CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 03/01/2024

Experimenters: Tatyanna Moreland Junior

ClientType: Lab

ProjectNumber: Project #8

Substrates: Brass, Copper

PartType: Coupon

Contaminants: Greases

Cleaning Methods:

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of SB-2, SB-11, SB-22, and SB-23 in removing Slide Gel No. 7 from copper and brass coupons as a potential replacement for TCE with a heated ultrasonic cleaning method.

Experimental Procedure: Three copper and brass coupons were used for each cleaner being tested, for a total of 12 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 ultrasonic at 140 degrees Fahrenheit in the cleaners for 15 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:

Substrate	Cleaner	Coupon #	Initial wt of cont.	Final wt of cont.	%Cont Removed	Average % Removal
Copper	SB-2	16	0.0582	0.0583	-0.17	1.84
		21	0.0616	0.0599	2.76	
		27	0.0582	0.0565	2.92	
	SB-11	2	0.0609	0.0547	10.18	35.64
		29	0.0685	0.0263	61.61	
		39	0.0763	0.0495	35.12	
	SB-22	16	0.0836	0.0086	89.71	73.96
		17	0.0431	0.0212	50.81	
		40	0.0354	0.0066	81.36	
	SB-23	11	0.08	0.0154	80.75	87.79
		15	0.0677	0.008	88.18	
		25	0.0665	0.0037	94.44	
Brass	SB-2	11	0.036	0.0792	-120.00	-14.96
		23	0.0857	0.0328	61.73	
		34	0.047	0.0407	13.40	
	SB-11	9	0.0472	0.0530	-12.29	33.10
		15	0.0743	0.0430	42.13	
		18	0.0380	0.0116	69.47	
	SB-22	2	0.0400	0.0118	70.50	43.75
		5	0.0784	0.0270	65.56	
		14	0.0332	0.0348	-4.82	
	SB-23	10	0.0708	0.0319	54.94	18.38
		17	0.0822	0.0522	36.50	
		25	0.0270	0.0368	-36.30	

Summary:

Substrates:	Brass, Copper				
Contaminants:	Greases				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
TURI Cleaning lab	SB-2	100	-7.00	☐	
TURI Cleaning lab	SB-11	100	34.00	☐	
TURI Cleaning lab	SB-22	100	59.00	☐	
TURI Cleaning lab	SB-23	100	53.00	☐	

Conclusion:

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Overall, the cleaners did not do an effective job removing the contaminants; all coupons were wet with cleaner and/or contaminant after air drying. Copper coupons that were cleaned with SB-22 and SB-23 were less wet but the latter seemed to be more effective.