CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1998
DateRun:	01/22/1998
Experimenters:	Jason Marshall, Prashant Trivedi
ClientType:	Manufacturers of Surgical Tools and Equipments
ProjectNumber:	Project #1
Substrates:	Stainless Steel
PartType:	Coupon
Contaminants:	Buffing/Polishing Compounds, Cutting/Tapping Fluids, Lubricating/Lapping Oils, Fingerprints, Oil
Cleaning Methods:	Ultrasonics
Analytical Methods:	Black light, Visual, microscopic
Purpose:	Further evaluation on more supplied parts
Experimental Procedure:	The purpose of the experiment was to further test the cleaning capabilities of W.R. Grace's Daraclean 282 on more of the client's parts. A five percent volumetric solution was made in a one liter beaker. Ten parts were cleaned using the 40kHz ultrasonic tank for five minutes. Half way through the cleaning, the parts were inverted to allow for complete cleaning of the parts. Rinsing was done in a beaker in tap water at 120 F for two minutes with inversion taking place again at the midpoint. The parts were dried with an Original Disc Furnace portable heater, Model # 1500IV, until the parts were completely dry on visual inspection. Five of the samples were over contaminated with the cutting oil. The cutting oil was determined to fluoresce under black light, therefore these five parts were inspected visually and under the black light. The other five were examined under a microscope before and after cleaning. All of the cleaned parts were to be shipped back to the client to determine if the parts would meet their needs. SUBSTRATE MATERIAL: Stainless Steel 455 CONTAMINANTS: Buffing compound, machining oils, fingerprints
Results:	The five parts that were over contaminated fluoresced under the black light before they were cleaned. After cleaning, the parts did not fluoresce. These parts appeared to be very clean. The other parts observed under the microscope prior to cleaning showed several smudges along the outside. Inside the large opening there appeared to be quite a few black spots. A lot of buffing compound built up along the grooves of the large end. After the cleaning cycle, the contaminants were no longer visible under the microscope. As the parts were placed into the cleaning solution, removal of the contaminants was almost instantaneous. It was estimated that most of the cleaning to happened within the first few minutes.

Summary:

Substrates:	Stainless Steel				
Contaminants:	Buffing/Polishing Compounds, Cutting/Tapping Fluids, Lubricating/Lapping Oils, Fingerprints, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Magnaflux	Daraclean 282	5	0.00	☑	

Conclusion: Both sets of parts cleaned were free from any visual contamination. The samples were immediately packaged in plastic bags and sealed in order to ensure their cleanliness would remain until they can be examined by the clients.
It was noted that on of the samples had some water remaining inside its shaft. The water seeped out of the part as it was being placed into the bag resulting in smudging on the shaft. The drying method used was not the same method as the clients due to the laboratory's broken air compressor. The excess water may be eliminated through the use of an air knife or vacuum drying.