

UV COATING BUYING GUIDE

Benefits of UV Coating

A **UV Coating Machine** allows you to apply an attractive, durable coating to the surface of a printed page, which is then cured under a special ultraviolet light. Once the UV curable coating (UV coating, for short) is exposed to the UV light, it quickly hardens, allowing you to coat and cure products at a speedy pace. The whole process runs about as quickly as your printer can output. Some models of UV coating machines even interface with certain digital presses to make the process seamless.

What kind of products can be UV coated? There are many printed items that can benefit from a UV coating, making them more eye-catching to your customers. Some of the most common UV coated products include:

- Postcards
- Business cards
- Catalogs
- Presentation Folders
- Hand-out sheets
- Photographs

*UV Coatings allow you
to apply a gloss or
matte finish to printed
paper or cardstock*

UV coating machines can even be used to add a glossy coat to wood, glass, plastic, and aluminum beverage cans. If it fits in the machine, you can apply a UV coating.

UV coating is one of the best methods available for finishing products and giving them a professional look. It has numerous advantages over other coating methods commonly used today. UV coatings can be high gloss, yielding a very high shine finish, which is great for image-rich materials, such as catalogs and brochures. You might choose a matte coating to add a little class to higher-end business reports and hotel/spa literature. When used on dark and rich colors, glossy UV coatings can create a wet look that is impressive and eye-catching.

Another advantage of UV coated products is their resistance to abrasion. If your products will be mailed or handed out to customers, they need to be able to resist wear and tear. A great benefit of UV coating is that it is smudge resistant, durable, and does not easily pick up marks or scratches.

With UV coating machines, you get a crystal clear finish which makes images stand out and adds a professional touch that will impress your customers and competitors. As well as being visually impressive, UV coated products are environmentally friendly as they are free from solvents and do not give off VOCs (volatile organic compounds) when they are cured.

Benefits of UV Coating

Appearance:

- Colors “pop”
- Gloss or matte finish
- Helps pieces stand out
- Adds a finished appearance

Cost:

- Cheaper than laminating
- Coat thousands of pages with a single bucket of fluid
- Coating process is quick, more productivity = higher profits

Durability:

- Smudge resistant
- Scuff resistant
- Water repellent



Cost benefit of UV Coating

Compared to other forms of coating, the per sheet cost of UV coating is very reasonable. The cost per 8.5 x 11 sheet is around \$0.01 (based on a \$280 cost for a 5 gallon bucket). You should be able to coat 12,500 US letter-size sheets from a 5 gallon bucket. The margin on your project should result between 75% – 100% on your business.

Compare that to the cost of lamination. A 5 mil lamination on an 8.5 x 11 inch sheet can run \$0.32 per page. While lamination has its role in document finishing, especially for durability, UV coating is the all-around favorite in terms of cost and finished product.

Considering the speed at which you can feed documents through a UV coating machine, it is the hands down winner for high-volume production. Plus, you can achieve further productivity gains by automating the feed of documents through the machine.

UV Coating Fluid

Curing of a UV-coated document — called polymerization — occurs with exposure to a specific wavelength of UV Light, between 200 – 400 nanometers. UV coatings tend to be solvent free, which makes them non-volatile, and environmentally friendly.

The coating is a 100% solid basis, which means the liquid turns into a solid film once it is coated and cured. The result is no evaporation or losses, unlike traditional solvent-based or water-based coatings or inks.

Storage

UV coating fluid remains liquid for a long time. The only risk is if it's exposed to UV light, such as from the sun. UV coating fluid is always packaged, and should be stored, in a black bucket or container. A slow gelling or curing may occur if exposed to direct or indirect sunlight (which can even happen sealed in a white bucket).

Selection

Not all UV coating is the same. Are you using a digital printer or offset printer? The first step in selecting the right fluid is to determine what type of printer you are using. The fluid is formulated by the manufacturer, based on the chemical output of the color prints you're printing, and the make and model of printer.

Proper Ventilation

One of the results of the UV curing process is the output of ozone. Depending on the formula of coating you use, ozone can be a problem. For some individuals, a strong ozone odor may cause headaches or other side effects. If the coating you're using puts out too much ozone, you will definitely need a well-ventilated room.

Some machines even heat up the document using Infrared settings. This can also generate a smell that escapes through the top vent of the machine. Adding an exhaust vent above your UV coating machine will eliminate any odors from the curing process.

Lloyd's of Indiana carries 2 brands of UV coating fluid

We gained our knowledge through experience in our own printing operation. While you might find many other brands of UV coating on the market, TEC Lighting and REVO consistently worked best with our equipment and produced the highest quality results.

TEC Lighting XtraCoat

Tech Lighting's line of UV curable fluid is reasonably priced, and comes in a variety of finishes, including Gloss, Satin and Matte. When shopping, pay attention to the formulations. They produce specific coatings for Konica-Minolta, Xerox, HP Indigo, Canon and Offset presses.

XtraCoat does give off a decent amount of ozone, so you will smell it when running. Be sure to provide adequate ventilation when using TEC Lighting products.



REVO Coatings - LOW ODOR

This is a high quality UV coating fluid that currently comes in Gloss, Matte, and Soft Touch. REVO Coating formulas can be used for Konica-Minolta Biz-Hub, Xerox iGen, HP Indigo and Offset presses. The output is very rich and high quality. The ozone output is extremely low compared to other UV coating fluids. Highly recommended.



