CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2001
DateRun:	04/04/2001
Experimenters:	Jason Marshall
ClientType:	Electromagnetic Manufacturer
ProjectNumber:	Project #1
Substrates:	Alloys, Ceramics
PartType:	Coupon
Contaminants:	None
Cleaning Methods:	
Analytical Methods:	Goniometry
Purpose:	To measure critical surface tension of wetting by contact angle.
Experimental Procedure:	To turn on the laser two keys are needed. The key with two prongs goes into the back of the laser. The other key goes in the front of the laser. Turn on the unit by turning the front key to the on position. Before measurement, the angle measurement card must be calibrated with the laser. The laser should hit the measurement card directly in the center. When calibrating do not turn the laser from side to side because it will affect results. Then place the sample onto the sample stand. Adjust the stand so that the laser skims the surface of the sample. This will happen when the laser creates a line across the surface of the sample. When the laser skims the sample surface a vertical line should be on the measurement card. Adjust the card so that the line starts at the center of the card and goes directly along the 0 line. If the line is bent this means that the sample is not level and it must be adjusted. Once calibrated, place a 2 microliter drop on the surface of the sample with the syringe. Move the sample with the control knobs so that the laser skims over the surface of the sample and through the location where the water droplet meets the sample surface. Two lines should appear on the measurement card. The angle between these two lines is the angle of contact between the water droplet and the sample. SUBSTRATE MATERIAL: Ceramic chips, metal foil
Results:	Several readings were made on both substrates.

Substrate	Fluid	Contact Angle
Metal Foil	Water	60
Metal Foil	Blend #1	60
Metal Foil	Blend #2	57
Metal Foil w/Treatment A	Water	67
Metal Foil w/Treatment B	Water	34
Ceramic w/Treatment X	Water	67
Ceramic w/Treatment Y	Water	41

Summary:

Conclusion: Treatment B and Y both had lower contact angle measurements.