

OPC Drum coating explained

FEBRUARY, 2009

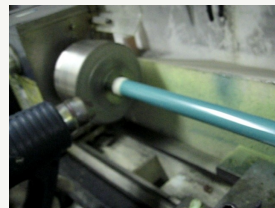
DESCRIPTION OF COATING AND INSTRUCTION OF USAGE

Theory



Organic photoconductive coating is composed mainly from 2 important layers. First one is CGL and second is CTL. Charge-Generation-Layer is the layer where photoconductive pigment is included. This is usually TiOPC pigment in y-shape of crystals. The second layer is the most important. It's called CTL or Charge Transfer Layer. It's purpose is to transfer electric charge generated in the lower layer to the surface. With transferred charge

the toner powder is picked up from developer roller. And this layer must be recoated in order to protect the CGL layer. I will try to explain in simple words how you can easily do it in your workshop. During whole process you should take really good care of cleanliness. I'm not talking about making 100% cleanroom but you also shouldn't have toner and dust particles all over the place. We installed normal micron air filter and recoating is now much more reliable.



Composition of coating

The coating is composed from different elements. Most important is the binder. We use same quality polycarbonate as standard in industry. This will ensure full compatibility and endurance for whole cycle. Another ingredient is the heart of the coating—charge transfer complex. It's organic compound that transfers the electron to the surface and picks up the toner particles.

We add also many different organic solvents and additives to dissolve the binder and enable fluent and clog-free spraying of the liquid.

The last step is filtering the liquid. We use several filters with different porosity and use vacuum to suck the

liquid through the series of filters. It speeds up the process and helps maintain the quality level.

Since we use toxic solvents you should use precautions as: air ventilation, active carbon filter, safety goggles. Store liquid in a safe place. Away from children and unauthorized personnel.

R-phrases for our coating are following:

R11,R45,R36/37/38,R48/20,R63,R65,R67

As you can see the coating is a dangerous chemical. It shouldn't be used without precautions!

If you are interested we can provide also all

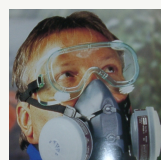
Process:

All parts that come in contact with coating should be from high quality stainless steel or polyamide plastic. Also silicone tubing is fine. All parts and also stainless steel airbrush is available (costs approx 100 €) from us. If you use different equipment results may vary from optimal. Coating should be done from left to right as shown on youtube video. And with newest formulation only 1 pass is enough! If you have nozzles opened 60%. In any case you will need to make your internal tests. After coating dry the drum with hot air gun.

necessary equipment. We just need to learn your quantity requirements.

Coating is packed in glass bottles that will prevent any leakage and evaporation. The storage time is not limited.

You need to keep coating away from heat sources and direct sunlight. And it doesn't have any expiration date. Shipping is only possible via truck! No air transportation possible!



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Coating procedure:

- Use isopropyl alcohol and clean the drum of any toner residue
- Coat the drum with 1-2 coats of our coating (depends of cartridge yield)
- Dry the drum with hot-air gun for 10-30 sec. at 180°C



Why recoat the drums ?

Economy (less than 0,1 €)

Ecology

Lower stocks

Quality