CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023

DateRun: 10/11/2023

Experimenters: Alexander Symko, Amelia Wagner

ClientType: University

ProjectNumber: Project #2

Substrates: Aluminum

PartType: Coupon

Contaminants: Greases

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of previously identified solvents in removing the royco grease soil from aluminum coupons.

Experimental Procedure: Four solvents were chosen using previous testing data on their performance for removing other waxes and greases. Three pre weighed aluminum coupons were assigned to each solvent for each substrate for a total of 12 aluminum coupons. The coupons were soiled with the royco 27A grease soil (about 0.5 grams) on the bottom third of the coupons using a swab. After soiling, the dirty weights of the coupons were recorded. The coupons were then subjected to 20 mins of unheated ultrasonics in their respective cleaners. The coupons were left to air dry overnight before the clean weights were recorded.

Results:

Cleaner	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG
1-Propanol	0.0864	0.0040	95.37	97.52
	0.0767	0.0005	99.35	
	0.0650	0.0014	97.85	
Thiophene	0.0627	0.0010	98.41	98.30
	0.0869	0.0004	99.54	
	0.0428	0.0013	96.96	
1-Butanol	0.0383	0.0008	97.91	98.58
	0.0295	0.0003	98.98	
	0.0776	0.0009	98.84	
Dowanol PnBGE	0.0499	0.0010	98.00	98.20
	0.0452	0.0006	98.67	
	0.0631	0.0013	97.94	

Summary:

Conclusion: 1-Propanol, Thiophene, 1-Butanol, and Dowanol PnBGE are all effective cleaners in removing both the royco 27A grease soil and the Glyconol wax soil from either substrate.