

## CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023

DateRun: 07/27/2023

Experimenters: Siddhant Trivedi

ClientType: Lab

ProjectNumber: Project #11

Substrates: Brass, Copper

PartType: Coupon

Contaminants: Rust/Scale

Cleaning Methods: Immersion/Soak

Analytical Methods: Visual

Purpose: To test the efficiency of 5% citric acid in removing rust from brass and copper coupons.

Experimental Procedure: Take 6 pre rusted brass and copper coupons and set them aside in trays.  
Take citric acid crystals in a beaker to make the 5%citric acid solution. Stir until the crystals completely dissolve.  
In this experiment,550 ml of the solution was prepared so 27.5g of citric acid crystals was used.  
Once the 5% citric acid is ready, immerse the brass/copper coupons in it and leave it for 10 min.  
After the 10 min, take out the coupons and give it a gentle wipe down with kimwipes to dry out the coupons of the citric acid .  
The initial visual reading would be a 5 so accordingly on how much you think the rust has been removed, give a reading from 1-5(1- being rust has been totally removed, 5-being no change)

Results: The result of this experiment was no change. We started with an initial rating of 5 and the final rating would be a 5 as well.

Summary:

Conclusion: The citric acid did not seem to remove any rust from the coupons. Possible solutions could be increase the concentration of citric acid or use external conditions like heat, ultrasonics.