CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023

DateRun: 05/23/2023

Experimenters: Amelia Wagner

ClientType: Lab

ProjectNumber: Project #8

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Greases, Lubricating/Lapping Oils, Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of SB-33 (a D limonene and Dimethyl Glutarate mixture) and SB-31 (a Benzyl Alcohol and Ethyl Lactate miscture) in removing several production oils and greases from stainless steel coupons as a potential replacement for TCE unheated immersion cleaning method.

Experimental Procedure: Three stainless steel coupons were used for each of the two soils being tested against both cleaners for a total of 12 coupons. The initial weights of each coupon were recorded. The bottom third of every coupon was soiled by applying the corresponding soil with a swab. The dirty weights of each coupon were then recorded. The coupons were then subjected unheated immersion in SB-33 and SB-31 with the stir bar at 200rpm for 15 mins. The next morning, the clean weights of each coupon were taken

Soil	Use	CAS
Hocut 795	Metalworking Fluid	78-96-6, 101-83-7, 10043-35-3, 2634-33-5
RI 780	Corrosion Inhibitor	64742-88-7

Results:

Cleaner	Soil	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
SB-33	Hocut 795	0.0248	0.0053	78.63	73.09	79.60
		0.0521	0.0051	90.21		
		0.0113	0.0056	50.44		
	RI 780	0.0205	0.0039	80.98	86.10	
		0.0169	0.0002	98.82		
		0.0186	0.0040	78.49		
SB-31	Hocut 795	0.0728	0.0375	48.49	38.64	59.07
		0.0352	0.0331	5.97		
		0.0799	0.0308	61.45		
	RI 780	0.0286	0.0045	84.27	79.49	
		0.0299	0.0033	88.96		
		0.0236	0.0082	65.25		

Summary:

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

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
TURI Cleaning lab	SB-33	100%	73.00	☑	on soil Hocut 795
TURI Cleaning lab	SB-33	100%	86.00	☑	on soil RI 780
TURI Cleaning lab	SB-31	100	38.00	☐	on soil Hocut 795
TURI Cleaning lab	SB-31	100	79.00	☐	on soil RI 780

Conclusion: SB-33 is an effective alternative to TCE in removing Hocut 795 and RI 780 using unheated immersion method. SB-31 is an effective alternative to TCE in removing RI 780 using unheated immersion method.