

0.05 μm Colloidal Silica Suspension, Water-Free (#180-22010)

Formulated for water sensitive materials, this polishing solution is ideal for applications requiring water-free polishing. The replacement of water with a glycol base inhibits oxidation of these materials during the final polishing step (Figure 1), including extended polishing times for EBSD.

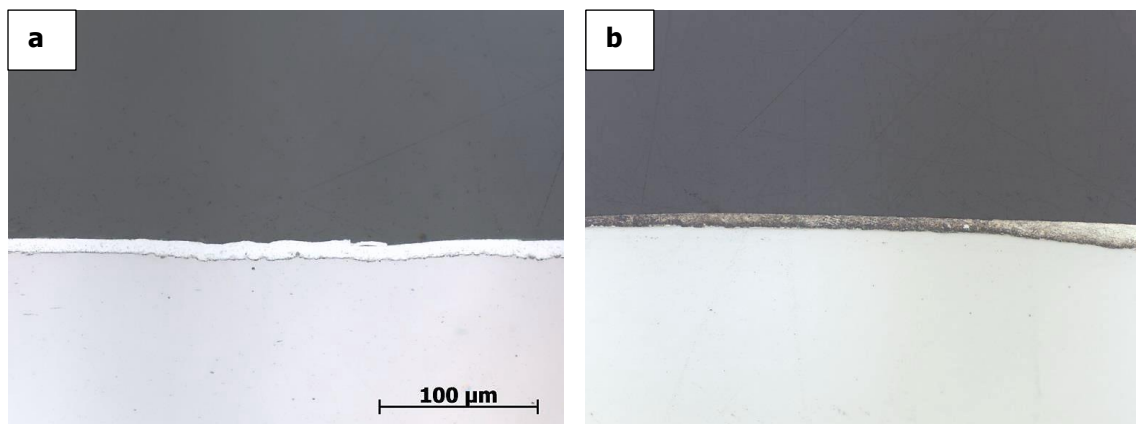


Figure 1: Zinc coating (a) prepared with water-free colloidal silica suspension, (b) prepared with standard colloidal silica suspension, Brightfield

It provides an excellent surface finish on many water sensitive sample materials, including, but not limited to, those listed in Table 1. This suspension may not work for all water sensitive materials; experimentation will be necessary to determine its effectiveness. For such applications, it is important to utilize polishing cloths engineered to withstand prolonged exposure to the chemical element (high pH) of this solution, such as Chem-Pol and Final A. These pads feature backings that resist peeling and produce minimal edge rounding in such applications.

Table 1: Water-Free Colloidal Silica Suspension Uses

Group	Examples	Recommended Cloths
Non-Metallic Materials	Ceramics, Crystals, Polymers	Chem-Pol, Final A, Final P
Metallic Materials	Zinc Coatings, Powder Metals, Some Base Metals	Chem-Pol, Final P

Warning! Refer to the SDS for information regarding hazards, recommended personal protective equipment, and handling. Due to the hazardous nature of the product, it is only available in 32 oz. (950 mL) containers.

Samples prepared with the water-free colloidal silica can be cleaned with water and micro organic soap (#148-10000), which was specially formulated to remove micro contaminants from sample preparation. Samples that are too sensitive to water to be cleaned this way can be soaked/rinsed in isopropyl alcohol.

Figures 1 through 3 are micrographs of samples prepared with 0.05 μm water-free colloidal silica suspension. These images were taken with the Zeiss AxioVert A1™ inverted microscope and AxioImager A2m™ upright microscope, AxioCam MRc 5™ digital camera, and AxioVision 4™ imaging software.

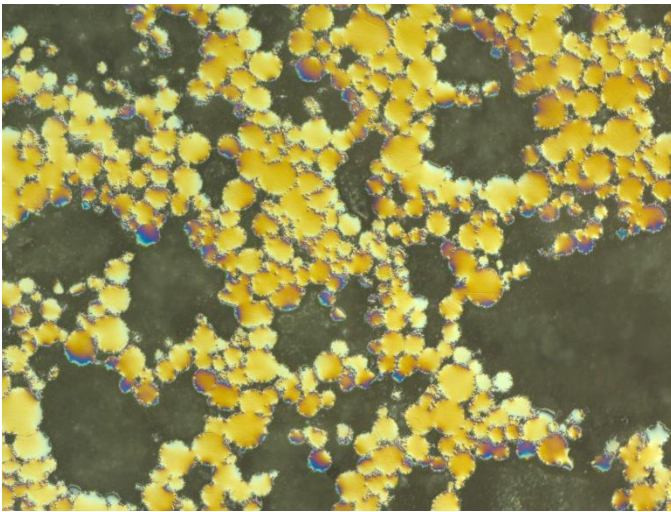


Figure 2: Ceramic powder, C-DIC

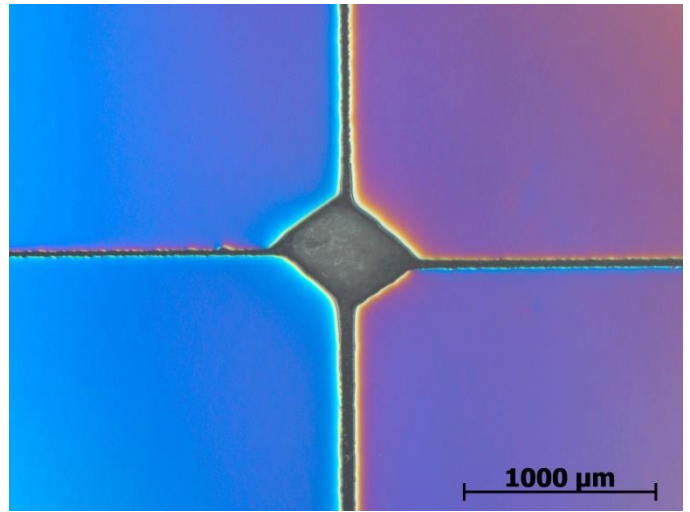


Figure 3: Beta barium borate crystal, C-DIC