CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 06/18/2024

Experimenters: Tatyanna Moreland Junior, Nasser Anise

ClientType: Lab

ProjectNumber: Project #8

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Lubricating/Lapping Oils, Oil

Cleaning Methods:

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of SB-27 and SB-32 in removing soluble oil #35 and mobil DTE from stainless steel coupons as a potential replacement for TCE with a heated immersion cleaning method.

Experimental Procedure: 12 stainless steel coupons were used for both cleaners being tested, for a total of 6 coupons per cleaner. The initial weights of each coupon were recorded. The bottom third of every coupon was soiled by applying the contaminate with a swab. The dirty weights of each coupon were then recorded. The coupons were then subjected to heated immersion at 125 degrees Fahrenheit in the cleaners with a 240 RPM spin for 10 minutes. After the coupons were cleaned, they were left to air-dry overnight. The next morning, the clean weights of each coupon were taken.

Results:

Cleaner	Soil	Coupon #	Initial wt of cont.	Final wt of cont.	%Cont Removed	Average % Removal	Average Cleaner %
SB-27	Soluble Oil # 35	2	0.0118	0.0017	85.59322034	92.01	90.40
		66	0.0635	0.0007	98.8976378		
		67	0.1204	0.0102	91.5282392		
	Mobile Oil	36	0.0201	0.0017	91.54228856	88.80	
		57	0.0268	0.0035	86.94029851		
		59	0.0356	0.0043	87.92134831		
SB-32	Soluble Oil # 35	5	0.044	0.0034	92.27272727	89.01	89.15
		9	0.0805	0.0053	93.41614907		
		28	0.06	0.0112	81.33333333		
	Mobile Oil	34	0.0491	0.0035	92.87169043	89.29	
		54	0.0376	0.0036	90.42553191		
		55	0.0376	0.0058	84.57446809		

Summary:

Substrates:	Stainless Steel
Contaminants:	Lubricating/Lapping Oils, Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
TURI Cleaning lab	SB-27	70 percent t-Butyl Acetate, 30 percent Benzyl Alcohol	90.40	☑	
TURI Cleaning lab	SB-32	81 percent Ethyl Lactate, 19 percent Propylene Carbonate	89.15	☑	

Conclusion: Overall, the cleaners did an effective job removing the contaminants.