

## Applied Polymer Research Center

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# Test Report - Revised 10/10/2011 

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Sample Identification: Various
Project No.: 310-11 APRC
Date: October 10, 2011
Methodology: Specimens were washed with acetone prior to testing. Specimens were weighed, then immersed in the test solution at room temperature. After the specified time period, the samples were removed from the test solution, rinsed with distilled water, dried, weighed, and photographed. Flow-Aide solutions were prepared volume/volume using distilled water.

Test Results: Corrosion rates are tabulated on the next page. Photos of the tested specimens follow at the end of this report.

## Materials Tested:

Nickel: Alloy 200
Copper : Alloy 110, unpolished, $1 / 2$ hard
Brass: Alloy 260, unpolished, $1 / 2$ hard
Stainless steel: Type 304
The following materials had corrosion rates $\leq 0.02$ mil ( $\leq 0.00002$ inch) per 5 hours exposure in FlowAide 50/50 and 20/80. These materials had similar corrosion rates in Vinegar. The corrosion rates are negligible and at the error limit inherent in the measurements.

Copper : Alloy 110, unpolished, $1 / 2$ hard
Brass: Alloy 260, unpolished, $1 / 2$ hard
Stainless steel: Type 304
Nickel (Alloy 200) had corrosion rates $\leq 0.02$ mil per 5 hours exposure in FlowAide 50/50 and 20/80. This material was not tested in Vinegar. The corrosion rates are negligible and at the error limit inherent in the measurements.

Corrosion Rates as depth (mil $=0.001$ inch) of material loss in the specified time period.

|  | FlowAide 20/80 |  | FlowAide 50/50 |  | Vinegar |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Sample | 1 Hour <br> (mil) | 5 Hours <br> (mil) | 1 Hour <br> (mil) | 5 Hours <br> (mil) | 1 Hour <br> (mil) | 5 Hours <br> (mil) |
| Nickel | 0.01 | 0.01 | 0.00 | 0.02 |  |  |
| Copper | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Brass | 0.01 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 |
| Stainless <br> Steel | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 |

Nickel


Copper


Copper


Brass


Brass


Stainless Steel


Stainless Steel


