0.05 µm Water-Free Colloidal Silica

Date: 05/2020, v1.0

Water-free colloidal silica (#180-22010) is ideal as a final polishing solution for water-sensitive materials. The replacement of water with a glycol base inhibits oxidation of water-sensitive materials during the final polishing step (Figure 1), including extended polishing times for EBSD.

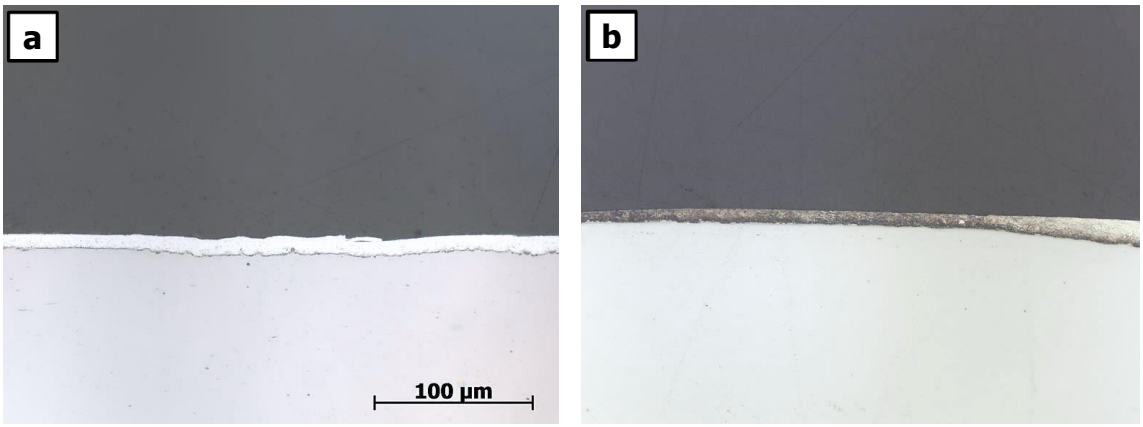

Figure 1: Zinc coating prepared with (a) water-free colloidal silica suspension and (b) standard colloidal silica suspension, Brightfield

This final polishing solution provides an excellent surface finish on many water-sensitive 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 high pH level 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	Material Examples	Recommended Cloths
Non-Metallic Materials	Ceramics, Crystals, Minerals, 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 is specially formulated to remove micro contaminants from sample preparation. Samples that cannot come into contact with water at all can be soaked or rinsed in isopropyl alcohol.

Figures 1 through 4 are micrographs of samples prepared with 0.05 µm water-free colloidal silica suspension. These images were taken with the AxioImager A2m™ upright microscope, AxioCam 506 color™ digital camera and ZEN core imaging software.

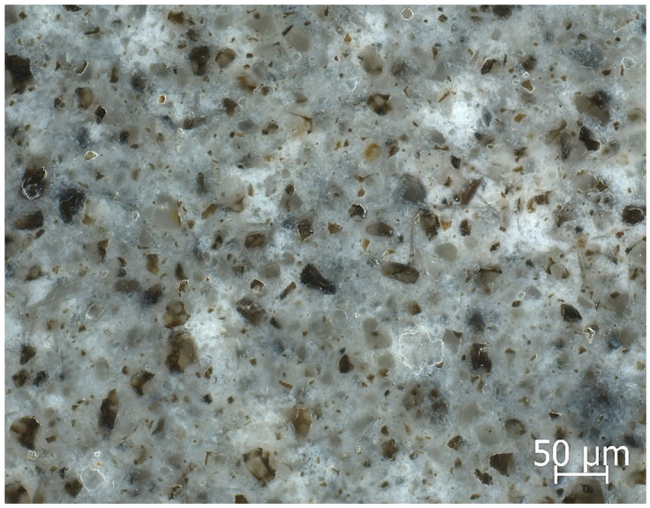

Figure 2: Cement, Darkfield

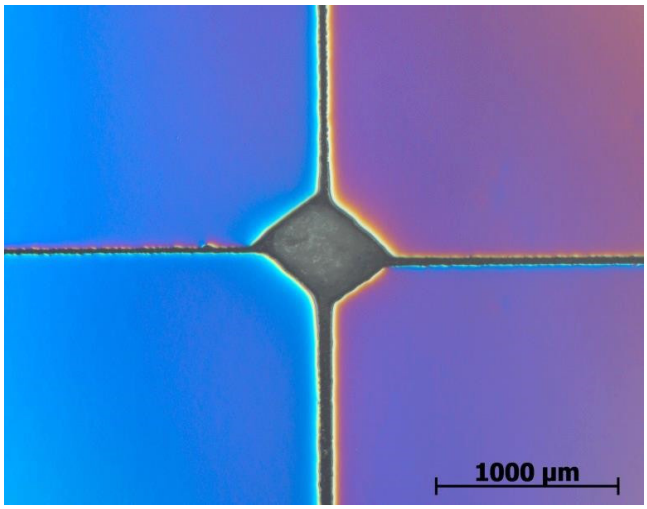

Figure 3: Barium borate crystal, C-DIC

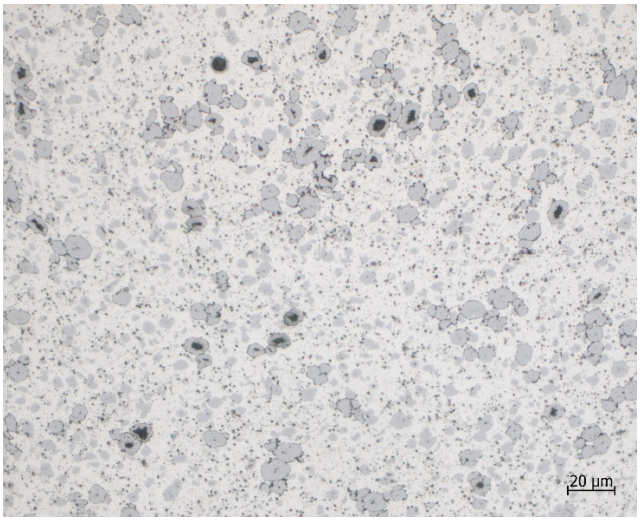

Figure 4: Aluminum calcium, Brightfield

www.alliedhightech.com
Allied High Tech Products, Inc.
Call for more information: 800.675.1118