

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1996
DateRun: 01/04/1996
Experimenters: Jay Jankauskas
ClientType: Silversmith
ProjectNumber: Project #1
Substrates: Brass
PartType: Coupon
Contaminants: None
Cleaning Methods: Immersion/Soak
Analytical Methods: Visual

Purpose: Perform a material compatability test

Experimental Procedure: The purpose of this trial is perform a material compatibility test for Silversmith. The compatibility of the WR Grace Daraclean 211, Calgon 2215, and the U.S. Polychem #790 Poly Spray Jet with brass parts. Each solution was made up at a 20% concentration. Two brass coupons were submerged in each beaker for 2 hours at temperatures of 130, 140, 150 and 160 F. After one hour, the coupons were visually analyzed for any etching or discoloration that might have taken place.

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|----------|-------------|---------------|----------------|--------------------|
| Results: | | WR Grace | Calgon | U.S. Polychem |
| | Temperature | Daraclean 211 | Geo-Guard 2215 | 790 Poly Spray Jet |
| | 130 | pass | pass | pass |
| | 140 | pass | pass | pass |
| | 150 | pass | pass | pass |
| | 160 | pass | pass | pass |

| | | | | | | |
|----------|-------------------------|----------------------|---------------|--------------------|-------------------------------------|----------------------|
| Summary: | Substrates: | Brass | | | | |
| | Contaminants: | None | | | | |
| | Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| | Magnaflux | Daraclean 211 | 20 | | <input checked="" type="checkbox"/> | |
| | Calgon Corporation | Geo Guard 2215 | 20 | | <input checked="" type="checkbox"/> | |
| | US Polychem Corporation | Polyspray Jet 790 XS | 20 | | <input checked="" type="checkbox"/> | |

Conclusion: All cleaners were brass compatible when immersed in excessive cleaner chemistries for an excessive amount of time. The cleaning stage should not pose a problem with the brass, but the rinse stage must be kept at a low temperature to avoid etching and spotting. Both brass and silver parts from Silversmith will be tested in the Miele spray washing system as soon as the new program card is received from Miele.