CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 05/23/2021

Experimenters: Anjali Bhagat

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Greases

Cleaning Methods: Manual Wipe

Analytical Methods: Gravimetric

Purpose: To test the effectiveness of Purple Tiger reformulations in cleaning DCC-17 from aluminum substrates.

Experimental Procedure: en reformulated Purple Tiger products were created and tested; PT 2021, PT 2021A, AHS, GSC, Conc, Conc A, Conc AL, Conc 10%, Conc A 10%, and Conc AL 10%. Three aluminum coupons were obtained and weighed for each of the reformulation products being tested. Coupons were then soiled with DCC-17 and allowed to air dry for 24 hours. After 24 hours of aging, a dirty weight was recorded. Coupons were then loaded onto a Gardner-scrub Straight Line Wash unit set to 10 cycles per minute for 20 cycles. Three pumps of cleaner were applied to each of the respective coupons and four pumps of cleaner were applied to the scrubbing blocks. The cleaner was allowed to sit for 30 seconds. Following the 30 seconds of resting, the SLW unit was run to simulate scrub cleaning. Coupons were then removed from the machine and allowed to dry in air for 24 hours. After the drying period, coupons were weighed, and a final clean weight was recorded. Effectiveness of the cleaners was determined.

Results:

Cleaner	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG
PT 2021	0.1075	0.0082	92.37	72.21
	0.3294	0.0393	88.07	
	0.1766	0.1127	36.18	
PT 2021 A	0.0958	0.0043	95.51	93.03
	0.118	0.0047	96.02	
	0.1778	0.0221	87.57	
AHS	0.1574	0.0222	85.9	90.48
	0.338	0.0415	87.72	
	0.9716	0.0211	97.83	
GSC	0.3677	0.0344	90.64	90.75
	0.6055	0.0862	85.76	
	0.4003	0.0167	95.83	
Concentration	0.3032	0.1006	66.82	83.57
	0.5648	0.0482	91.47	
	0.4369	0.0331	92.42	
Concentration A	0.553	-0.0054	100.98	91.91
	0.4337	0.0474	89.07	
	0.4452	0.0637	85.69	
Concentration AL	0.4341	0.0217	95	80.57
	0.361	0.0306	91.52	
	0.3069	0.1375	55.2	
Conc 10%	0.1375	0.0041	97.02	95.72
	0.2092	0.0059	97.18	
	0.0895	0.0063	92.96	
Conc A 10%	0.1209	0.003	97.52	96.13
	0.092	0.0032	96.52	
	0.1077	0.0061	94.34	
Conc AL 10%	0.2113	0.006	97.16	94.78
	0.1881	0.007	96.28	
	0.1143	0.0104	90.9	

Summary:

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Conclusion: Concentration A 10% and Concentration 10% were the most effective reformulations to clean DCC-17 from aluminum substrates, removing an average of 96.13% and 95.72%. The Concentration AL 10% reformulation was also effective with an average of 94.78% removing power. Next steps are to send the data to the company for further evaluation.