

**Purpose:**

To quantify 21POLYPLUS's ability to encapsulate the CCA wood preservative chemicals used in marine treatments for lumber.

Preparation:

Four samples of 2.5 CCA treated lumber test strips approximately 2" x 1" x 10" in length were used in this test. Two of the wood samples (A & B) were coated with 21POLYPLUS and allowed to cure for 24 hours. The coated samples were provided by the manufacturer. The other two samples of treated wood (C&D) were left uncoated.

Four beakers were filled with tap water. Each of the four samples was placed in an individual beaker.

A fifth beaker was filled with tap water to serve as a control sample (Sample E) that could be tested should trace levels of arsenic or copper be found in the samples.

The four samples remained submerged in their beakers for 48 hours.

Test Procedure:

Two different tests were performed on the samples. In all tests, water temperature was approximately 24°C. One test was to determine if arsenic leached from the coated samples; the other to test for copper leachate.

Industrial Test Systems, Inc. of Rock Hill, SC, provided both test systems. All tests conformed to the instructions provided by Industrial Test Systems. The arsenic test procedure is capable of detecting minute traces of arsenic leachate. The limit of the test range is from 0.0 - >.5 mg/L.

The copper test system is capable of detecting trace copper between 0 – 2 ppm (ml/L).

Samples A & B were pulled from their beakers and tested individually for copper levels. Afterwards, the water from those beakers was co-mingled for the arsenic test.

Samples C & D were pulled from their beakers and tested individually for copper levels. Afterwards, the water from those beakers was co-mingled for the arsenic test.

Testing Results:

Test Sample	Arsenic ppm (ml/L)	Copper ppm (ml/L)
A	.005	0.00
B		0.00
C	>.5	+2.0
D		+2.0
E (control)*	.005	Not required.

* Given no trace of copper in Samples A or B, a copper test of Sample E was not required. However, since trace arsenic was found in the testing of Samples A & B, an arsenic test of Sample E was subsequently performed. Testing confirmed that the trace arsenic found in Samples A & B was carried by the tap water itself and no transfer from the samples themselves occurred.

Conclusion:

Based on the above testing, 21POLYPLUS should satisfy any mandate that requires total encapsulation of arsenic and copper, the two main elements used in CCA wood preservative. Applied properly, 21POLYPLUS will provide protection to marine structures and protect the environment against hazardous chemical leaching.