

# SilcoTek® Coatings Versus Alloy C-22

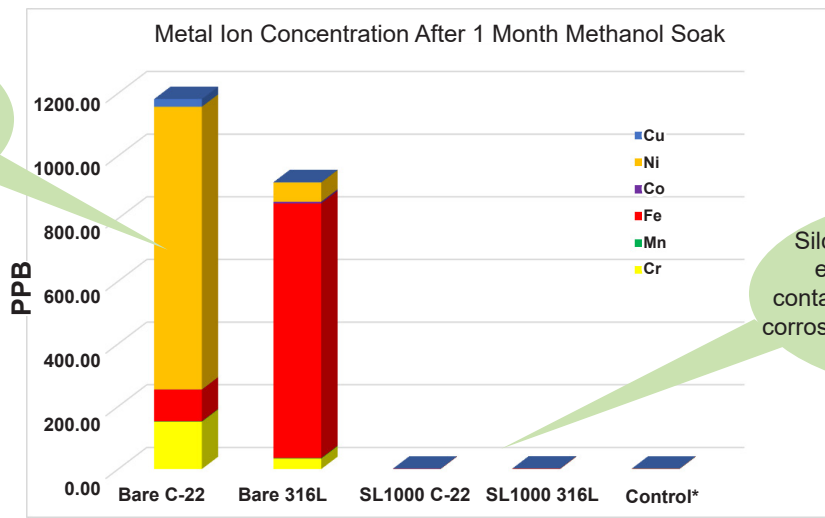


SilcoTek's chemical vapor deposition (CVD) process allows 316L stainless steel parts to perform at a higher level while operating at lower processing and maintenance coats.

Alloy C-22 is a common alternative to 316L stainless steel that boasts improved corrosion resistance. SilcoTek customers have indicated interest in a more effective solution to corrosion. SilcoTek performed Solvent Extraction Inductively Coupled Plasma Mass Spectroscopy (ICP-MS) in order to determine the effectiveness of our coatings against other common surfaces like 316L and Alloy C-22.

- Alloy C-22 and 316L SS show high ppb to low ppm metal concentrations.
- SilcoTek coated samples show low to no ppb metal concentrations, resulting in more effective corrosion protection.
- The Silcolloy-coated C22 outperformed the uncoated C-22 by 1000x.

After soaking in methanol for 30 days, the C-22 sample measured over 1000 ppb of harmful metal contamination.



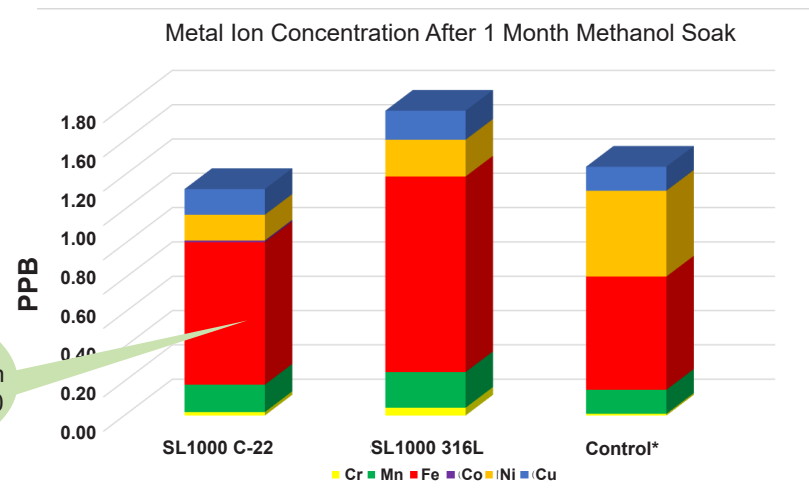
SilcoTek's Silcolloy coating eliminated over 99% of contamination, providing better corrosion protection on C-22 and even 316L SS.

**Image 1:**

This image shows the amount (PPB) of metal contamination found after soaking the samples in methanol for 30 days. The Silcolloy-coated C-22 outperformed the uncoated C-22 by 1000x.

Method- Solvent Extraction ICP-MS. Technique- Parts were soaked in methanol for 30 days to allow for measurable metal extraction. Samples were then analyzed by mass spectroscopy to investigate metal ions present in solution.

The most effective surface for preventing metal contamination is Silcolloy-coated C-22, ~1.20 ppb metal contamination.



**Image 2:**

Image 2 is an enlarged version of Image 1, showing the samples with the lowest metal contamination. Silcolloy-coated C-22 slightly outperforms 316L SS. Values of coated samples are within errors of measurement.

\* Control refers to a sample prepared identically to the other samples but without a metal coupon placed in the methanol.