CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2000

DateRun: 07/13/2000

Experimenters: Jason Marshall

ClientType: Bellows Mfr

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Greases

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To further evaluate successful cleaners on additional contaminants.

Experimental Procedure: Four cleaners were selected from the previous trial based on the effective cleaning results obtained. All were diluted to 5% by volume using DI water in 600 ml beakers and heated to 130 F in the ultrasonic tank filled with tap water. Twelve preweighed coupons were coated with the grease using a swab and weighed a second time. Three coupons were immersed in the beakers in the ultrasonic unit. Initial observations were made at 5 minute intervals. After 20 minutes, coupons were removed from the ultrasonic energy and rinsed for 30 seconds in tap water at 120 F. Drying was performed with a Master Appliance Corp, Hot-air gun model HG-301A for one minute at 500 F. Coupons were weighed a final time and cleaning efficiencies were calculated.

SUBSTRATE MATERIAL: Aluminum Coupons
CONTAMINANTS: Cello-Seal, Grease
CONTAMINATING PROCESS USED: Grease applied using hand held swab

Results: The Today & Beyond and United Laboratories' products were successful in removing 90% of the grease from the aluminum coupons. The WR Grace product had one coupon that was 93% clean but the other two coupons were well under 50%. Table 2 shows the efficiencies for the four cleaners evaluated in the trial.

Table 2. Final Coupon Weights

20 minutes	Heatbath	T&B	UL	WR Grace
Coupon 1	32	99.21	97.19	30.03
Coupon 2	52.79	90.36	81.6	43.21
Coupon 3	23.9	97.85	91.08	92.71
Average	36.23	95.81	89.95	55.32

Summary:

Substrates:	Aluminum				
Contaminants:	Greases				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Heatbath Corporation	Multi-Kleen 1568	5	36.23	☐	
Today & Beyond	Beyond 2001	5	95.81	☑	
United Laboratories International	United 450 All Clear	5	89.95	☑	
Magnaflux	Daraclean 200	5	55.32	☐	

Conclusion: The uncleaned parts will be cleaned in the Today & Beyond and United Laboratories products using ultrasonic energy. The clean parts will be returned for inspection by the client.