

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023
 DateRun: 12/20/2023
 Experimenters: Amelia Wagner
 ClientType: Brass Instrument Manufacturer
 ProjectNumber: Project #2
 Substrates: Brass
 PartType: Coupon
 Contaminants: Greases, Lubricating/Lapping Oils, Oil
 Cleaning Methods: Ultrasonics
 Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of aqueous and non aqueous cleaners in removing a variety of oil and grease soils from brass.

Experimental Procedure: Eighteen brass coupons, three per soil per cleaner, were weighed to record their initial weights. The coupons were then soiled with their respective soils; LMKT lapping compound, Honing oil, and slide gel lubricant. About 0.5 grams of each soil was spread on the bottom third of each coupon with a swab. The dirty weights of the coupons were then recorded. The coupons were then subjected to 15 minutes of heated ultrasonics at 140 F in their respective cleaners. Once cleaned, the coupons were left the air dry over night. The next day, the final weights of the coupons were recorded.

Cleaner	soil	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
Surface Cleanse 930 10%	LMKT Lapping Compound	0.0173	0.0148	14.45	-25.43	-154.90
		0.0160	0.0367	-129.38		
		0.0189	0.0116	38.62		
	Honing Oil	0.0103	0.0135	-31.07	-345.12	
		0.0053	0.0346	-552.83		
		0.0068	0.0375	-451.47		
	Slide Gel	0.0188	0.0282	-50.00	-44.91	
		0.0312	0.0508	-62.82		
		0.0210	0.0256	-21.90		
Shopmaster LPH 10%	LMKT Lapping Compound	0.0093	0.0374	-302.15	-204.12	-84.62
		0.0074	0.0258	-248.65		
		0.0216	0.0349	-61.57		
	Honing Oil	0.0335	0.0212	36.72	50.58	
		0.0557	0.0252	54.76		
		0.0506	0.0201	60.28		
	Slide Gel	0.0155	0.0349	-125.16	-100.32	
		0.0278	0.0455	-63.67		
		0.0206	0.0437	-112.14		

It is important to note that the cleaners did not evaporate off the coupons over night. The clean weights thus include the weight of the cleaner.

Summary:

Conclusion: It would be worthwhile to test these cleaners again with the addition of a post cleaning drying step to get more accurate data.