

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 10/23/2024

Experimenters: Tatyanna Moreland Junior

ClientType: Lab

ProjectNumber: Project #8

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Greases

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of SB-31 (t-Butyl Acetate 70% (CAS No: 540-88-5) and a mixture of (79% EEP + 7% Ethyl Lactate (CAS No: 97-64-3) + 14% t-Butyl Acetate 70% (CAS No: 540-88-5)) in removing lapping compound from stainless steel coupons as a potential replacement of TCE with a heated ultrasonic cleaning method.

Experimental Procedure: Three stainless steel coupons were used for each cleaner and soil combination, making a total of twelve coupons. The initial weights of each coupon were recorded. less than 0.1 g of each contaminant was added to the bottom third of the coupon with a swab, and the dirty weights of each coupon were then recorded. The coupons were then subjected to heated ultrasonics in the cleaner for 15 minutes at a temperature of 100 °F. After the coupons were cleaned, they were left to air dry overnight, and clean weights of each coupon were taken the following day.

Cleaner	Soil	Initial weight of content	Final weight of content	Percent Content Removed	Average Percent Removal	Average Cleaner Percent
SB-31	Dow Corning High Vacuum Grease	0.0852	0.0044	94.84	94.43	86.63
		0.0894	0.006	93.29		
		0.06	0.0029	95.17		
	Apiezon Grease Type M	0.0207	0.0074	64.25	78.83	
		0.0462	0.0083	82.03		
		0.0306	0.003	90.20		
MIXTURE	Dow Corning High Vacuum Grease	0.0474	0.0218	54.01	78.87	83.72
		0.0686	0.0069	89.94		
		0.0626	0.0046	92.65		
	Apiezon Grease Type M	0.0531	0.0056	89.45	88.58	
		0.0437	0.0055	87.41		
		0.0476	0.0053	88.87		

Summary:	Substrates:	Stainless Steel				
	Contaminants:	Greases				
	Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
	TURI Cleaning lab	SB-31		86.63	<input checked="" type="checkbox"/>	

Conclusion: SB-31 was effective for Dow Corning, and the mixture was effective for Apiezon. Another test would need to be done to verify the cleaner's effectiveness for the opposite contaminant.