CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1995
DateRun:	07/18/1995
Experimenters:	Donald Garlotta, Jay Jankauskas
ClientType:	Adhesive Manufacturer
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Part
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Metal fines, Oil
Cleaning Methods:	Ultrasonics
Analytical Methods:	Visual, microscopic
Purpose:	Test effectiveness of AW Chesterton KPC 820N
Experimental Procedure:	The purpose of this trial is to test the effectiveness of the AW Chesterton, KPC 820N in removing the machining fluids and metal fines from their pump seals. The second purpose is to see which mechanical method is better, either ultrasonics or low pressure spray. Part #1 was cleaned in the Crest Ultrasonic unit for 15 minutes at 130 F. The first rinse was a tap water rinse for two minutes at 130 F. The second rinse was in DI water for 2 minutes at room temperature. Drying was done under air knives for two minutes, and then in a convection oven for 30 minutes set at 145 F. During the trial it was determined that the ultrasonics was ineffective for this part, so the part was then cleaned with the Greymills unit under the same conditions as Part #2. Part #2 was cleaned in the Greymills low pressure wash station. Cleaning was done for 5 minutes at 110 F with the aid of a nylon brush and a cleaning wire. The same rinsing and drying parameters were used for both parts. After drying, the parts were examined under the microscope to look for any microscopic metal fines.
Results:	Part #1- Due to the part's configuration, the metal fines were not removed from the screw holes during cleaning, most of the larger fines were able to be removed during rinsing with some hand aggitation, but quite a few still remained. Examination under the microscope showed an excessive amount of fines. This part was then washed in the Greymills unit under the same conditions of Part #2. With a little bit of brushing all of the visible fines came off. When examined with the microscope, the part looked very clean. Part #2- It only took five minutes to clean the part visibly clean. Under the microscope it looked very clean especially in the screw threads and the blind holes. There were a couple of fines noticed in the groove on one side of the seal, but these could be removed with a little more brushing.

Summary:

Substrates:	Stainless Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Metal fines, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
AW Chesterton	KPC 820 N	4	0.00	☑	

Conclusion:

Although ultrasonics was very sucessful in the previous trials, it was very ineffective today. Ultrasonics would be a viable method if all of the pump seals were the same shape and size. Due to the different configurations of the blind holes, the parts would have to be rotated every once in a while so that the ultrasonic enery would be able to clean them effectively.
The low pressure spray was fast, effective and easier to use and definately should be considered by Adhesive Manufacturer.