

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007

DateRun: 02/02/2007

Experimenters: Jason Marshall

ClientType: Jewelry Mfr

ProjectNumber: Project #1

Substrates: Stainless Steel

PartType: Part

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: To evaluate selected products on supplied parts using ultrasonic cleaning

Experimental Procedure: Three products were selected from previous trial based on effectiveness. Each product was diluted to 5% using DI water in 600 ml beakers. Each solution was heated to 150 F in a Branson 3510 ultrasonic tanked filled with water. The solutions were degassed for 5 minutes.

Three stainless steel rings without lacquer finish but were coated with Jackonslea Grey Color 305 A (1344-28-1) were cleaned in each solution for 5 minutes using 40 kHz ultrasonic cleaning. Rings were rinsed for 15 seconds in 120 F tap water and dried using compressed air at room temperature for 30 seconds. If the rings were not completely clean after the initial 5 minutes, the rings would be cleaned for another 5 minutes. In addition, if the rings were not completely cleaned after 15 minutes, new concentrations would be tested (10 and 20%).

Results: The observations made for each product at the various times and concentrations are recorded in the table below.

| Product | Conc | Time | Observation |
|---------|------|------|---|
| Det 8 | 5 | 5 | Not clean. Most clean of three products at 5% |
| | | 10 | Almost clean |
| | | 15 | Still not 100% clean |
| | 10 | 15 | Looked nearly clean, about same as MC 580 |
| | 20 | 10 | All rings looked cleaned |
| MC 580 | 5 | 5 | Not clean. About the same as 790 XS |
| | | 10 | Cleaner than Det 8 |
| | | 15 | Still not 100% clean |
| | 10 | 15 | Looked nearly clean, about same as Det 8 |
| | 20 | 10 | All rings looked cleaned |
| 790 XS | 5 | 5 | Not clean. About the same as MC 580 |
| | | 10 | About the same as Det 8 |
| | | 15 | Still not 100% clean |
| | 10 | 15 | No 100% clean |
| | 20 | 10 | All rings looked cleaned |

Summary:

| | | | | | | |
|--------------------------------|-----------------------------|----------------------|--------|-------------|-------------------------------------|---------------|
| Substrates: | Stainless Steel | | | | | |
| Contaminants: | Buffing/Polishing Compounds | | | | | |
| Company Name: | | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Alconox Inc | | Detergent 8 | 20 | | <input checked="" type="checkbox"/> | |
| Matchless Metal Polish Company | | MC 580 | 20 | | <input checked="" type="checkbox"/> | |
| US Polychem Corporation | | Polyspray Jet 790 XS | 20 | | <input checked="" type="checkbox"/> | |

Conclusion: All three products worked well at a 20% concentration for 10 minutes at 150 F. Both Detergent 8 and MC 580 worked well at 10% concentration for 15 minutes at 150 F.