CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 08/22/2005

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: Metal Finishing

ProjectNumber: Project #1

Substrates: Brass

PartType: Part

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Vapor Degreasing

Analytical Methods: Visual

Purpose: To evaluate selected cleaners using vapor degreasing.

Experimental Procedure: Three cleaners were selected after several trials to test chemistries on the buffing compounds. The previous trials were done using heated and room temperature immersion cleaning.

The three cleaners were used at full strength and heated to their boiling points in a 4000 ml vapor degreaser using 250 ml of each cleaner. Four parts were used for each cleaner. The parts were supplied soiled by the client and included two smooth rectangular parts and two engraved parts. The parts were soiled with buffing compound from the vendor and pictures were taken of each lot before and after cleaning.

Each cleaner was put into the vapor degreaser and the heat was turned on. When the cleaner reached its boiling point and when the vapors were seen and approached the cooling coil, the parts were suspended from wire into the vapor area of the degreaser for cleaning. The parts were cleaned for five minutes. Observations were made and recorded.

Results: After vapor degreasing with the first cleaner is was evident that a soak phase may be necessary before or after to remove all the buffing compound. The cleaning process was modified for the second set which included a 30 second pre-soak followed with a 5 minute vapor degreasing. After pictures were taken a three minute post-soak was done also. More compound was removed when the soaks were employed then with vapor degreasing alone. With the third cleaner a three minute pre-soak was done before a 5 minute vapor degrease was performed and overall this procedure worked the best.

Manufacturer	Products	Observations
Envirotech	Ensolv	little removal
Microcare	Vertrel CCA	better removal with a pre & post-soak
Petroferm	Lenium ES	best removal with a longer pre-soak

When the coupons were allowed to soak in the cleaners pre and post vapor degreasing the removal was better but not total.

Summary:

Substrates:	Brass				
Contaminants:	Buffing/Polishing Compounds				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Enviro Tech International Inc	Ensolv	100	0.00	☐	
DuPont	Vertrel CCA	100	0.00	☐	
Petroferm Inc	Lenium ES	100	0.00	☑	

Conclusion: The parts cleaned will be sent back to the client for inspection. The testing done did not fully evaluate the cleaners against each other since different methods were employed with each. The next phase of testing should be done using the same cleaning method and possibly an ultrasonic presoak utilizing the client's current ultrasonic chemistry. A sample needs to be obtained. New dirty parts will be needed for further testing. Another option is to find a cleaner that will clean the parts totally using ultrasonics and no vapor degreasing.