

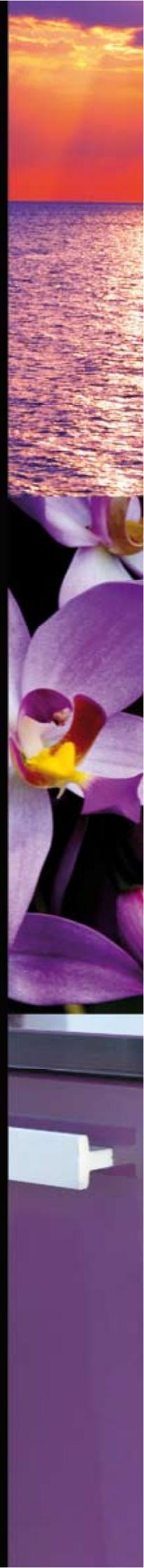


■ VERNICI PER LEGNO ■

# Iridea

UV CURING

UV COATINGS



# Iridea

UV CURING

Its ongoing research into cutting-edge technical solutions and its partnership with leading names in the production of coating systems have enabled ICA to formulate UV coatings that have what it takes to deliver excellent aesthetic results with low levels of environmental impact.

ICA has decided to leverage this approach to develop UV products that are able to satisfy the modern requirements of industrial coating across various manufacturing sectors (cupboard doors, doors, profiles, etc.).

ICA has dedicated an entire wing of its new Research & Development laboratories to the application of its products. This application laboratory houses the most important types of systems used in the coating of wood, not only making it possible to test the formulated products under a range of different conditions but also enabling the client to evaluate the product in terms of its application effectiveness. Moreover, ICA's increased flexibility in formulation and production, as well as its excellent technical support service, allow the company to maximize the efficiency of a plethora of different coating lines.

Another important part of the Research & Development laboratory is given over to the conducting of chemical/physical tests on the applied products. These tests are carried out on coated surfaces during the experimental phase and also in response to specific client requests. The purpose of the testing is to enhance the technical characteristics of the finished (coated) object in order to prevent defects from arising once in use.





## POLYESTER UV COATINGS

Polyester UV coatings – which are widely used in the coating of flat panels, thanks (in part) to their low cost – offer sufficient responsiveness for the required line speeds and make it possible to achieve an excellent finish. They are formulated with unsaturated polyester resins dissolved in styrene. The styrene performs the function of a solvent and has the capacity to react with the resin, thus contributing to the total dry residue of the coating.

Thanks to the experience in formulation and application that it has accumulated over the years, ICA boasts a wide range of polyester UV coatings that are able to satisfy any set of technical and application requirements. Specifically, in line with recent market trends, ICA has developed an extensive array of polyester UV matt top coats, for spray or curtain-coater application, with aesthetic characteristics and a smoothness to the touch similar to those of polyurethane top coats, but with reduced drying times and greater surface hardness.

- \_\_\_\_\_ Transparent and pigmented polyester UV fillers for roller application.
- \_\_\_\_\_ Transparent matt and gloss polyester UV top coats for roller application.
- \_\_\_\_\_ Transparent polyester UV base coats for spray application.
- \_\_\_\_\_ Transparent paraffinated and direct polyester UV base coats for curtain-coater application.
- \_\_\_\_\_ Transparent and pigmented matt and gloss polyester UV top coats for spray application.
- \_\_\_\_\_ Transparent and pigmented matt and gloss polyester UV top coats for curtain-coater application.

## ACRYLIC UV COATINGS

Compared to polyester UV coatings, acrylic UV coatings have lower levels of environmental impact, since the monomers they contain have a far lower level of volatility compared to the styrene found in polyester UV coatings, thus making it possible to achieve products with a 100% dry residue.

