

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998  
 DateRun: 09/13/1998  
 Experimenters: Jason Marshall  
 ClientType: Aluminum Job Shop  
 ProjectNumber: Project #1  
 Substrates: Aluminum  
 PartType: Coupon  
 Contaminants: Adhesive, Coatings, Resins/Rosins  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Gravimetric

Purpose: To further test the cleaners from the previous trial.

Experimental Procedure: Twelve preweighed coupons were contaminated with the sealant using a hand-held swab. Coupons were reweighed after sealant had dried. Four cleaning chemistries were selected from the previous test based on cleaning efficiencies. Glass petri dishes, 4" diameter, were filled 1/3 full with each cleaner at 100% concentration. The dishes were heated to 130 F on a hot plate. One coupon was placed in the dish at a time and soaked at room temperature for 3 minutes. At the end of the soaking, the coupon was removed and wiped for 1 minute with a paper towel. Coupons were air dried and weighed to obtain their clean weights. Cleaning efficiencies were then calculated.

SUBSTRATE MATERIAL: Aluminum (Al 202-50552 H-32)  
 CONTAMINANTS: Acrylic Sealant-Aromatic Hydrocarbon (Toluene CAS# 108-88-3)

Results: A couple of the cleaners benefited from the increased temperatures. Others showed little or no improvement. Table 1 list the cleaning efficiencies of the four chemistries tested.

Table 1. Cleaning Efficiencies at 130 deg F

	HTF 85 B	Citrisolv	Luminox	Soy Gold
Coupon 1	97.9	19.07	63	49.04
Coupon 2	99.6	56.1	36.39	75.16
Coupon 3	83.67	74.02	49.67	44.42
Average	93.72	49.73	49.69	56.21

The second table takes the average cleaner efficiency from both trials and compares them to each other.

Table 2. Comparison of Cleaning Efficiencies

	HTF 85 B	Citrisolv	Luminox	Soy Gold
Trial 1	42.2	43.82	6.941	30.68
Trial 2	93.72	49.73	49.69	56.21

Both HTF 85 B and Luminox increased with the addition heat whereas Citrisolv and Soy Gold had marginal increases.

Summary:

<b>Substrates:</b>	Aluminum				
<b>Contaminants:</b>	Adhesive, Coatings, Resins/Rosins				
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>
Tarksol Inc	Tarksol HTF-50	100	93.72	<input checked="" type="checkbox"/>	
Pride International Inc	Citrisolv Plus	100	49.73	<input type="checkbox"/>	
Alconox Inc	Luminox	100	49.69	<input type="checkbox"/>	
AG Environmental Products	Soy Gold 1000	100	56.21	<input type="checkbox"/>	

Conclusion: The T-Square sample had over 90% removal of the contaminant when heated to 130 F. The next phase of testing will involve the customer supplied painted parts. Compatibility of HTF 85 B with the paint will be examined. The MSDS of HTF 85 B has been included with this report.