CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	03/31/2008
Experimenters:	Heidi Wilcox
ClientType:	Aluminum Anodizing Job Shop
ProjectNumber:	Project #2
Substrates:	Aluminum
PartType:	Part
Contaminants:	Coatings
Cleaning Methods:	Manual Wipe
Analytical Methods:	Visual
Purpose:	To replace methyl ethyl ketone in the removal of lacquer from aluminum parts.
Experimental Procedure:	The company was requesting help on removing a red lacquer masking off aluminum parts. The lacquer and parts with the lacquer were sent to the lab and testing was done to find products that would remove the lacquer form the aluminum parts, using wipe and ultrasonic cleaning. They were currently running a wipe and a cold immersion line of cleaning using MEK. Workers were using pre moistened swabs for the wipe application and 4 five-gallon buckets were used in the immersion operation. Lab testing found two products that worked for the company in these applications, Gemtek SC Actisolv and Buckeye Shopmaster RC. An ultrasonic unit was brought on-site for piloting. The equipment was set up in their second-floor lab and EH&S area. During the preheating process, the lab toured the facility, focusing on the cleaning process. They were using acid and caustic baths treatments of the parts and then paint them different colors. The painted parts were not the same as the parts delivered to the lab for testing. However, the painted parts were more typical of what the company was looking to have cleaned, removing the red lacquer from the painted parts. The company wanted to see how the ultrasonic energy and solutions acted on the paint. This was critical and was missing from the original lab testing. The lab figured it would take the ultrasonics and solutions about 20 – 30 minutes to remove the lacquer. The company was currently letting the parts sit in MEK as long as needed, about 12 hours. They had 4 five-gallon buckets in row that went from more to less contaminated with lacquer in them.
Results:	During the on-site lab testing, the company brought workers up from the wipe application to ask questions and observe. The president of the company came in for a while as well. During cleaning, the workers did not like the smell of the products so much and complained that it may take more effort to remove the lacquer over all using the wipe applications. At that point the president said that the company was making a switch due to air emissions and VOC's from the MEK and that a new ventilation system to allow them to keep using the MEK was not cost effective. He also understood that a new cleaner would be less flammable and have a better EH&S profile for the workers since they had exposure. Periodically the parts were removed from the cleaning to see the progress of the lacquer removal. The company staff seemed pleased with both products. Inspections were also looking for any damage to the integrity of the ink coating on the part, pitting, change in appearance or obvious removal of the paint. The Actisolv, which the workers liked the least in terms of smell, started to take off the black paint. This concerned the company workers. There was some debate on if the removal was harming the coating or not and how the parts felt, if that was good or not. Some workers said the parts felt tacky or slick and some said they looked iridescent.
Summary:	
Conclusion:	At the end of the on-site cleaning, the company requested to keep the two small units for a month and keep the remainder of the gallon of each product so they could continue more testing in house.