ICA's acrylic UV products stand out for their optimum elasticity, adhesion and chemical/physical resistance. Moreover, through the use of appropriate primers, it is also possible to resolve the problems that typically afflict resinous wood species. Thanks to their high reactivity, these products – specifically formulated for the coating of profiles and cornices – satisfy the high transport-speed processing requirements that are typical of this sector.

The comprehensive nature of the range makes it possible to choose specific products for each requirement and for different types of spray and roller application. In addition, the range encompasses new products that have been introduced to be applied with the most modern coating system technologies, such as laser rollers (both for base coats and for top coats) and normal and vacuum coaters.

- \_\_\_\_\_ Transparent acrylic UV primers for roller application.
- \_\_\_\_\_ Transparent and pigmented acrylic UV fillers for roller application.
- \_\_\_\_\_ Transparent acrylic UV base coats for spray application.
- \_\_\_\_\_ Transparent and pigmented matt and gloss acrylic UV top coats for spray application.
- \_\_\_\_\_ Transparent and pigmented matt and gloss acrylic UV top coats for roller application.
- \_\_\_\_\_ Transparent acrylic UV base coats for curtain-coater application.
- \_\_\_\_\_ Transparent and pigmented matt and gloss acrylic UV top coats for curtain-coater application.
- \_\_\_\_\_ Transparent acrylic UV base coats for vacuum coater application.
- \_\_\_\_\_ Transparent matt and gloss acrylic UV top coats for vacuum coater application.

## WATER-BASED UV COATINGS

Thanks to the excellent chemical/physical characteristics of the dry film and the wide variety of application techniques, latest-generation water-based UV coatings are achieving ever-greater success in spray and curtain-coater applications. To be suitable for these application techniques, traditional UV products (whether polyester or acrylic) must be formulated with monomers and volatile solvents. In contrast, in water-based UV coatings, the function of the solvent is performed mostly by water. This enables companies using these coatings to get to grips with the problem of atmospheric emissions, while avoiding the installation of expensive emission-reduction systems.

With ICA's water-based UV coatings, it is possible to create open-pore and matt finishes that are aesthetically equivalent to those that can be created with solvent-based bicomponent acrylic and polyurethane coatings. The range also includes pigmented top coats in any color, with no limitation on shade, thereby overcoming the typical restrictions on polyester or acrylic UV coatings. Thanks to their physical drying, ICA's water-based UV coatings also make it possible to coat three-dimensional objects rapidly and effectively. Last but not least, it is possible to carry out mixed coating cycles whenever necessary, using acrylic UV

### DRYING

The use of water-based UV coatings involves the complete evaporation of the water from the damp film prior to the coating passing under high-powered UV lamps. Under normal circumstances, traditional methods such as vertical tunnels, laminar tunnels and/or warm-air percussion – with drying times in excess of twenty minutes – can be used easily with this type of product.

Currently, the market for wood-coating machinery is witnessing the introduction of new technologies that entail the use of special mixed warm-air/infra-red/microwave/radiowave lamps, which can markedly reduce the water-evaporation times.

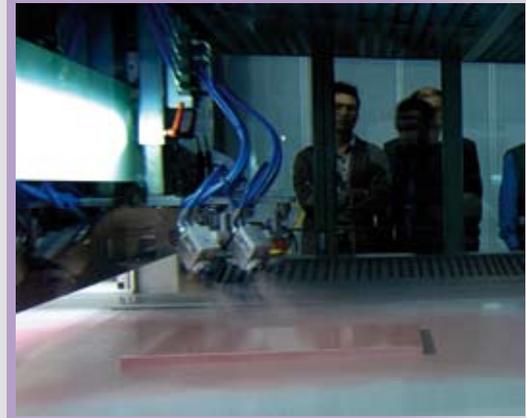
- \_\_\_\_\_ Transparent and pigmented water-based UV for spray application.
- \_\_\_\_\_ Transparent and pigmented matt, semi-gloss and gloss water-based UV top coats for spray application.
- \_\_\_\_\_ Transparent and pigmented matt, semi-gloss and gloss water-based UV top coats for curtain-coater application.

