CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 01/06/2020

Experimenters: Nicole Kebler

ClientType: Metal Finishing

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate cleaners removing vanishing oil on TURI provided steel coupons.

Experimental Procedure: Three coupons per cleaner were soiled with vanishing oil using a swab. Initial weights were recorded, then soiled weights were taken. The coupons were immersed in the cleaners for 15 minutes without agitation with observations every five minutes. Aqueous solutions (#1-5) were given a 5-minute DI water rinse cycle before drying. Final weights, pictures and observations were taken after drying.

Results: Gravimetric:

Cleaner	Initial wt. of cont.	Final wt. of cont.	%Cont. Removed	Average
1	0.0158	0.0055	65.19	62.13
	0.0194	0.0103	46.91	
	0.0385	0.0099	74.29	
2	0.0226	0.0092	59.29	71.92
	0.0377	0.0081	78.51	
	0.0295	0.0065	77.97	
3	0.0403	0.0056	86.10	66.33
	0.0333	0.0122	63.36	
	0.0854	0.0431	49.53	
4	0.0372	0.0070	81.18	87.33
	0.0214	0.0024	88.79	
	0.0263	0.0021	92.02	
5	0.0395	0.0061	84.56	75.64
	0.0363	0.0069	80.99	
	0.0347	0.0134	61.38	
6	0.0582	0.0161	72.34	46.01
	0.0346	0.0280	19.08	
	0.0341	0.0182	46.63	

Visual Observations and Additional Notes:

Inconsistencies with contaminant removal may be due to the level of contamination prior to cleaning. Initials weights were taken again after cleaning coupons. Heat improved the over visual removal of the vanishing oil compared to unheated immersion.

Summary:

Substrates:	Steel				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
International Products Corporation	Micro 90 Conc.	2%	62.13	☐	
Brulin Corporation	Aquavantage 1400	5%	71.92	☐	
Alconox Inc	Alconox	1%	66.33	☐	
Alconox Inc	Liquinox	1%	87.33	☑	
Gemtek Products		20%	75.64	☐	

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	SC 1000 Aqueous Cleaner Concentrate				
JR Hess & Co., Inc.	Sta-Sol ESS 160	100%	46.01	☐	

Conclusion: Almost all of the cleaners showed visual effectiveness, but only Liquinox was considered effective based on TURI labs' internal effectiveness percentage (85%) with the understanding that equipment will play a role in increasing effectiveness. Next step will be to run heated immersion at a higher temperature based on vendor recommendations.