CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2023
DateRun:	04/11/2023
Experimenters:	Alicia McCarthy, Amelia Wagner, Dylan Labonte
ClientType:	Lab
ProjectNumber:	Project #6
Substrates:	Stainless Steel
PartType:	Part
Contaminants:	Greases
Cleaning Methods:	Vacuum Cycle Nucleation
Analytical Methods:	Gravimetric, Visual
Purpose:	To determine the efficacy of aqueous cleaners compared to water utilizing VCN equipment.
Experimental Procedure:	Eighteen pre weighed stainless steel coupons were used, three per soil per cleaner. Half of the coupons were soiled by swabbing the bottom third of the coupons with J1 grease, while the other half of the coupons were soiled with J2 grease. The dirty weights of all coupons were then recorded and visual rankings according to the key shown below were recorded. The coupons were then subjected to a one-minute heated cycle at 140 degrees F in the VCN using water, Alcojet 1% concentration, and LF2100 1% concentration. The coupons were then removed and left to air dry overnight. The next day the clean weights of the coupons were recorded and visual rankings weer recorded.

Visual Rankings Key

1= 100% of soil removed

2= 75% of soil removed

3= 50% of soil removed

4= 25% of soil removed

5= 0% of soil removed

Results:

Cleaner	soil	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
Water	J1	0.4213	0.0336	92.02	79.01	80.59
		0.3543	0.0553	84.39		
		0.3507	0.1381	60.62		
	J2	0.7689	0.1172	84.76	82.16	
		1.0577	0.2377	77.53		
		1.0368	0.1639	84.19		
Alcojet 1%	J1	0.1703	0.0001	99.94	92.33	89.58
		0.7401	0.0674	90.89		
		0.7541	0.1045	86.14		
	J2	0.9003	0.1824	79.74	86.84	
		1.0877	0.1512	86.10		
		0.9777	0.0521	94.67		
LF2100 1%	J1	0.4414	0.0673	84.75	74.63	82.98
		0.3073	0.0926	69.87		
		0.3941	0.1211	69.27		
	J2	0.6453	0.0583	90.97	91.33	
		0.7435	0.0999	86.56		
		0.8345	0.0296	96.45		

Cleaner	soil	Dirty Visual	Clean Visual	AVG Clean Visual	AVG Overall
Water	J1	5	3	3.5	3.92
		5	3.5		
		5	4		
	J2	5	4	4.33	
		5	4.5		
		5	4.5		

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Alcojet 1%	J1	5	1	2.33	2.92
		5	3		
		5	3		
	J2	5	4	3.5	
		5	4		
		5	2.5		
LF2100 1%	J1	5	4	3.83	3.08
		5	4		
		5	3.5		
	J2	5	2	2.33	
		5	2.5		
		5	2.5		

Summary:

Substrates:	Stainless Steel				
Contaminants:	Greases				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Water	Water	100	80.00	☐	
Alconox Inc	Alcojet	1	90.00	☑	
International Products Corporation	LF 2100 (Liquid Foam Cleaner)	1	83.00	☑	

Conclusion:

Water is shown to be effective in removing both J1 grease and J2 grease from stainless steel however, the data collected from the coupons cleaned with water includes an outlier. Alcojet 1% concentration is an effective cleaner in removing both soils from stainless steel. LF2100 1% is effective in removing J2 grease but not effective in removing J1grease from stainless steel.