

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2016
 DateRun: 03/20/2016
 Experimenters: Luis Raudales
 ClientType: Metal Working
 ProjectNumber: Project #1
 Substrates: Aluminum
 PartType: Coupon
 Contaminants: Waxes
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric, Visual

Purpose: To find alternative degreasing agent.

Experimental Procedure: Twelve pre weighed aluminum coupons were coated with heated Carnuba Wax (95 F). Coupons were baked in an oven at 200 F for ten minutes and cooled at 120 F for five minutes. Coupons were then removed from the oven and cooled to room temperature before weighing again to determine the amount of soil added. The coupons were grouped in sets of three, one set corresponding to each cleaner.

Each set of coupons were placed in a beaker with 150 ml of the supplied cleaner for five minutes at room temperature (75 F). At the end of the period, the coupons were taken out of the solution, hanged to dry at room temperature for fifteen minutes. Final weights were measured and efficiencies recorded and observations were noted to record changes experienced by the contaminant. The same procedure was applied to the other three sets of coupons, each one for the other chemicals to be tested.

Results: Fluosolv CX and Fluosolv NC were effective in cleaning the wax. All products turned the wax white and crystallized it and then dissolved it.

Cleaner	Initial weight	Final weight	% Removed
Fluosolv CX	0.50	0.04	91.00
	0.34	0.03	91.86
	0.34	0.03	91.73
Fluosolv NC	0.30	0.03	88.47
	0.22	0.03	87.83
	0.23	0.03	86.46
Solstice PF	0.36	0.06	84.45
	0.27	0.04	83.89
	0.32	0.05	83.25
Solstice PF-2A	0.33	0.05	83.43
	0.42	0.07	83.45
	0.25	0.04	84.04

Summary:

Substrates:	Aluminum				
Contaminants:	Waxes				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
NuGeneration Technologies, LLC	FluoSolv CX	100	91.53	<input checked="" type="checkbox"/>	
NuGeneration Technologies, LLC	FluoSolv NC 786	100	87.59	<input checked="" type="checkbox"/>	
Honeywell	Solstice PF with N2	100	83.87	<input type="checkbox"/>	
Honeywell	Solstice PF-2A with N2	100	83.64	<input type="checkbox"/>	

Conclusion: Even though Fluosolv CX had removal efficiency greater than 90.00%, the product still left a white residual of crystallized wax over the coupons. It is recommended to use other methods and temperatures to improve effectiveness.