

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2001
 DateRun: 12/18/2001
 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	<input checked="" type="checkbox"/>	
Buckeye International	Shopmaster LPH	5	97.15	<input type="checkbox"/>	
Bio Chem Systems	Green Stuff 6325	5	98.84	<input type="checkbox"/>	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	96.89	<input type="checkbox"/>	
Innovative Organics Inc	Amberclean 527 L	5	99.62	<input checked="" type="checkbox"/>	
Today & Beyond	Beyond 2004	5	99.90	<input checked="" type="checkbox"/>	
Valtech Corporation	Valtron SP 2275	5	99.99	<input checked="" type="checkbox"/>	
Texo Corporation	Texo Cleaner 127	5	99.71	<input checked="" type="checkbox"/>	

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.