CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2016

DateRun: 09/01/2016

Experimenters: Carla De La Cruz

ClientType: Jewelry Mfr

ProjectNumber: Project #3

Substrates: Copper, Stainless Steel

PartType: Coupon

Contaminants:

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Visual

Purpose: To find the best fit product for cleaning Leach Garner's Burn Free #5 Lubeatube P9616A from copper and stainless steel surfaces meant to resemble the cleaning of precious metals.

Experimental Procedure: Coupons of stainless steel and copper were selected and arranged on trays, so that each cleaner had an assigned set of each surface. Before taking initial weights coupons were wiped down with Kimwipes. After taking weights the coupons were promptly soiled and reweighed. All cleaners were gathered in respective bottles and beakers. A stir bar was used in conjunction with a heating plate equipped to stir the solutions. The coupons were added to the beakers three of a kind at one time, and then allowed to sit in the stirred solution at room temperature for 5 minutes while observations were taken. Finally, clean weights were taken at the end of all the testing.

Results:

Cleaner	Substrate	Initial wt.	Final wt.	% Cont Removed	% Overall
FluoSolv CX	Stainless	0.3231	0.0022	99.32	
	Stainless	0.2900	0.0017	99.41	99.40
	Stainless	0.3829	0.0020	99.48	
	Copper	0.4073	0.0377	90.74	
	Copper	0.3901	0.0011	99.72	96.67
	Copper	0.4132	0.0019	99.54	
FluoSolv NC	Stainless	0.4007	0.0329	91.79	
	Stainless	0.4245	0.0172	95.95	94.20
	Stainless	0.2493	0.0128	94.87	
	Copper	0.3602	0.0021	99.42	
	Copper	0.3737	0.0023	99.38	99.38
	Copper	0.3476	0.0023	99.34	
Vertrel Sion	Stainless	0.4545	0.0004	99.91	
	Stainless	0.4130	0.0007	99.83	99.82
	Stainless	0.3589	0.0010	99.72	
	Copper	0.3926	0.0015	99.62	
	Copper	0.4842	0.0009	99.81	99.75
	Copper	0.4137	0.0007	99.83	
Solstice PF	Stainless	0.5476	0.0028	99.49	
	Stainless	0.3538	0.0498	85.92	93.85
	Stainless	0.3849	0.0149	96.13	
	Copper	0.4504	0.0025	99.44	
	Copper	0.4131	0.0031	99.25	99.23
	Copper	0.4841	0.0048	99.01	

Summary:

Substrates:	Copper, Stainless Steel				
Contaminants:					
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
NuGeneration Technologies, LLC	FluoSolv CX	100	98.04	☑	
NuGeneration Technologies, LLC	FluoSolv NC 786	100	96.79	☑	
DuPont	Vertrel Sion	100	99.79	☑	
Honeywell	Solstice PF with N2	100	96.54	☑	

Conclusion:

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Testing had potential. At first, the soil was dissolved but once it was taken out of the soil it was apparent that the soil had left behind residue. The best cleaner was the Vertrel Sion which was able to quickly dissolve the soil and caused minimal streaking. FluoSolv NC and Solstice PF were not very successful, leaving behind a significant amount of residue behind. In general, the best cleaner for the job was Vertrel Sion.