.
	<b>ORACAL®</b> <b>1660</b>	highly pigmented special PVC film, 110 micron	white (G), (M)	polyacrylate, removable, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For advertising on means of transportation with high demand on opacity.
	<b>ORAJET®</b> <b>3675</b>	perforated special PVC film, 140 micron	white (G), with black backing	solvent polyacrylate, permanent, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	Window Graphics Film for advertising graphics on even transparent surfaces from glass that should allow light to pass through, e.g. application on means of transportation (only with ORAGUARD® 297GF).
	<b>ORAJET®</b> <b>3676</b>	perforated special PVC film, 140 micron	white (G), with black backing	solvent polyacrylate, permanent, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	Window Graphics Film for advertising graphics on even transparent surfaces from glass that should allow light to pass through, e.g. application on means of transportation (only with ORAGUARD® 297GF).

Recommended Printers and Information about ICC Profiles please see www.orafol.de

**Technical Data\***

**Recommendations**

Adhesive Power (FINAT-TM I) N / 25 mm (average)	Minimum Application Temperature	Temperature Resistance no variation	Service Life (unprinted) in years	Standard Sizes of Rolls on 3" and 6" cores and Arizona		ORAGUARD Laminating Films														
				widths (mm)	lengths (m)	200	210	215	220HG	221HG	240	290	290F	297GF	250AS	255AS				
14	+8°C	20°C to +65 °C	4	760 1370 1520	50 100 250			*												
16	+10°C	40°C to + 80 °C	4	760 1000 1050 1260 1370 1520 1600 2000	50 100 250	*	*													
16	+10°C	40°C to + 80 °C	4	760 1000 1050 1260 1370 1520 1600 2000	50 100 250	*	*													
6	+10°C	40°C to + 80 °C	4	760 1000 1050 1260 1370 1520 1600 2000	50 100 250	*	*													
6	+10°C	40°C to + 80 °C	4	760 1000 1050 1260 1370 1520 1600 2000	50 100 250	*	*													
16	+10°C	40°C to + 80 °C	4	760 1000 1260 1370 1520 1600 2000	50 100 250	*	*													
16	+10°C	40°C to + 80 °C	4	760 1000 1260 1370 1520 1600 2000	50 100 250	*	*													
7	+10°C	40°C to + 80 °C	4	760 1000 1260 1370 1520 1600 2000	50 100 250	*	*													
7	+10°C	40°C to + 80 °C	4	760 1000 1260 1370 1520 1600 2000	50 100 250	*	*													
5	+8°C	40°C to + 80 °C	3	1370 1520	50 100 250														*	*
6	+10°C	40°C to + 80 °C	3	1370 1520	50 100 250		*													
12	+10°C	40°C to + 80 °C	3	1370	25 50														*	
12	+10°C	40°C to + 80 °C	3	1370	25 50														*	

- ① measurement after 24 hours
- ② adhered to aluminium
- ③ special sizes on request

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**FILMS FOR THERMOTRANSFER PRINTING**

Description						
	Article	Front Material (without adhesive and covering material)	Colours / Surface Finish <sup>④</sup> gloss (G) matt (M) semi-gloss (SG)	Adhesive	Covering Material	*Areas of Use
Long-term Application	<b>ORACAL® 851</b>	cast PVC film, 50 micron	white (G), transparent (G)	solvent polyacrylate, permanent adhesive, transparent	silicone-coated paper, 137 g/m <sup>2</sup>	For displays with highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering. Particularly suitable for rivets and corrugations.
	<b>ORACAL® 820G</b>	cast PVC film, 55 micron, safety film	white (G)	polyacrylate, permanent adhesive, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For strong adhering stickers with the character of documents. Removal impossible without edge tearing.
	<b>ORACAL® 751</b>	polymeric PVC film, 60 micron	white (G), transparent (G)	solvent polyacrylate, permanent adhesive, transparent	silicone-coated paper, 137 g/m <sup>2</sup>	For displays with highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.
	<b>ORACAL® 551</b>	polymeric PVC film, 70 micron	white (G), transparent (G)	solvent polyacrylate, permanent adhesive, transparent	silicone-coated paper, 137 g/m <sup>2</sup>	For displays with highest degree of brilliancy and durability in outdoor applications, e.g. vehicle lettering.
	<b>ORACAL® 8500</b>	translucent polymeric PVC film, 80 micron	white (SG)	solvent polyacrylate, permanent adhesive, transparent	silicone-coated paper, 137 g/m <sup>2</sup>	For illuminated displays for outdoor applications, e.g. adhesion on light boxes.
Medium-term Application	<b>ORACAL® 651</b>	special PVC film, 70 micron	white (G), transparent (G)	solvent polyacrylate, permanent adhesive, transparent	silicone-coated paper, 137 g/m <sup>2</sup>	For brilliant and colourful displays for outdoor applications.
	<b>ORACAL® 451</b>	highly flexible special PVC film, 80 micron	white (SG)	solvent polyacrylate, permanent adhesive, transparent	silicone-coated paper, 137 g/m <sup>2</sup>	For displays on flexible substrates in outdoor applications, e.g. tarpaulins
	<b>ORACAL® 641</b>	soft PVC film, 75 micron	white (G), transparent (G)	polyacrylate, permanent adhesive, transparent	silicone-coated paper, 137 g/m <sup>2</sup>	For brilliant and colourful displays for outdoor applications.
Short-term Applications	<b>ORACAL® 1663</b>	highly pigmented special PVC film, 110 micron	white (G)	solvent polyacrylate, removable, transparent	silicone-coated paper, 135 g/m <sup>2</sup>	For floor graphics in connection with ORAGUARD® laminating films 250AS or 255AS.