- EXTREMELY LOW ODOR
- VOC FREE
- SOLVENT FREE



It even passes the Mary test! Mary works in our production facility. Anytime we run a UV coating job, she always comments about the smell of a project. When we put our new formula into our machine and cranked up the IR, she did not even know we were running it. So, if it passes the Mary test, it will work well in your print shop.

UV Coating Machines

Let's look at the physical requirements to consider when purchasing a UV Coating Machine.

Power Requirements

Most UV coating machines run on 220 volts. Check the specifications of the machine before purchasing. You will need an outlet that can handle the proper electrical supply. Before installation, consult with an electrician to make sure you have the power supply you will need.

Space Requirements

If you are purchasing a mini UV coating machine in the 13" - 20" range, the minimum space requirements are 90 square feet. High-volume production machines, like the TEC Lighting Mega-Coat 45, easily fill a space the size of a two car garage.

When shopping for a machine, take into consideration the size of the machine plus the room you need to handle the printed products on both ends. The process is a straight through path, feeding products into one end and catching them on the other. Some machines contain integrated infeed and outfeed equipment, while others are hand fed and require you to catch it on the other side.

Venting Requirements

There are a couple of requirements for venting. If you are working in a 90 square foot room, chances are you will need to vent the room. UV lamps generate a lot of heat, so much like your dryer at home, you will need exterior venting just to avoid heat buildup.

If you are operating in a larger space, venting may not be required as long as you have decent air circulation. A UV coating machine vent looks a lot like a dryer vent. Depending on your space, you can vent it horizontally through a wall or vertically through the ceiling. Unlike venting for a gas furnace, you are simply removing odor and heat, so you should not need any fancy filters. The exception may be in densely populated areas, so your neighbors don't complain.

Preferred Manufacturers

Again, we base our recommendations on experience. At Lloyd's of Indiana, we found UV coating machines from **TEC Lighting** and **American Ultraviolet** to be among the highest quality in the industry. Both companies manufacture their equipment right here in the U.S.A.

A UV coater is a complicated machine, and a huge investment. Most print shops can't afford to lose revenue if their equipment breaks down. Buying from an American manufacturer offers peace of mind knowing parts and service will be available quickly.

American Ultraviolet Coating Company

American Ultraviolet (AUV) has over 50 years experience in UV/Aqueous Coating applications in process and service. They support their customers with excellent parts and service on their machines. Building UV coaters is the easy part; customer support is a big issue in the UV/AQ Coater market.

The following features are common on AUV Coating Machines:

- High speed UV/AQ coating solution for digital prints or offset output
- User-friendly touch screen control panel
- One side metering roller and rubber roller adjustment
- Dual ridged polymer doctor blade for bottom roller cleanup
- Full recirculation fluid pumping system
- Vacuum hold-down throughout conveyor paper path
- High output UV/IR drying systems
- Run up to 3/8" thick substrate (without feeder)
- Optional automatic vacuum feeder and receding stacker



AUV52
Handles sheets up to 52" wide

With Digital Printing, you have many challenges in matching the right coating with your print to achieve good lay downs, good adhesion, and high gloss levels. REVO Coatings are a great compliment to American Ultraviolet - UV Coating Machines.

TEC Lighting - TruCoat and MegaCoat Series of UV Coating Machines

TEC Lighting is a world leader in the design, manufacture, and distribution of UV lamps, curing equipment, and special energy sources. They have over 100 years of combined experience in UV curing technology.

As a small company, they have a flexible approach to engineering, problem solving and development of processes to ensure you are getting state of the art technology. Their goal is to help you focus on your primary business while providing the knowledge and access to technology to support your project requirements.

Some of the features in a TEC Lighting UV Coating System:

- Small footprint
- 3-minute set-up and cleanup
- Adjustable intensity IR for flow-out and adhesion
- 3 roll applicator system with doctor blade
- Easy to adjust roller gaps
- Heavy-duty casters for mobility
- Enclosed design for noise reduction in office environments



MegaCoat XL63
Handles sheets up to 63" wide

As you may have guessed, TEC Lighting formulated their XtraCoat coatings to work best in their own machines, although they also work great in any UV coater. You can't go wrong with XtraCoat in a TruCoat or MegaCoat machine.

Maintenance and Cleaning

You will need to clean your UV coating machine after every use to maintain optimal performance. The most common mistake is not cleaning up after each use. If you leave fluid in your machine, it gets exposed to UV light, which cures and hardens it. Pieces of hardened UV coating then get into the mechanical parts, which can damage the machine.

The most sensitive — and expensive — part is the roller, which can cost around \$550. If any foreign objects (like hardened fluid) stick to the roller, it can get damaged, which prevents it from properly coating the document.

You will need static free rags to clean your machine. Lloyd's carries Nubtex static free rags for UV coating machine cleanup.

Another important part of a coating machine is the belt, which costs around \$300. This is another part that can be damaged without proper cleaning.

You are not alone

This document just threw a ton of information at you. If you are new to UV coating, we know it can be overwhelming to sift through the variety of options; machines, coatings, maintenance, not to mention building requirements. Just take a breath.

Lloyd's of Indiana has been in the document finishing business since 1987. We use these machines in our own operation, and we gladly share our knowledge with anyone who needs it.

You can call us at **(877) 626-6848**, Monday – Friday from 8:00 a.m. to 5:00 p.m., Eastern. Sales and support personnel are ready to answer any questions.

Since 1987, Lloyd's of Indiana has supplied our customers with top-of-the-line printing equipment, document finishing equipment, and document finishing supplies. But did you know we also run a very successful printing operation? That's right, Lloyd's of Indiana not only sells the equipment, we also use it. That's why we are so knowledgeable when customers call us with questions!

