CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 08/03/2020

Experimenters: Alicia McCarthy, Justin Kiander

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric, Visual

Purpose: The purpose of this experiment was to retest Micro 90 on aluminum coupons removing all three buffing compounds using heated ultrasonics.

Experimental Procedure: Three aluminum coupons were obtained for each of the three buffing compounds: red, blue, and white. A solution of Micro 90 was prepared to a concentration of 5% and heated to 120°F in an ultrasonic bath. Coupons were soiled with their respective buffing compounds and a soiled weight was obtained. Once solutions reach the proper temperature, coupons were submerged and heated ultrasonics was conducted for 15 minutes, with observations noted every 5 minutes. After 15 minutes had passed, coupons were allowed to air dry. Once dry, a clean weight was obtained. Effectiveness of Micro 90 was then determined.

Results:

Soil	Initial wt. of cont.	Final wt. of cont.	% Cont. Removed	%AVG per soil	%AVG Total
Red	0.0117	-0.0145	223.93	357.26	646.91
	0.0048	-0.021	537.5		
	0.0087	-0.0183	310.34		
Blue	0.0091	-0.0204	324.18	292.44	
	0.0146	-0.0226	254.79		
	0.0121	-0.024	298.35		
White	0.0011	-0.0212	2027.27	1291.04	
	0.003	-0.02	766.67		
	0.0024	-0.0235	1079.17		

Summary:

Substrates:	Aluminum
Contaminants:	Buffing/Polishing Compounds

Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
International Products Corporation	Micro 90 Conc.	5%	646.91	☐	Reevaluation of Micro 90 at 5% concentration has shown that the solution is too caustic (standard pH of Micro 90 at 2% concentration is 9, pH at 5% is 11). Micro 90 at 5% is stripping aluminum, but it does not damage brass or copper at this concentration.

Conclusion: For all three soils, Micro 90 at a 5% concentration in an ultrasonics bath at 120°F was able to remove the buffing compounds and any additional soils present on the aluminum coupons. The next step would be to utilize Micro 90 with other high performing cleaners to test on parts provided by the company.