

# USE INSTRUCTIONS



SPI Supplies  
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## SPI-Chem™ P-47 Scintillator Powder

A lot of end users seem to be fascinated with scintillator technology and wish to make their own coatings. So we have responded to that demand by offering as a powder the very same powder that is used in the making of what really has become famous in terms of reputation, namely, the SPI Supplies line of SEM scintillators.



Recipes are imprecise and there seems to be a number of variations to this basic standard recipe. The powder can indeed be deposited onto a glass substrate as the material was originally developed as a fast decay CRT phosphor. The material is often coated with  $\text{SiO}_2$  to improve powder flow and screening characteristics, which does help the material bind to the substrate better. We give just one such example below. A certain amount of trial and error may be needed to ultimately get the desired coating.

### Materials needed:

- Glass substrate thin coated with tin oxide or indium tin oxide (ITO).
- Methyl alcohol
- Sodium silicate binder or equivalent
- SPI-Chem™ P-47 Scintillator Powder

### Procedure:

- 1] A small amount of the [SPI-Chem™ P-47 Scintillator Powder](#) is suspended in methyl alcohol. This is then dropped by pipette onto the glass surface to be coated.
- 2] The substrate glass is then gently shaken to produce a nice looking uniform coating of the phosphor.
- 3] Following evaporation of the excess methyl alcohol, the coated glass is then baked in an oven at 200°C for at least 12 hours.
- 4] Spray a thin layer of binder (like sodium silicate in water) on the P47 coating. This will hold the particles in place and reduce the chances of peeling or movement of the coating while it is being irradiated.

We are not able to give assistance beyond this. SPI Supplies employs proprietary technology for the application of scintillator coatings to surfaces. When all else fails, consider purchasing one of our off-the-shelf SEM scintillators.

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