Recommended Printers and Information about ICC Profiles please see [www.orafol.de](http://www.orafol.de)

**Technical Data\***

**Recommendations**

Adhesive ① Power (FINAT TM I) N / 25 mm (average)	Minimum Application Temperature	Temperature Resistance ② no variation	Service Life (unprinted) in years	Standard Sizes of Rolls ③ on 3" core		ORAGUARD Laminating Films															
				widths (mm)	lengths (m)	20	20	215	220HG	221HG	240	290	290F	297GF	250AS	255AS					
18	+8°C	50°C to +100 °C	6-10 (according to colour shade)	378 914 1000	50									*	*						
The adhesive power is higher than its tensile strength.	+10°C	50°C to +100 °C	5	378 914 1000	50																
18	+8°C	50°C to +90 °C	5-8	378 914 1000	50				*					*							
18	+8°C	50°C to +90 °C	5-7	378 914 1000	50				*					*							
18	+8°C	40°C to +80 °C	7	378 914 1000	50				*												
18	+8°C	40°C to +80 °C	4-5	378 914 1000	50			*	*												
14	+8°C	20°C to +65 °C	4	378 914 1000	50				*												
16	+10°C	40°C to +80 °C	3-4	378 914 1000	50	*	*														
5	+8°C	40°C to +80 °C	3	378 914 1000	50															*	*

- ① measurement after 24 hours
- ② adhered to aluminium
- ③ special sizes on request
- ④ colours on request

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## LAMINATING FILMS / MOUNTING FILMS

## Description

	Article	Front Material	Surface Finish gloss (G), semi-gloss (SG), matt (M), high-gloss (HG)	Adhesive	Covering Material
Laminating Films	<b>ORAGUARD® 200</b>	soft PVC film, 70 micron, with high-level UV-protection	transparent (G), (SG), (M)	polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 210</b>	soft PVC film, 70 micron, with high-level UV-protection	transparent (G), (SG), (M)	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 215</b>	polymeric PVC film, 75 micron, with high-level UV-protection	transparent (G), (SG), (M)	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 220 HG</b>	polyester film, 36 micron, with high-level UV protection	transparent (HG)	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 221 HG</b>	polyester film, 75 micron, with high-level UV-protection	transparent (HG)	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 231</b>	polypropylene film, 60 micron	transparent (M), (HG)	polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 240</b>	polyvinyl fluoride film (Tedlar), 25 micron	transparent (G)	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 290</b>	Premium cast PVC film, 50 micron, with high-level UV-protection	transparent (G), (M)	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 290 F</b>	Premium cast PVC film, 50 micron, with high-level UV-protection	transparent (G)	solvent polyacrylate, permanent adhesive, neutral	siliconised PETP film, 36 micron
	<b>ORAGUARD® 297 GF</b>	Premium cast PVC film, 70 micron, with high-level UV-protection	transparent (G)	solvent polyacrylate, permanent adhesive, neutral	siliconised PETP film 36 micron
	<b>ORAGUARD® 250 AS</b>	special PVC film, 120 micron, with high-level UV-protection	transparent, raised non-skid texture	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 255 AS</b>	special PVC film, 170 micron, with high-level UV-protection	transparent, raised non-skid texture	solvent polyacrylate, permanent adhesive, neutral	silicone-coated paper, white, 90 g/m <sup>2</sup>
	<b>ORAGUARD® 372</b>	special polyester film, 23 micron, with high-level UV-protection	transparent (HG)	solvent polyacrylate, permanent adhesive, neutral	double-sided silicone-coated PE paper, white, 160 g/m <sup>2</sup>
Mounting Films	<b>ORABOND® 4052</b> ⊕	polyester film, 12 micron	transparent	double-sided solvent polyacrylate, permanent adhesive	double-sided silicone-coated, PE paper, white 120 g/m <sup>2</sup>
	<b>ORABOND® 4032</b> ⊕	polyester film, 12 micron	transparent	open side: solvent polyacrylate, permanent adhesive covered side: solvent polyacrylate, removable	double-sided silicone-coated, PE paper, white 120 g/m <sup>2</sup>
	<b>ORABOND® 4040</b> ⊕	polyester film, 12 micron	transparent	double-sided polyacrylate, permanent adhesive	double-sided silicone-coated glassine paper, white, 90 g/m <sup>2</sup>
	<b>ORABOND® 1392</b>	hard PVC film, 38 micron	white	double-sided solvent polyacrylate, modified, permanent adhesive	double-sided silicone-coated glassine paper, brown, 90 g/m <sup>2</sup>
	<b>ORABOND® 1395</b>	polyester film, 12 micron	transparent	double-sided solvent polyacrylate, modified, permanent adhesive	double-sided silicone-coated glassine paper, brown, 90 g/m <sup>2</sup>
	<b>ORAMOUNT® 1811</b>	PE foam, 1000 micron	white	double-sided solvent polyacrylate, modified, permanent adhesive	double-sided silicone-coated glassine paper, blue, 90 g/m <sup>2</sup>

