CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2016
DateRun:	02/29/2016
Experimenters:	Abigail Giarrosso, Catherine York, Sabrina Apel
ClientType:	General
ProjectNumber:	Project #1
Substrates:	Aluminum, Brass, Stainless Steel
PartType:	Coupon
Contaminants:	Lubricating/Lapping Oils
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To eliminate the use of N-Propyl Bromide in cleaning opereations
Experimental Procedure:	Four cleaners were tested at room temperature on aluminum, brass, and stainless-steel coupons to evaluate how the soil Navi Guard Way Lube 32 was cleaned. Preweighed coupons were coated with the supplied Navi Guard soil using a handheld swab and weighed a second time to determine the amount of soil added. Each cleaner was put in a beaker and three coupons were immersed into the solution for 5 minutes. The coupons were then stood upright to sir dry for 15 minutes and then placed on a tray. There was no rinse. Once dry, final weights were measured and efficiency calculated for each coupon cleaned.

Results:

Cleaner	Substrate	Initial Wt	Final Wt	% Removed
Fluosolv CX	Aluminum	21.5357	21.5362	98.73
	Aluminum	21.5777	21.5790	96.95
	Aluminum	21.5357	21.5362	98.73
	Brass	69.4516	69.4517	99.51
	Brass	69.5391	69.5396	98.05
	Brass	69.6129	69.6129	100.00
	Stainless	60.1003	60.1009	97.35
	Stainless	63.9329	63.9331	99.45
	Stainless	63.8901	63.8941	90.85
Fluosolv NC	Aluminum	21.0619	21.0619	100.00
	Aluminum	21.1997	21.1997	100.00
	Aluminum	21.1747	21.1749	99.58
	Brass	69.4374	69.4375	99.83
	Brass	69.3301	69.3302	99.69
	Brass	49.5338	49.5341	99.38
	Stainless	59.5762	59.5787	97.61
	Stainless	59.1224	59.1268	93.69
	Stainless	60.0314	60.0339	94.49
Honeywell PF	Aluminum	21.6234	21.6238	99.38
	Aluminum	21.4832	21.4841	98.98
	Aluminum	21.5779	21.5782	99.65
	Brass	49.4789	49.4808	98.25
	Brass	49.4186	49.4188	99.76
	Brass	49.5329	49.5337	99.19
	Stainless	60.4422	60.4437	98.39
	Stainless	59.4621	59.4644	94.81
	Stainless	58.9557	58.9571	97.94
Honeywell PF-2A	Aluminum	21.4990	21.5008	97.69
	Aluminum	21.0991	21.0993	99.66
	Aluminum	21.6885	21.6886	99.82
	Brass	49.5435	49.5443	98.97

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	Brass	69.5289	69.5300	98.79
	Brass	69.4467	69.4493	96.57
	Stainless	63.9052	63.9112	92.45
	Stainless	63.9679	63.9681	96.15
	Stainless	59.5294	59.5317	97.62

Summary:

Substrates:	Aluminum, Brass, Stainless Steel				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
NuGeneration Technologies, LLC	FluoSolv CX	100	97.87	☑	
NuGeneration Technologies, LLC	FluoSolv NC 786	100	98.25	☑	
Honeywell	Solstice PF-2A with N2	100	97.52	☑	
Honeywell	Solstice PF with N2	100	98.48	☑	

Conclusion:

All four cleaners efficiently removed the Navi Guard soil on all three substrates at room temperature. The least efficient cleaner used was Solstice 2A from Honeywell, with the lowest cleaning average on the stainless-steel substrate. The Solstice 2A was still an efficient cleaner with a 97.52% efficiency but was less efficient than the other cleaners used. The most efficient cleaner would be Solstice PF from Honeywell which had an efficiency of 98.48%. All cleaners worked extremely well.