

0.05 μm Water-Free Colloidal Silica

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Refer to the SDS document for additional safety information.



GHS08

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. Water-free colloidal silica should be stored at room temperature.

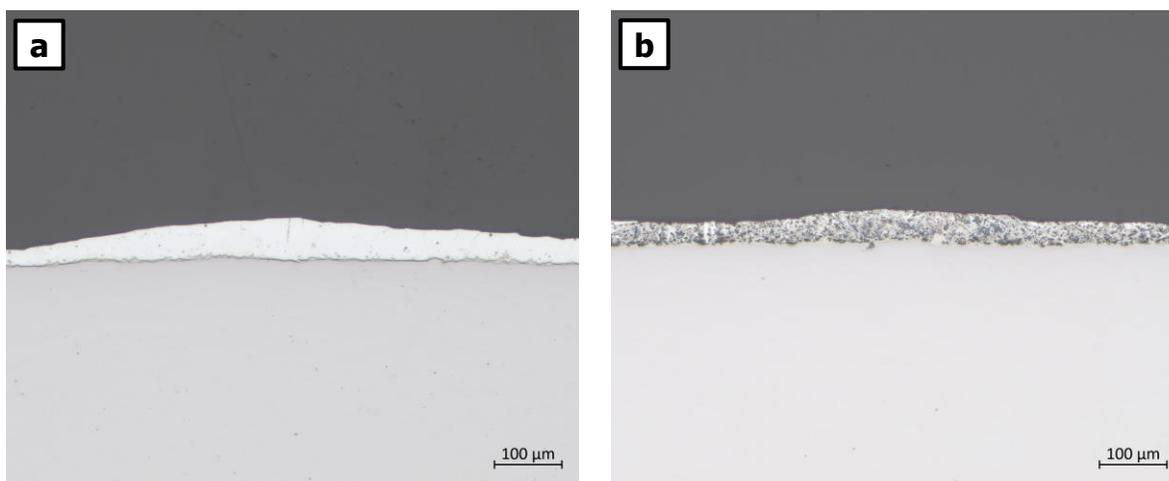


Figure 1: Zinc coating prepared with (a) water-free colloidal silica suspension and (b) standard colloidal silica suspension

This final polishing solution provides an excellent surface finish on many water-sensitive materials, including, but not limited to, those listed in Table 1. It is also important to utilize polishing cloths engineered to withstand prolonged exposure to the chemical composition and high pH level of this solution, such as Chem-Pol, Final A and Final P.

Since the abrasive can crystallize, do not let the cloth dry out. It is recommended to charge the cloth with sufficient water-free colloidal silica prior to polishing to prime and saturate the cloth with suspension so as not to polish dry. The most common dispensing parameters for water-free colloidal silica are 1-second-long pulses at 10 pulses per minute.

Clean the samples before and after polishing by soaking or rinsing them in isopropyl alcohol, and drying them with heat or clean air. This removes debris and abrasive particulates, and reduces the likelihood of scratches on samples due to abrasive contamination. After use, clean the cloth with sufficient water to remove the solution before storage to prolong cloth life.

Table 1: Water-Free Colloidal Silica Suspension Uses

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