\*\* Laminating films increase the life of digitally printed pictures and graphics, besides they protect them against UVA, -B and -C rays and abrasion.

The life of a printed overlaminated film essentially depends on the materials (inks or resin ribbons), their quality (durability and UV-resistance, please see product specifications of the manufacturers), their drying degree, curing times and on conditions of their applications and use. Own tests are absolutely necessary.

\*\*\* The ORAFOL data refer to the life of an unprotected picture which has a durability of one year (normal European climate)

## Technical Data\*

** Areas of Use	Adhesive Power (FINAT/ETM 1) N /25 mm (average) ①	Minimum Application Temperature	Temperature Resistance (no variation) ②	*** Extension Factor of UV-Protection in years	Standard Sizes of Rolls ③		
					widths (mm)	lengths (m)	
For inexpensive protection of large-format digital prints in indoor and short-term outdoor applications. Also suitable for heat transfer and wet processing of electrostatic prints.	10	+10°C	40°C to +80 °C	+1	760 950 1050 1300	50 50 50 50	
For protection of large-format digital prints in indoor and outdoor applications. Also suitable for heat transfer and wet processing of electrostatic prints.	12	+8°C	40°C to +80 °C	+2	1400 1550	50 50	
For protection of large-format digital prints in indoor and outdoor applications. Also suitable for heat transfer and wet processing of electrostatic prints.	12	+8°C	50°C to +90 °C	+3			
For protection of large-format digital prints in indoor and outdoor applications. Also suitable for heat transfer and wet processing of electrostatic prints.	12	+8°C	-40°C to +120 °C	+2	950 1050 1300 1400 1550	50 50 50 50 50	
For protection of large-format digital prints in indoor and outdoor applications. Also suitable for heat transfer and wet processing of electrostatic prints. Gives a brilliant and colourful effect.	12	+8°C	-40°C to +120 °C	+2	950 1050 1300 1400 1550	50 50 50 50 50	
For inexpensive protection of large-format digital prints in indoor applications.	7	+10°C	40°C to +90 °C	+2	1050 1300	50 50	
For high-quality protection of large-format digital prints in outdoor applications. (Anti Graffiti Film)	12	+8°C	-50°C to +120 °C	+5	950 1300	50 50	
For high-quality protection of large-format digital prints in outdoor applications. Also suitable for heat transfer and wet processing of electrostatic prints.	12	+8°C	-50°C to +110 °C	+4	760 950 1050 1300 1400 1550	50 50 50 50 50 50	
For high-quality protection of large-format digital prints in outdoor applications. Also suitable for heat transfer and wet processing of electrostatic prints.	12	+8°C	-50°C to +110 °C	+4	760 950 1400 1550	50 50 50 50	
For protection of printed ORAJET® Window Graphics film 363 I. Protects the perforation from humidity, dust or other contaminations.	12	+8°C	-50°C to +100 °C	+4	760 950 1400 1550	50 50 50 50	
With its high skid- and abrasion resistance especially suitable for protection of floor graphics in indoor applications. Meets the standards of ASTM D 2047 and BAM StVO § 35 d 3.	12	+8°C	40°C to +80 °C	—	1050 1300 1400	50 50 50	
With its high skid- and abrasion resistance especially suitable for protection of floor graphics in indoor applications. Meets the standards of ASTM D 2047 and BAM StVO § 35 d 3. Extremely stress resistant.	12	+8°C	40°C to +80 °C	—			
Excellent protection especially against graffiti and environmental influences. (Anti Graffiti Film)	12	+8°C	40°C to +120 °C	+2	1000 1260	50 50	
Mounting film for self-adhesive protection of smooth surfaces.	11	+8°C	40°C to +150 °C	<b>NOT APPLICABLE</b>	1050 1300 1550	50 50 50	
Mounting film for self-adhesive protection of smooth surfaces. The adhesive guarantees residueless removal within 2 years of outdoor application.	open side: 11 covered side: 2	+8°C	40°C to +120 °C				
Mounting film for self-adhesive protection of smooth surfaces.	11	+10°C	40°C to +150 °C				
For the installation of heavy displays.	45	+15°C	40°C to +70 °C		1000 1250 1550	12 25 38 50	50 50 50 50
For the attachment of signs, covers, scales, metal and plastic films and for general fixing.	30	+15°C	-40°C to +160 °C, short periods up to +180°C				
For the installation of heavy displays, adheres well even on uneven surfaces.	tear of foam	+15°C	-40°C to +100 °C				

