CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001

DateRun: 12/17/2001

Experimenters: Jason Marshall

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: To evaluate successful cleaners using ultrasonic energy

Experimental Procedure: The seven successful cleaners and the client's current cleaner from the previous trial were again diluted to 5% in 600 ml beakers using DI water. Each was heated to 130 F in a Crest 40 kHz ultrasonic tank filled with water.
Twenty-seven preweighed coupons were coated with the lubricant using a plastic eye dropper and allowed to sit for 2 hours. The coupons were weighed. Three coupons were cleaned in each solution for 5 minutes using ultrasonic energy. Following the cleaning, a 30 second tap water rinse at 120 and a 1 minute heat gun drying at 500 F was performed. Coupons were allowed to return to room temperature and reweighed. Efficiencies were calculated and recorded.

Contaminant: Fuchs Renocut 127 (mineral oil)

Results: Valtech Valtron SP 2275 again had the highest efficiency, removing 99.99% of the lubricant from the aluminum coupons. Four other products removed over 99%, including the client supplied cleaner. The following table lists the results for each coupon cleaned.

Cleaner	Coupon 1	Coupon 2	Coupon 3	Average
Brulin	99.78	98.17	99.40	99.12
Buckeye	95.98	97.81	97.65	97.15
Envirosolutoins	98.54	98.60	99.39	98.84
Gemtek	96.82	96.13	97.74	96.89
Innovative	99.98	99.34	99.54	99.62
Today	99.87	99.92	99.90	99.90
Valtech	99.98	100.02	99.97	99.99
Texo	99.88	99.60	99.66	99.71

Summary:

Substrates:	Aluminum				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brulin Corporation	Formula 815 GD	5	99.12	☑	
Buckeye International	Shopmaster LPH	5	97.15	☐	
Bio Chem Systems	Green Stuff 6325	5	98.84	☐	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	96.89	☐	
Innovative Organics Inc	Amberclean 527 L	5	99.62	☑	
Today & Beyond	Beyond 2004	5	99.90	☑	
Valtech Corporation	Valtron SP 2275	5	99.99	☑	
Texo Corporation	Texo Cleaner 127	5	99.71	☑	

Conclusion: The use of ultrasonics increased the effectiveness for all but one cleaner. The five most effective cleaners will be used to clean supplied parts from the client.