


How UV-Curable Varnish and Water-Based Coatings Differ on Your Prints

### Description

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**The difference between an inkjet printhead-applied varnish, a UV coating, and a water-based coating on digitally printed truck curtains is significant in terms of chemistry, durability, flexibility, environmental impact, cost, and long-term performance.**

## 1. Inkjet Printhead-Applied Varnish (UV)

UV Inkjet varnish or clear coating, liquid lamination, lacquer appears similar in finished appearance

### Advantages

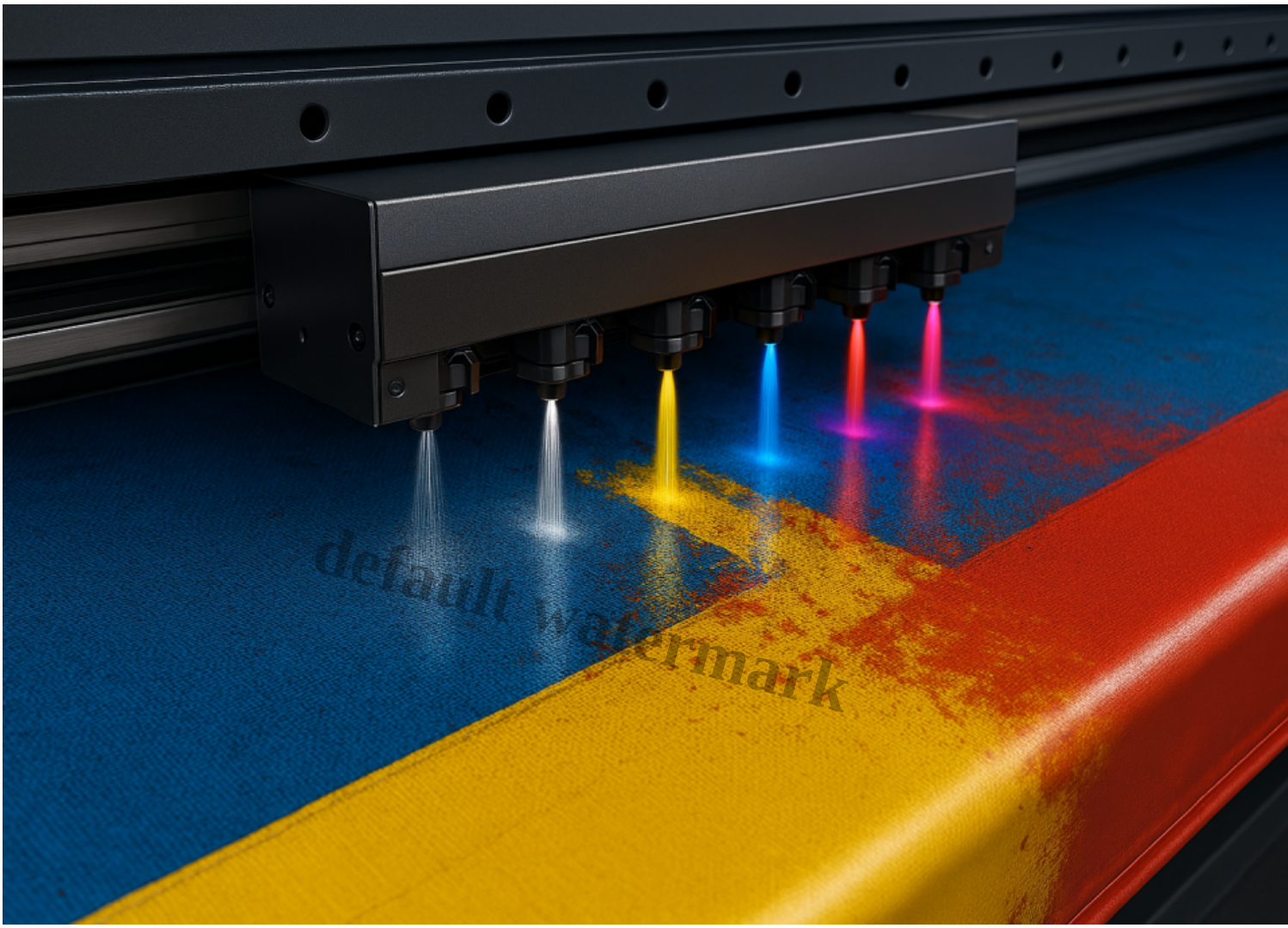
- Precise application only where needed.
- Can create spot gloss, matte, textured, or raised effects. (subject to capabilities of print heads)
- No additional finishing equipment required.
- Usualy processes at the same time as printing Also Good for decorative graphics and retail displays.