## ROLLER APPLICATION

- Transparent acrylic UV primers.
- Transparent and pigmented polyester UV fillers.
- Transparent and pigmented acrylic UV fillers.
- Transparent matt and gloss polyester UV top coats.
- Transparent and pigmented matt and gloss acrylic UV top coats.

## SPRAY APPLICATION

- Transparent polyester UV base coats.
- Transparent acrylic UV base coats.
- Transparent and pigmented water-based UV base coats.
- Transparent and pigmented matt and gloss polyester UV top coats.
- Transparent and pigmented matt and gloss acrylic UV top coats.
- Transparent and pigmented matt, semi-gloss and gloss water-based UV top coats.



## CURTAIN-COATER APPLICATION

- Transparent paraffinated and direct polyester UV base coats.
- Transparent acrylic UV base coats.
- Transparent and pigmented matt and gloss polyester UV top coats.
- Transparent and pigmented matt and gloss acrylic UV top coats.
- Transparent and pigmented matt, semi-gloss and gloss water-based UV top coats.



## VACUUM COATER APPLICATION

- Transparent acrylic UV base coats.
- Transparent matt and gloss acrylic UV top coats.

new

### WATER-BASED UV GLOSS TOP COATS FOR SPRAY AND CURTAIN-COATER APPLICATION

Thanks to its ongoing research and development activities, ICA has overcome the technical limitations of water-based UV coatings in terms of their capacity to achieve gloss finishes. Today, the range includes top coats with high levels of brilliance, distension and brushability, with a view to meeting current coating requirements in the furniture sector.



## TRANSPARENT

### POLYESTER UV CYCLE FOR DOORS AND PANELS

PRODUCT	DESCRIPTION	APPLICATION	QUANTITY g/m <sup>2</sup>	%VOC
Sanding with 180-grain abrasive paper.				
UVF41F	Transparent polyester UV base coat	Roller machine	20 - 30	1
Semi drying with 1 high power UV lamps (80 W/cm) at 8 m/min.				
UVS27F1	Transparent polyester UV base coat	Reverse roller	50	1
Drying with 3 high power UV lamps (80 W/cm) at 8 m/min.				
Sanding with 320-grain abrasive paper.				
UVO5093	Transparent polyester UV top coat	Curtain-coater	100	60
Flash off 3 minutes in tunnel at 30°C + 2 minutes with lamps TL03+TL05.				
Drying with 3 high power UV lamps (80 W/cm) at 8 m/min.				
<b>Theoretic volatile solvent (VOC) maximum per m<sup>2</sup> coated: 60.7 - 60.8g</b>				

### ACRYLIC UV CYCLE FOR DOORS AND FLAT PANELS

PRODUCT	DESCRIPTION	APPLICATION	QUANTITY g/m <sup>2</sup>	%VOC
Sanding with 180-grain abrasive paper.				
UVS5099	Acrylic UV filler	Filler roller	30 - 40	0
Semi drying with 1 high power UV lamps (80 W/cm) at 10 m/min.				
UVS5107	Acrylic UV base coat	Laser roller machine	30 - 40	0
Drying with 3 high power UV lamps (80 W/cm) at 10 m/min.				
Sanding with 320-grain abrasive paper.				
UVO5095	Acrylic UV top coat (available in various gloss levels)	Laser roller machine	10 - 15	0
Drying with 2 high power UV lamps (80 W/cm) at 10 m/min.				
<b>Theoretic volatile solvent (VOC) maximum per m<sup>2</sup> coated: 0g</b>				

