CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2017

DateRun: 07/11/2017

Experimenters: Alicia McCarthy, Hayley Byra

ClientType: General

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate the effectiveness of five TCE alternatives at removing lubricants from aluminum alloys.

Experimental Procedure: Preweighed aluminum coupons were tested for each cleaner. Coupons were soiled with Accu-Lube LB 6000 Lubricant (CAS 68583-51-7) using a swab to cover the bottom third of the substrate and dirty weights were recorded. Coupons were immersed, three at a time, in a beaker with 200ml of the chosen cleaner at room temperature (68 F) for five minutes. Visual observations were taken during this time, and final weights were recorded after cleaning.This process was repeated for each cleaner.

Results:

Cleaner	Initial wt.	Final wt.	% Removed	Average % Removed
Fluosolv CX				
	0.0666	0.0008	98.8	98.41
	0.0969	0.0022	97.73	
	0.1398	0.0018	98.71	
Fluosolv NC				
	0.1278	0.0013	98.98	95.44
	0.1311	0.0083	93.67	
	0.1311	0.0083	93.67	
Solstice PF				
	0.0958	0.0001	99.9	99.69
	0.108	0.0005	99.54	
	0.1088	0.0004	99.63	
Solstice PF-2A				
	0.0897	-0.0013	101.45	99.85
	0.0825	0.0007	99.15	
	0.0658	0.0007	98.94	
Vertrel Sion				
	0.1184	0.0043	96.37	96.39
	0.0825	0.0053	93.58	
	0.1154	0.0009	99.22	

Cleaners visually performed the same and removed a majority of the soil.

Summary:

Substrates:	Aluminum				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
NuGeneration Technologies, LLC	FluoSolv CX	100	98.41	☑	
NuGeneration Technologies, LLC	FluoSolv NC 786	100	95.44	☑	
Honeywell	Solstice PF with N2	100	99.69	☑	
Honeywell	Solstice PF-2A with N2	100	99.85	☑	
DuPont	Vertrel Sion	100	96.39	☑	

Conclusion:

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All five drop-in solvents were effective at removing lubricant from aluminum. Next step is to repeat this procedure on Blasocut 2000 Universal.