

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004
DateRun: 12/08/2004
Experimenters: Jason Marshall
ClientType: Manufacturers of Precision Parts and Assemblies
ProjectNumber: Project #1
Substrates: Plastic, Stainless Steel
PartType: Part
Contaminants: Lubricating/Lapping Oils
Cleaning Methods: Ultrasonics
Analytical Methods: Visual

Purpose: To evaluate aqueous cleaners on supplied parts using ultrasonic cleaning

Experimental Procedure: The three top products from the previous aqueous cleaning trial were used at the same dilutions (2%). Each beaker was immersed into a Crest 40 kHz ultrasonic tank filled with water heated to 115 F. The products were degassed for 5 minutes.

Parts were received contaminated with Fuch's Lubricants Renocut 6515 NC (mineral oil, vegetable oil) from the client. Two parts were cleaned in each product for 2 minutes with ultrasonics. Coupons were again rinsed in water at 120 F for 15 seconds and dried with air blow off at room temperature for 30 seconds. Once dry, final observations were recorded.

Results: Observation of the parts prior to cleaning revealed that each part was sufficiently coated with the Fuch's Renocut 6515 NC almost to the point of over coated. After cleaning no visible signs of oil were observable. The parts looked as clean as the parts previously cleaned with the client's current contact cleaner.

| Cleaner | Part Description | Observations |
|-----------------|---|--------------|
| Amberclean Q3 | Steel cylinder with threads in the middle | No oil |
| | Clear plastic cylinder | No oil |
| Formula 815 GD | Steel nut with threads on end | No oil |
| | Tan plastic cylinder | No oil |
| Valtron SP 2275 | Steel cylinder with no threads | No oil |
| | Clear plastic cylinder | No oil |

Summary:

| Substrates: | | Plastic, Stainless Steel | | | |
|-------------------------|-----------------|--------------------------|-------------|-------------------------------------|---------------|
| Contaminants: | | Lubricating/Lapping Oils | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Innovative Organics Inc | Amberclean Q3 | 2 | | <input checked="" type="checkbox"/> | |
| Brulin Corporation | Formula 815 GD | 2 | | <input checked="" type="checkbox"/> | |
| Valtech Corporation | Valtron SP 2275 | 2 | | <input checked="" type="checkbox"/> | |

Conclusion: The three aqueous products looked like they were capable of removing the oil from the small intricate parts when ultrasonic energy is included. Parts have been sent to the client for further analysis.