

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004  
DateRun: 05/28/2004  
Experimenters: Jason Marshall  
ClientType: Lab  
ProjectNumber: Project #1  
Substrates: Sterling/Silver  
PartType: Coupon  
Contaminants: Oil  
Cleaning Methods: Vapor Degreasing  
Analytical Methods: Gravimetric

Purpose: Laboratory evaluations of alternative cleaning products

Experimental Procedure: Basic cleaning performance testing was conducted using ASTM G122 as the bases for cleaning. Two hundred fifty milliliters of each product were used at full strength in a 4000 ml beaker and heated to its boiling point on a hot plate. Preweighed aluminum coupons were coated with the Houghton International Cindol 3401 oil (64742-46-7) using a handheld swab. Coupons were weighed a second time to determine the amount of soil added to each coupon. Three coupons were cleaned in each solution for 5 minutes using vapor degreasing. After cooling to room temperature, the coupons were weighed a final time and efficiencies were calculated.

## Results:

### Summary:

<b>Substrates:</b>		Sterling/Silver				
<b>Contaminants:</b>		Oil				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:	
AGA Chemical	AK 225	100	99.14	<input checked="" type="checkbox"/>		
DuPont	Vertrel CCA	100	99.68	<input checked="" type="checkbox"/>		
DuPont	Vertrel MCA	100	100.01	<input checked="" type="checkbox"/>		
Micro Care	Heavy Duty Degreaser C	100	100.37	<input checked="" type="checkbox"/>		
Micro Care	Flux Remover C	100	100.55	<input checked="" type="checkbox"/>		
3M	HFE 7100	100	99.96	<input checked="" type="checkbox"/>		
3M	HFE 7200	100	98.92	<input checked="" type="checkbox"/>		
Enviro Tech International Inc	Ensolv	100	99.71	<input checked="" type="checkbox"/>		
Enviro Tech International Inc	Ensolv A	100	99.13	<input checked="" type="checkbox"/>		
Kyzen Corporation	Metalnox M6960	100	99.08	<input checked="" type="checkbox"/>		
Poly Systems USA Inc	Solvon Kreussler PB	100	99.87	<input checked="" type="checkbox"/>		
Poly Systems USA Inc	Solvon Kreussler IP	100	99.71	<input checked="" type="checkbox"/>		
Dow Chemical Company	OS 10	100	99.73	<input checked="" type="checkbox"/>		
Dow Chemical Company	OS 20	100	99.14	<input checked="" type="checkbox"/>		
Dow Chemical Company	OS 30	100	89.55	<input checked="" type="checkbox"/>		

Conclusion: All fifteen products removed over 85%.