CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2007

DateRun: 02/06/2007

Experimenters: Heidi Wilcox

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Brass

PartType: Part

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: To evaluate new, lower pH cleaners for cleaning brass parts that have been tarnishing with the previous cleaners we found that were effective.

Experimental Procedure: The two most effective cleaners from previous testing and on-site cleaning were found to have pH's of 11.5 & 13. A search of cleanersolutions.org was done looking for cleaners effective for brass and buffing compound using ultrasonics and four cleaners were chosen with pH's ranging from 8.4 to 10. These cleaners were diluted to 5% using Di water and were heated to 130 F in a Crest 40 kHz ultrasonic tank filled with water. The solutions were degassed for 5 minutes and then 3 cylinders were put in each solution and cleaned for 5 minutes using 40kHz ultrasonic cleaning. They were rinsed for 10 seconds in 120F tap water and were dried using room temp compressed air blow off for 10 seconds. Analysis was visual for cleaning and tarnishing.

Results: Three of the four lower pH products caused low amounts of tarnish on the parts while cleaning them well or moderately. One product tarnished so it will not be used in further testing.

Cleaner	pH	Observation
Polyspray P	10	Tarnished, moderate clean, No Further Testing
Micro 90	9.7	Very low tarnish, cleaned well, Test Further
Shopmaster HP	8.4	Very Low tarnish, moderate cleaning, Test Further
Matchless 580	10	Very low tarnish, cleaned well, Test Further

Summary:

Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
US Polychem Corporation	Polyspray Jet 790 P	5	0.00	☐	Tarnished, moderately clean
International Products Corporation	Micro 90 Conc.	5	0.00	☑	Very Low tarnish, cleaned well.
Buckeye International	Shopmaster HP	5	0.00	☑	Very low tarnishing. Moderately clean.
Matchless Metal Polish Company	MC 580	5	0.00	☑	Very Low Tarnish, cleaned well.

Conclusion: One product with a pH of 10 tarnished the parts and will not be used in further testing. The other three products produced very low tarnishing. Two cleaned the parts well in 5 minutes and one product cleaned moderately well. All three products will be used in cleaning a larger variety of company supplied parts.