CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2009
DateRun:	01/13/2009
Experimenters:	Heidi Wilcox
ClientType:	Wire & Cable Mfr
ProjectNumber:	Project #2
Substrates:	Copper, Glass/Quartz, Plastic
PartType:	Coupon
Contaminants:	Coatings, Silicones
Cleaning Methods:	Immersion/Soak
Analytical Methods:	
Purpose:	To replace hazardous solvents including TCE and MEK for various cleaning applications.
Experimental Procedure:	To conduct an on site consultation of cleaning process, collect samples and determine course of action.
Results:	The applications are for cable assemblies for military equipment and vessels. They take cable supplied by others, put together the cable assembly ends that include glass, pins and other parts and also mold poly u and other types of materials as part of the assembly. They need to clean the molds they use of many contaminants such as mold releases, silicone, poly u and other primers. The operation consisted of bench tops that have small containers of solvents in bottles on these bench tops that are used by many workers. Maybe 4 – 8 ounces of solvents per closed container. No visible signs of any open containers, but this application had the potential for high exposure. The facility had two hoods that contained many metal beakers, red buckets with solvents in them. There also was an ultrasonic tank that with beakers of MEK and IPA in it. Workers come over with a part, use tongs to put the part in a bucket of TCE, swished the part around, pulled it out and then dried with compressed air. Worker did wear gloves, goggles and kept the part under the hood with the shield lowered. TCE and MEK was used to tackify the ends of cable so their assemblies and be adhered to the cable. This is very important, if the assembly does not adhere well it needs to be removed and sometimes remolded. The company has investigated other chemical options. They have liked the Vertrel HFC products for tackification and cleaning despite the higher costs. For glass sealing or parts that have this as part of it, they use a Mirachem automated aqueous line. There is one wash, a passivation and many rinse tanks in the system. It is open topped and has a programmable arm to move the trays along. Along with this system they have put a closed loop water system in the back room where they recycle, clean and reuse the water in the cleaning line. The EHS officer said this process was very time intensive and they have taken assigned a designated employee to run this operation. This person has been doing research into other cleaning options. It was brought up more then once that they are considering vapor degreasing. Parts are generally cleaned more than once during manufacture and the contaminants can vary and include; silicone, oil, grease, caulk fast orange, poly u, primers, mold release etc. Basically parts are cleaned in TCE and Molds are cleaned with MEK, they switched from methylene chloride to MEK at some point.
Summary:	
Conclusion:	The lab would follow up with a list of items that will be needed for the various identified project they want to address. The company will then prioritize the projects to determine how to proceed. The lab will return to pick up supplies in a week or so.