

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002
 DateRun: 04/11/2002
 Experimenters: Jason Marshall, Purav Dave
 ClientType: Cleaning Equipment Mfr
 ProjectNumber: Project #2
 Substrates: Stainless Steel
 PartType: Coupon
 Contaminants: Resins/Rosins
 Cleaning Methods: Ultrasonics
 Analytical Methods:
 Purpose: 6th contaminant cleaning

Experimental Procedure: Thirteen preweighed coupons were coated with Solutia Gelva 2895 (50862-46-9; 141-78-6; 142-82-5; 67-63-0; 64-17-5; 108-05-4) with 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 re-immersed into the ultrasonics for an additional 1 minute followed by a second 5 second rinse. The coupons were then dried using an air knife for 15 seconds. A 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. The final three coupons were cleaned in water using stir-bar agitation, rinsed with the spray and dried with air knives.

Results: Comparison of the two processes revealed that both system were ineffective at removing the resin from the stainless steel coupons.

Table 1. Cleaning Efficiencies

| Process | Flow-Matic | Traditional |
|---------|------------|-------------|
| | 13.35 | 10.72 |
| | 11.87 | 14.07 |
| | 13.03 | 10.22 |
| | 10.87 | 14.31 |
| | 13.80 | 15.48 |
| Average | 12.59 | 12.96 |
| Std Dev | 1.20 | 2.34 |

Water in the immersion cleaning removed the same amount of resin as the ultrasonic systems.
 Gelva
 13.66
 10.61
 13.57
 12.61 Average
 1.737 Std Dev

Summary:

| | | | | | |
|----------------------|----------------------|-----------------|--------------------|--------------------------|----------------------|
| Substrates: | | Stainless Steel | | | |
| Contaminants: | | Resins/Rosins | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Water | Water | 100 | 12.96 | <input type="checkbox"/> | Traditional system |
| Water | Water | 100 | 12.59 | <input type="checkbox"/> | Flow-Matic System |
| Water | Water | 100 | 12.61 | <input type="checkbox"/> | Immersion sytstem |

Conclusion: Neither system was effective in cleaning the resin.