CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 02/20/2002

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: Plating Job Shop

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Coupon

Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate cleaners for replacing TCE in removing oil from metal.

Experimental Procedure: Eight cleaners were selected from the lab's databases of testing and vendor information. Products were selected based on client supplied data. Each solution was diluted to 5% using DI water in a 600 ml beaker and heated to 130 F on a hot plate. Twenty-four preweighed coupons were contaminated with the New England Industrial Lubricants' NEILCUT 333 using a hand held swab. Coupons were weighed again to determine the amount of oil added. Three coupons were cleaned in each solution for 5 minutes using stir-bar agitation. A 30 second rinse in tap water at 120 F followed cleaning. Coupons were dried using a Master Appliance heat gun at 500 F for 1 minute.
Once coupons cooled to room temperature, final weights were recorded. Product efficiencies were calculated and recorded.

Results: Only two products, Warren Chemical Sea Wash 8 and International Products Surface Cleanse 930, removed over 80% of the oil from the stainless steel coupons. The following table lists the amount of contaminant added to each coupon as well as the effectiveness of each. (Three coupons per cleaner.)

Cleaners	Coupon 1	Coupon 2	Coupon 3	Average
Brulin	82.90	64.69	78.63	75.41
Buckeye	27.31	37.56	40.43	35.10
Heatbath	66.97	54.02	62.23	61.07
Safe CleanUp	86.71	64.80	51.15	67.56
Solvent Kleene	49.04	49.41	70.85	56.43
International Prod	78.70	76.83	87.98	81.17
Warren	80.22	93.02	88.82	87.35
Chem Free	57.69	21.74	25.43	34.95

Summary:

Substrates:	Stainless Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brulin Corporation	Aquavantage 1400	5	75.41	☐	
Buckeye International	Shopmaster LPH	5	35.10	☐	
Heatbath Corporation	MultiKleen LX 1573	5	61.07	☐	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	5	81.17	☑	
Safe CleanUp Solutions	Super Neutral	5	67.56	☐	
Transene Company, Inc.	D-Greeze GL 55	5	56.43	☐	
Warren Chemical Company	Sea Wash 8	5	87.53	☑	
Chem Free Corporation	SW-1 Ozzy Juice	5	34.95	☐	

Conclusion: The two effective products will be reevaluated in the next trial at higher concentrations. An additional five new products will evaluated at 5% concentrations as well.