### ACRYLIC UV MIXED CYCLE + WATER BASED UV FOR SOLID WOOD CUPBOARD DOORS

PRODUCT	DESCRIPTION	APPLICATION	QUANTITY g/m <sup>2</sup>	%VOC
Sanding with 180-grain abrasive paper.				
UVF5052	Acrylic UV base coat	Roller machine	30	0
Semi drying with 1 high power UV lamps (80 W/cm) at 10 m/min.				
UVS32	Acrylic UV base coat	Reverse roller	50	0
Drying with 3 high power UV lamps (80 W/cm) at 10 m/min.				
Sanding with 320-grain abrasive paper.				
UVA95	Water-based UV top coat (available in various gloss levels)	Curtain-coater	100	0,5
Flash off 40 minutes in vertical oven 45°C.				
Passage under 2 high power UV lamps (80W/cm) at 8 m/min.				
<b>Theoretic volatile solvent (VOC) maximum per m<sup>2</sup> coated: 0.5g</b>				

### WATER-BASED UV CYCLE FOR SOLID WOOD CUPBOARD DOORS

PRODUCT	DESCRIPTION	APPLICATION	QUANTITY g/m <sup>2</sup>	%VOC
Sanding with 180-grain abrasive paper.				
Vehiculated water-based stain		Spray	15 - 20	9,2
Light sanding with abrasive sponge.				
UVA83	Transparent water-based UV base coat	Spray	100 - 120	1,8
30 minutes in vertical oven 45°C.				
Drying with 2 high power UV lamps (80 W/cm) at 10 m/min.				
Sanding with 320-grain abrasive paper.				
UVA94	Transparent water-based UV matt top coat (available in various gloss levels)	Spray	100 - 120	0,35
Flash off 30 minutes in vertical oven 45°C.				
Drying with 2 high power UV lamps (80W/cm) at 8 m/min.				
<b>Theoretic volatile solvent (VOC) maximum per m<sup>2</sup> coated: 4.5g*</b>				

\* A similar coating cycle with polyurethane products would produce a VOC level per m<sup>2</sup> coated of around 170 g.

The information contained in this brochure has been prepared to the best of our knowledge and is intended to give general guidelines, since it would be impossible to describe in detail all of the potential processing operations and application systems. We recommend that you carry out a preliminary test before starting to coat the entire surface. For more information, please consult the technical data sheets or request support directly from ICA Customer Service. "UV Coatings" is periodically re-issued with updates that take account of the most recent developments in technology and in our direct experience. Please make sure you are using the most recent version.

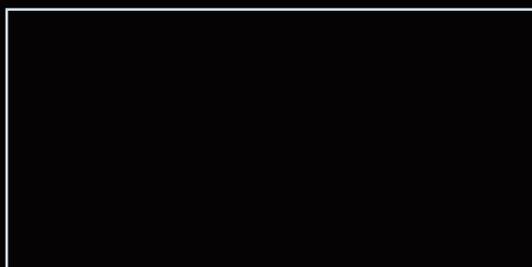
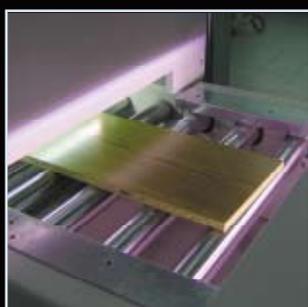
## PIGMENTED

### WATER BASED UV CYCLE FOR PANELS IN MELAMINE PAPER\*

PRODUCT	DESCRIPTION	APPLICATION	QUANTITY g/m <sup>2</sup>	%VOC
Sanding with 280-grain abrasive paper.				
UVA5173 or UVA5133**	Pigmented water-based UV top coat (available in various gloss levels)	Spray	100 - 120	2
Flash off in vertical oven 45°C.				
Drying with 2 high power UV lamps (one gallium and one mercury) (80W/cm) at 5 m/min.				
<b>Theoretic volatile solvent (VOC) maximum per m<sup>2</sup> coated: 2g</b>				

\*It is necessary to carry out preliminary tests to ascertain adhesion onto the type of paper used.  
\*\*The same cycle can be used on MDF following the prior application of two or three coats of white, water-based UV base coat.





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