

# Troubleshooting Photo Emulsion

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## Emulsion washing off or breaking down in wash out.

Not just the bits you want to come out but all of it or more than the exposed part.

- Under exposure. Without enough light and for too short a time the emulsion does not fully bond and go hard during exposure. If your emulsion is totally washing out or falling off, your screen is definitely underexposed. If it's breaking down during printing this is also a common sign of under exposure.
- Water pressure is too high during wash out. Don't blast the emulsion out too quickly, turn down the pressure and keep the water flow or jet moving about the screen. Give the screen a little soak for 30 secs before starting the wash out.
- Water too hot.
- Screen not properly coated. Too thick a coating of emulsion causing thick or thin spots that have under or over exposed leading to washout problems (which you are then tempted to blast out.) For a nice smooth even coat make sure the edge of your scoop coater is in good condition. Print-Lab Pro Tip: use a sponge scouring pad to give your scoop coater a once over leaving a nice clean edge. If you can't get it smooth and blemish free then its time for a new one.
- Screen prep. Make sure to clean up your screen properly using a **Degreaser**. (**Greased Lightning**) Dirty or contaminated screens could add to emulsion problems. Be sure to fully rinse it off though. Coat the screen as soon as it is fully dry. This prevents dust and dirt settling back on your nice clean screen. If it is still a little damp the emulsion won't stick properly.
- Out of date or contaminated emulsion. Pro Tip: Check the manufacturers guidelines, then write a started by and use by date on your emulsion tub. We recommend you don't scrape unused emulsion back into the tub. It can get contaminated with dirt and dust and just helps toward deterioration of the product.
- Emulsion not fully dry before exposure. Resist the temptation to get your screen done asap. It might feel dry but may well not be. Ideally letting it cure for 24 hours is best.
- Emulsion not mixed properly. Too much water or not enough diazo, or not mixed well.

## Pin Holes and Air Bubbles in exposed screen.

- Dirt and dust on the screen during coating. Clean and prep screen properly. Once dry, coat before the dust can settle back on it.
- Air bubbles in emulsion. Let the emulsion settle for a few hours after mixing.
- Dirt or dust on transparency or glass during exposure. Keep your exposure area clean and dust free.

- Pin holes are hard to get rid of completely no matter how careful you are. If you do find some and the other tips don't work you can use some screen filler to block them, or like most people just use some screen tape to cover them. Place it on the print side. Just use clear packing tape or cellophane tape (Scotch tape)

### Premature stencil breakdown

- Under exposure. It might have looked good and somehow washed out ok to start with, but an under exposed screen will just not be as tough.
- Emulsion coating might be too thin. See the tips on coating and exposing your screen.
- Aggressive inks and aggressive cleaning. Most waterbased inks still contain some solvents which can contribute to premature screen breakdown. Especially if ink is left to dry on the screen. Good screen management helps. Clean gently. Sometimes ink hazing is confused with being stuck in the screen. A little hazing isn't really a problem, just don't over scrub it.

### Difficult washout.

- Over exposure. Too much light "cooking" the emulsion. This will make it hard to wash out. This can lead to the temptation of blasting the screen with a higher water pressure. All this will do is break down the screen or lead to a sawtooth or jagged edge on your stencil and losing detail.
- Possible fogged screen. Ensure correct storage of coated screen. Keep in a light proof area.
- Poor transparency to screen contact during exposure. Tape transparency to the screen or use extra weight to ensure contact.
- Transparency print out is not opaque enough
- Old Screens. Screens that have been left coated for long periods of time will be harder to work with. The chance of fogging and fluctuations in storage conditions can lead to exposure problems.

### Losing fine detail when you burn screens.

- The transparency may not be making good contact with the screen. Make sure you place the transparency with the print side next to the screen and weight it well enough to make good contact. A vacuum exposure unit is best, but if you don't have one of these you have to be more careful.
- The screen is over-exposed. If the exposure is too long, the fine detail will not wash out and will be lost.

- The light you are using to expose the screen is not angled correctly. The light source needs to be as straight on as possible, in other words, 90 degrees to the screen.
- The light source may be too weak. If you are using a weak light source and a long exposure there is more risk of ambient light or light scattering contaminating the exposure.

### **Emulsion breaks down during printing.**

- Emulsion coating too thin. (Apply thicker coating or coat both sides of screen.)
- Excessive Pressure on squeegee. Use less pressure when printing.

### **The screen is hard to reclaim.**

- The emulsion on the screen may be old. The longer the emulsion sits on your screen, the harder it is to reclaim.
- The reclaiming solution dried in the screen. Once the reclaiming solution dries on the screen, it becomes permanent and ruins the screen. Always be careful to wet the screen before you apply the reclaimer, keep it wet and work the reclaimer around on the screen with a brush or scrubbie.
- The emulsion may be uneven. If the emulsion is thick in spots, like around the edges, it may be hard to get all of the emulsion out. Though if it's only on the edges, it may not matter.
- You may not be using enough water pressure. Try using a pressure washer, or even try a coin-op DIY car wash.
- Ink may have dried in the screen. If the ink was not washed out thoroughly it may have dried in and blocked parts of the mesh. You can try a haze remover like Enviro Haze. But if the ink has really dried in there, the screen may be ruined.