- ① measurement after 24 hours
- ② adhered to aluminium
- ③ special sizes on request
- ④ also available with double-sided covering

\*The statements in this information sheet are based upon our knowledge and practical experience. This data is intended only as a source of information, is given without guarantee and does not constitute a warranty. Due to the wide variety of possible uses and applications, customers should determine independently, prior to use, the suitability of this material for their specific purpose.

# Processing and Handling Instructions

## 1. Introduction

ORAFOL offers a wide range of self-adhesive digital printing materials for many different applications. They come with a well-matched set of laminating films. To ensure that the films display the specified properties, it is important to follow the instructions for preparation and application which can be found on the Internet under [www.orafol.de](http://www.orafol.de).

## 2. Storage and Processing Conditions

The self-adhesive products ORACAL®, ORAJET®, ORAGUARD®, ORABOND® and ORAMOUNT® are supplied in rolls and should at all times be stored either suspended or standing on end on the roll blocks provided, and never lying on the material side. For storage and processing, they should be kept in a cool, dry place protected from sunlight. Relative air humidity between 50% and 60% and temperature between +18°C and +22°C should be ensured. Direct sunlight, storage beside radiators etc. should by all means be avoided. Please observe the shelf life instructions contained in the technical data sheet accompanying each film.

## 3. Instructions for Printing

The digital printing materials should generally be handled with a high degree of care. Cotton gloves should be used to prevent damage to the surface or soiling. Check the surface quality prior to printing or application. Also check the print file with profiling. The ORACAL®/ORAJET® digital printing media require - due to their differing qualities like the thickness of the adhesive layer - different parameter settings of the printer and the selecting software (RIP).

Make sure you take the relevant amount of ink and specific colour definitions (Corporate Identity) into account. In addition, check the specifications of the digital printing materials and the inks for their respective applications (indoor/outdoor) and durability, and match them accordingly.

## 4. Lamination

Lamination of inkjet prints is recommended to ensure longer lives at optimum quality (gloss, colour depth, mechanical damage). ORAGUARD® laminate films enhance the colour effect for the desired appearance of the surface (glossy, matt, semi-gloss), provide excellent protection against the UV rays of the sun destroying the colour pigments, and against humidity and abrasion. Soiling can easily be removed by using common cleaning agents. It is important for all lamination that the ink of the print has thoroughly dried before application. Insufficient drying of the used inks may lead to damaging of

the laminate adhesive or bubble formation. Moreover, difficulties might arise with the stability of inks not fully dried. Spread freshly printed media out for proper drying. We recommend only using films of same manufacture and type (e.g. monomeric on monomeric and polymeric on polymeric vinyls) as their raw materials are accurately matched with each other. Furthermore, we refer you to our list of recommendations for complementary application of the printing materials in Inkjet and thermo transfer printing, and to the specific laminating films provided for their surface protection. For product information about ORAGUARD® laminates, please see [www.orafol.de](http://www.orafol.de).

## 5. Important and General Information

ORAFOL will provide information on inks, ink types and parameters concerning the printers used. Lists of complementary films and recommended printers as well as a free CD with ICC profiles for various printers may be made available. For more detailed descriptions of the above subjects, please go to [www.orafol.de](http://www.orafol.de).

Important note: In a lacquer system properly applied to the target substrate, adhesion between the respective layers will be more powerful than the adhesion between an ORAFOL self-adhesive film and the top lacquer layer. Damage to lacquered surfaces by the adhesive system of the ORAFOL self-adhesive films is therefore excluded.

\*This information is based on our knowledge and practical experience. With a view to the diversity of potential influencing factors during application and use, we recommend testing of our products by customers who wish to use the films for special applications. No legally binding warranty of certain qualities can be derived from our information.

# Digital Materials



Digital Printing Materials



Plotter Materials



Screen and Offset Printing Materials



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**DAR**

TGA-ZQ-004 / 92-00

ZERT GmbH  
The company is certified according to DIN EN ISO 9001:2000  
and DIN EN ISO 14001:2004