CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 04/02/2002

Experimenters: Jason Marshall, Purav Dave

ClientType: Cleaning Equipment Mfr

ProjectNumber: Project #2

Substrates: Stainless Steel

PartType: Coupon

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

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric

Purpose: 1st contaminant cleaning

Experimental Procedure: Eighteen preweighed coupons were coated with Bencyn B-5186 (64742-52-5, 9003-29-6, 39464-69-2, 63197-48-8) a heavy metal working fluid using a hand held swab. Coupons were reweighed. Nine coupons were clipped to wire racks and immersed into the Flow-Matic machine and cleaned for 1 minutes using ultrasonics at 92 F, removed and rinsed in a tap water spray and re-immersed into the ultrasonics for an additional 1 minute followed by a second 5 second rinse. The nine coupons were then dried using an air knife for 15 seconds and then using a Master Appliance heat gun at 500 F for 15 seconds. The second set of nine coupons followed the same cleaning cycle except they were hung on a wire stand and immersed into a Crest 40 kHz ultrasonic tank.

Results: Comparison of the two processes revealed that the Flow-Matic system was more effective than the traditional ultrasonic equipment. The following table lists the results obtained during the evaluation.

Table 1. Cleaning Efficiencies

Process	Flow-Matic	Traditional
	96.6	56.9
	95.0	70.0
	70.1	57.4
	93.1	51.7
	76.9	77.8
	68.0	74.1
	95.8	67.6
	95.2	77.8
	80.2	67.5
Average	85.7	66.8

Summary:

Substrates:	Stainless Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Water	Water	100	86.00	☑	Flow-Matic System
Water	Water	100	67.00	☐	Traditional system

Conclusion: For the heavy metal working fluid, the Flow-Matic system was more effective than the traditional ultrasonic method.