

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 02/22/2002

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: Plating Job Shop

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate additional cleaners for replacing TCE.

Experimental Procedure: An additional five products were selected from the lab's database of products. These five products were diluted to 5% using DI water in 600 ml beakers. Two products from the previous trial were also used in this trial. These products were diluted to 10% using DI water in 600 ml beakers. All seven products were heated to 130 F on a hot plate. Twenty-one preweighed coupons were coated with the New England Industrial Lubricant NEICUT 333 using a hand held swab. Coupons were then weighed again. Three coupons were cleaned in each solution for 5 minutes using stir-bar agitation. Following cleaning, coupons were rinsed in tap water for 30 seconds at 120 F and dried for 1 minute at 500 F with a Master Appliance heat gun. Once coupons cooled to room temperature, final weights were recorded and efficiencies were calculated.

Results: Only two products, Surface Cleanse 930 and SC Aircraft & Metal Cleaner, were effective in removing the lubricant using immersion cleaning. The others removed less than 75%. The following table lists the efficiencies for each product.

Cleaners	Coupon 1	Coupon 2	Coupon 3	Average	Std Dev
Surface Cleanse	83.69	84.72	85.37	84.59	0.85
Sea Wash	76.16	67.85	66.86	70.29	5.11
SC Aircraft	91.08	91.33	91.55	91.32	0.24
Inproclean	62.15	40.26	59.58	53.99	11.96
Dirtex	47.71	46.13	54.48	49.44	4.44
Beyond	69.85	74.43	74.66	72.98	2.72
Polyspray	65.65	71.86	48.82	62.11	11.92

Summary:

Substrates:		Stainless Steel				
Contaminants:		Lubricating/Lapping Oils				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	10	84.59	<input checked="" type="checkbox"/>		
Warren Chemical Company	Sea Wash 8	10	70.29	<input type="checkbox"/>		
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	91.32	<input checked="" type="checkbox"/>		
Oakite Products	Inproclean 3800	5	53.99	<input type="checkbox"/>		
Savogran Company	Dirtex Prepaint Cleaner	5	49.44	<input type="checkbox"/>		
Today & Beyond	Beyond 2005	5	72.98	<input type="checkbox"/>		
US Polychem Corporation	Polyspray Jet 790 P	5	62.11	<input type="checkbox"/>		

Conclusion: The two effective products will be used in the next trial. Operating conditions will be modified in an attempt to improve cleaning efficiencies.