

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002
 DateRun: 04/09/2002
 Experimenters: Jason Marshall, Purav Dave
 ClientType: Cleaning Equipment Mfr
 ProjectNumber: Project #2
 Substrates: Stainless Steel
 PartType: Coupon
 Contaminants: Greases
 Cleaning Methods: Ultrasonics
 Analytical Methods:
 Purpose: 4th contaminant cleaning

Experimental Procedure: Ten preweighed coupons were coated with Castrol Inc. Braycote 601 perfluoropolyether grease, using a hand held swab. Coupons were reweighed. Five 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 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. The second set of five 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 Traditional system was more effective than the Flow-Matic equipment. The following table lists the results obtained during the evaluation.

Table 1. Cleaning Efficiencies

| Process | Flow-Matic | Traditional |
|---------|------------|-------------|
| | 24.89 | 69.91 |
| | 44.49 | 44.62 |
| | 13.52 | 50.76 |
| | 16.83 | 55.29 |
| | 20.56 | 48.17 |
| Average | 24.06 | 53.75 |
| Std Dev | 12.18 | 9.84 |

Summary:

| Substrates: | | Stainless Steel | | | |
|----------------------|---------------|-----------------|-------------|--------------------------|--------------------|
| Contaminants: | | Greases | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Water | Water | 100 | 53.75 | <input type="checkbox"/> | Traditional system |
| Water | Water | 100 | 24.06 | <input type="checkbox"/> | Flow-Matic system |

Conclusion: The traditional ultrasonic method was more effective than the Flow-Matic system. Neither cleaner was successful in removing the grease from the stainless steel coupons.