CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 0

DateRun: 07/12/2016

Experimenters: Junhee Cho

ClientType: Lab

ProjectNumber: Project #1

Substrates: Brass, Ceramics, Copper, Stainless Steel

PartType: Part

Contaminants: Lubricating/Lapping Oils, Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Visual

Purpose: To test nontoxic industrial cleaning solutions for oil removal.

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning.

Four cleaners were tested at room temperature on copper, brass, and stainless-steel coupons to evaluate how Navi Guard Way Lube 32 soil was cleaned. Preweighed coupons were coated with each supplied soil using a handheld swab for each substrate and weighed a second time to determine the amount of soil added. Alconox Inc. Liquinox was diluted to 1% and 5%, AG Environmental Products Soy Gold 1000 and Soy Gold 2000 were diluted to 5%. Each cleaner was put in a beaker and three coupons of each substrate were immersed into the solution for 5 minutes. The coupons were then stood upright to air dry for 15 minutes and then placed on a tray. There was no rinse. Once dry, final weights were recorded, and efficiency calculated for each coupon cleaned.

Results:

Cleaner	Substrate	Initial wt of cont.	Final wt of cont.	% Cont Removed
1% Alconox	Copper	0.0538	0.0243	54.83
Inc. Liquinox	Copper	0.0393	0.0175	55.47
	Copper	0.1177	0.0223	81.05
	Brass	0.0634	0.0095	85.02
	Brass	0.0901	0.0241	73.25
	Brass	0.0492	0.0131	73.37
	Stainless Steel	0.0866	0.0326	62.36
	Stainless Steel	0.0594	0.0500	15.82
	Stainless Steel	0.0625	0.0247	60.48
5% Alconox	Copper	0.0268	0.0178	33.58
inc Liquinox	Copper	0.0290	0.0166	42.76
	Copper	0.0263	0.0201	23.57
	Brass	0.0737	0.0212	71.23
	Brass	0.0546	0.0183	66.48
	Brass	0.0558	0.0094	83.15
	Stainless Steel	0.1093	0.0138	87.37
	Stainless Steel	0.1115	0.0227	79.64
	Stainless Steel	0.0771	0.0258	66.54
5 % AG Envi.	Copper	0.0426	0.0166	61.03
Prod. Soy	Copper	0.0889	0.0181	79.64
Gold 1000	Copper	0.0828	0.0127	84.66

CLEANING LABORATORY EVALUATION SUMMARY

	Brass	0.0878	0.0170	80.64
	Brass	0.1182	0.0196	83.42
	Brass	0.1029	0.0190	81.54
	Stainless Steel	0.0824	0.0178	78.40
	Stainless Steel	0.0852	0.0200	76.53
	Stainless Steel	0.1033	0.0172	83.35

Summary:

Substrates:	Brass, Ceramics, Copper, Stainless Steel
Contaminants:	Lubricating/Lapping Oils, Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Alconox Inc	Liquinox	10	62.41	☐	
Alconox Inc	Liquinox	20	61.59	☐	
AG Environmental Products	Soy Gold 1000	20	78.80	☑	
AG Environmental Products	Soy Gold 2000	20	68.24	☐	

Conclusion:

AG Environmental Products Soy Gold 1000 efficiently removed Navi Guard Way Lube 32 on all three substrates at room temperature with an efficiency of 78.80%. 5% Alconox Inc. Liquinox least efficiently removed Navi Guard Way Lube 32 on all three substrates at room temperature with an efficiency of 61.59%.