CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023

DateRun: 08/03/2023

Experimenters: Tatyanna Moreland Junior

ClientType: Lab

ProjectNumber: Project #8

Substrates: Brass

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of SB-11 (46% Ektapro EEP 54% Benzyl Benzoate), SB-22 (79% Ektapro EEP 14% t-butyl acetate 7% propylene carbonate), SB-24 (92% Ektapro EEP 8% t-butyl acetate). and SB-32 (81% ethyl lactate 19% propylene carbonate) in removing production oils from brass coupons as a potential replacement for TCE unheated immersion cleaning method.

Experimental Procedure: Three brass coupons were used for each cleaner for a total of twelve coupons. The initial weights of each coupon were recorded. The bottom third of every coupon was soiled by applying Mobil Vactra Oil #2 with a swab. The dirty weights of each coupon were then recorded. The coupons were then subjected unheated immersion in SB-11, SB-22, SB-24, and SB-32 with the stir bar at 240rpm for 15 mins. After the coupons were cleaned they were left to air dry over night. The next morning, the clean weights of each coupon were taken.

Results:

Cleaner	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG
SB-11	0.1465	0.0334	77.20	85.93
	0.1719	0.0084	95.11	
	0.2442	0.0355	85.46	
SB-22	0.1282	0.0023	98.21	98.77
	0.1368	0.0025	98.17	
	0.1635	0.0001	99.94	
SB-24	0.1493	-0.0092	106.16	103.95
	0.2254	-0.0080	103.55	
	0.2023	-0.0043	102.13	
SB-32	0.2024	0.0909	55.09	69.97
	0.0848	0.0217	74.41	
	0.0541	0.0106	80.41	

The coupons cleaned with SB-24 had lower clean weights than initial weights, this could be due to the solvent stripping the brass coupons.

The soil separated in SB-22 and SB-32, the soil dissolved in SB-11 and SB-24.

Summary:

Substrates:	Brass				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
TURI Cleaning lab	SB-11	46% Ektapro EEP 54% Benzyl Benzoate	86.00	☑	
TURI Cleaning lab	SB-22	79% Ektapro EEP 14% t-butyl acetate 7% propylene carbonate	99.00	☑	
TURI Cleaning lab	SB-24	92% Ektapro EEP 8% t-butyl acetate	103.00	☐	Potentially stripped brass coupons
TURI Cleaning lab	SB-32	81% ethyl lactate 19% propylene carbonate	70.00	☐	

Conclusion: SB-11 and SB-22 are effective cleaners in removing production oil from brass coupons using unheated immersion. SB-32 is a somewhat effective cleaner in removing production oil from brass coupons using unheated immersion. SB-24 should not be used on brass due to the potential of stripping the substrate.