

USE INSTRUCTIONS



SPI Supplies
206 Garfield Avenue,
West Chester, PA 19380, USA

SPI-Chem Conductive Platinum Paint 04990-AB

The SPI-Chem™ Conductive Platinum Paint/Suspension was formulated to be an air-drying composition for applications where silver or other alternatives cannot be used so platinum represents a clear advantage.

Application of the product:

We have a number of customers who are using this product, but they have provided us with very little information concerning exactly how they are using it. As we understand it, most users are applying the paint as it is received, and the thinner is used only to replace evaporated solvent and to adjust the viscosity of the suspension. The paint should be dry to the touch in several minutes and dry enough to be fired or to be put into a vacuum in a few hours.

Air drying applications:

When the application calls for use of the product in an air-drying protocol, one needs only to apply a small quantity of the suspension, with the brush (or even a tooth pick). One should use good judgment in terms of drying time before insertion into a high vacuum or UHV system. Exposure to temperatures of 130°C will accelerate the evolution of the liquid carrier and exposure to temperatures of roughly 325°C will result in the decomposition of the small amount of organic binder present and also the gaseous products from that decomposition. The rate of heating from room temperature to 325°C should be not faster than 1°C per minute in order to avoid "bumping" of the film of (as yet unsintered) Pt solids.

Sintering of the Pt layer for high temperature applications:

The air dried Pt paint can be sintered in order to produce a layer that is more like the bulk properties of Pt. In an inert atmosphere for the Pt and also, one that would not cause problems to the substrate, heating up to and through 325°C is the first step and then heating can proceed at a faster rate, such as 10°C per minute up to and perhaps through 1000°C at which point the platinum should be expected to sinter into a continuous Pt coating. The preferred method would be to do the sintering in a vacuum furnace but any other oven with the appropriate inert atmosphere would work just as well.

In both instances, if there is evaporation of the carrier and it becomes necessary to dilute down the remaining suspension, be sure to use the special platinum paint thinner.