### Disadvantages for Truck Curtains

- Usually very thin coating weight.
- Limited protection against abrasion.
- Limited chemical resistance.
- Can crack on highly flexible curtain-side materials.
- Expensive coating chemistry.
- Not designed primarily for heavy-duty transport applications.

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### Typical Thickness

5â??15 microns.

### Best For

Indoor graphics.

Retail displays.

Decorative vehicle graphics.

## 2. UV Liquid Coating

A UV-curable acrylic coating applied by roller, spray, curtain coater, or flood coating system and cured using UV lamps. â?? Usually only


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## Advantages

- Excellent gloss levels.
- High scratch resistance.
- Fast curing.
- Good chemical resistance.
- Good weather resistance.

## Disadvantages for Truck Curtains

- Can become brittle over time.
- Risk of cracking during repeated flexing.
- May delaminate from some PVC curtain materials.
- Higher energy consumption due to UV curing.
- Difficult to recycle coated materials.

### Typical Thickness

- 10â??50 microns.

### Best For

- Rigid boards.
- Signage.
- Vehicle panels.
- Short-to-medium flexibility applications.

## 3. Water-Based Acrylic Coating

Applied by roller, spray, gravure, flexo, or other coating systems and dried using ambient air or warm air.

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### Advantages

- Excellent flexibility.
- Better elongation characteristics.
- Less cracking on folding curtains.
- Lower VOC emissions.
- Lower energy consumption.
- Easier to formulate with anti-graffiti and anti-microbial additives.
- Better sustainability profile.
- Easier handling and storage.

### Disadvantages

- Longer drying times than UV.

- Slightly lower initial hardness.
- May require multiple coats for maximum protection.

## Typical Thickness

- 5â??30 microns.

## Best For

- Truck curtains.
- Tensioned fabrics.
- Banners.
- Flexible PVC.
- Textile graphics.

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# Truck Curtain Application Comparison

Truck curtains experience:

- Constant flexing.
- Folding.
- Wind loading.
- UV exposure.
- Road salt.

- Fuel splashes.
- Cleaning chemicals.
- Abrasion from straps and buckles.

For these reasons, flexibility is often more important than ultimate hardness.

| Property | Inkjet Varnish | UV Coating | Water-Based Coating |
|---|---|---|---|
| Flexibility | Fair | Moderate | Excellent |
| Abrasion Resistance | Fair | Very Good | Good to Very Good |
| UV Resistance | Good | Excellent | Excellent |
| Chemical Resistance | Fair | Excellent | Good |
| Crack Resistance | Poor | Moderate | Excellent |
| Sustainability | Moderate | Poor | Excellent |
| Repairability | Difficult | Difficult | Easier |
| Cost per mÂ² | High | Medium | Low-Medium |
| Suitability for Truck Curtains | Fair | Good | Excellent |

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## What Most Truck Curtain Manufacturers Prefer

Many fleet graphics suppliers and curtain manufacturers favour flexible acrylic coatings because they:

- Move with the PVC fabric.
- Resist cracking around folds.
- Maintain image quality longer.
- Reduce the risk of coating failure.
- Provide a lower environmental footprint.

For digitally printed UV or latex truck curtains, a properly formulated water-based acrylic protective coating often provides the best balance between:

- Durability
- Flexibility
- Weather resistance
- Washability
- Sustainability
- Cost

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This is one reason why specialist coating systems such as water-based acrylic protective coatings are increasingly being used as an alternative to traditional UV varnishes when long-term curtain flexibility is critical.

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