CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2024

DateRun: 02/26/2024

Experimenters: Tatyanna Moreland Junior

ClientType: Lab

ProjectNumber: Project #8

Substrates: Brass, Copper

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of SB-2, SB-11, SB-22, and SB-23 in removing Honing Oil from copper and brass coupons as a potential replacement for TCE with an unheated 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 unheated ultrasonic 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 weight of cont.	Final weight of cont.	%Cont Removed	Average % Removal
Copper	SB-2	21	0.0429	0.0566	-31.93	-276.87
		25	0.0167	0.0632	-278.44	
		27	0.0168	0.1042	-520.24	
	SB-11	15	0.0658	0.0537	18.39	-73.92
		16	0.0271	0.0794	-192.99	
		39	0.0333	0.049	-47.15	
	SB-22	11	0.0688	0.0064	90.70	91.86
		16	0.0275	0.0018	93.45	
		17	0.0257	0.0022	91.44	
	SB-23	2	0.0349	0.0041	88.25	89.90
		29	0.0376	0.0048	87.23	
		40	0.0536	0.0031	94.22	
Brass	SB-2	2	0.0488	0.0481	1.43	-36.45
		5	0.0298	0.0369	-23.83	
		23	0.0284	0.0531	-86.97	
	SB-11	10	0.0463	0.0324	30.02	35.72
		11	0.0274	0.0216	21.17	
		17	0.0536	0.0236	55.97	
	SB-22	9	0.0271	0.004	85.24	87.32
		15	0.0565	0.0059	89.56	
		34	0.0444	0.0057	87.16	
	SB-23	14	0.0244	0.0013	94.67	78.95
		18	0.0214	0.005	76.64	
		25	0.0148	0.0051	65.54	

Summary:

Substrates:	Brass, Copper				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
TURI Cleaning lab	SB-2	100	-157.00	☐	
Chem Tech Solutions	1050 Magic	100	-19.00	☐	
TURI Cleaning lab	SB-22	100	90.00	☑	

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TURI Cleaning lab	SB-32	100	84.00	☑	

Conclusion: SB-2 and SB-11 did not dry properly overnight, and in some cases, their final contents were higher than their initials. SB-22 and SB-23 seemed like effective alternatives. Further testing can be done to create the ideal range of cleaning time and contaminants added.