

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008
 DateRun: 09/09/2008
 Experimenters: Jason Marshall
 ClientType: Nano manufacturing
 ProjectNumber: Project #1
 Substrates: Stainless Steel
 PartType: Part
 Contaminants: Dirt, Clay
 Cleaning Methods: Ultrasonics
 Analytical Methods: Photography, Visual

Purpose: To evaluate selected product on cleaning supplied stainless steel filter

Experimental Procedure: One product was selected from the previous trial based on performance. The product was used at 10% diluted with DI water and was used at room temperature. The solution was used in a 40 kHz Branson 3510 ultrasonic unit after being degassed for 5 minutes.

The filter was totally immersed into the ultrasonic tank and cleaned for 20 minutes. Observations were made at five-minute intervals. Following cleaning, parts were rinsed with a DI water spray for 2 minutes at room temperature. The cleaned part was dried with compressed air at room temperature for 3 minutes.

Parts were photographed before and after cleaning. The cleaning solution also was photographed to help determine if the filter was being cleaned.

Results: Signs of effective cleaning were made within the first 5 minutes of cleaning. The part looked clean after the 20 minutes and the cleaning bath was very dark. Observations are listed in the table.

| Time | Observation |
|--------|--|
| 5 min | Solution turned cloudy and had a slight grey tinge to it. |
| 10 min | Solution turned darker. The part still had a fine film on the outer surface. It could be easily wiped off or removed with a spray rinse. |
| 15 min | Most of the observed film was removed |
| 20 min | Part looked clean. Bath water was very cloudy and the bottom of the tank could not be seen. |

Summary:

| | | | | | |
|----------------------|----------------------|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Stainless Steel | | | | |
| Contaminants: | Dirt, Clay | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Valtech Corporation | Valtron SP 2700 KB | 10 | | <input checked="" type="checkbox"/> | |

Conclusion: The Valtron SP 2700 kb appeared to have good cleaning ability of the contaminant using ultrasonic cleaning. The part will be sent to client for final inspection and pressure testing.