CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 07/21/2020

Experimenters: Alicia McCarthy, Nicole Kebler

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Aluminum, Copper

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric, Visual

Purpose: The purpose of this experiment was to test the effectiveness of heated ultrasonics in removing the red, white, and blue buffing compounds from aluminum and copper coupons using the cleaner Micro 90.

Experimental Procedure: Nine aluminum and nine copper coupons were obtained, three for each soil: the red, white, and blue buffing compounds. The Micro 90 cleaner was prepared as a 5% concentration solution and allowed to reach a temperature of 120°F in an ultrasonic bath. Coupons were soiled with their respective buffing compounds and a soiled weight was obtained. Coupons were then submerged into the heated ultrasonic bath for five minutes. After five minutes, coupons were allowed to air dry, and a clean weight was obtained. Effectiveness of Micro 90 in cleaning each of the buffing compounds was then determined.

Results:

Substrate	Buffing Compound	Initial wt. of cont.	Final wt. of cont.	% Cont. Removed	%AVG per soil	%AVG total
Aluminum	Red	0.0297	0.012	59.6	72.65	77.40
		0.021	0.0066	68.57		
		0.0284	0.0029	89.79		
	White	0.0329	0.0073	77.81	77.57	
		0.0383	0.0099	74.15		
		0.0473	0.0091	80.76		
	Blue	0.0728	0.0128	82.42	81.97	
		0.0443	0.0097	78.1		
		0.0473	0.0069	85.41		
Copper	Red	0.009	-0.0025	127.78	110.76	106.09
		0.0122	0.0001	99.18		
		0.0188	-0.001	105.32		
	White	0.0093	-0.0001	101.08	108.69	
		0.009	-0.001	111.11		
		0.0036	-0.0005	113.89		
	Blue	0.0282	0.0034	87.94	98.81	
		0.0237	-0.0012	105.06		
		0.0262	-0.0009	103.43		

Summary:

Substrates:	Aluminum, Copper
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
International Products Corporation	Micro 90 Conc.	5%	77.40	☐	For aluminum coupons, no visible residue left behind
International Products Corporation	Micro 90 Conc.	5%	106.09	☑	For copper coupons, some visible residue left behind.

Conclusion: Micro 90 at a 5% concentration in a 120°F ultrasonic bath removed all three buffing compounds at a higher average on copper substrates. Red buffing was removed at an average of 110.76%, white at 108.69%, and white at 98.81% for a total average removal of 106.09%. Averages over 100% means the cleaner removed excess soil still present on the coupons before experimentation.