

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006  
 DateRun: 09/07/2006  
 Experimenters: Jason Marshall  
 ClientType: General  
 ProjectNumber: Project #2  
 Substrates: Plastic  
 PartType: Part  
 Contaminants: Inks, Paints  
 Cleaning Methods: Ultrasonics  
 Analytical Methods: Visual

Purpose: To evaluate supplied alternative product on removing coating from golf ball

Experimental Procedure: The product used at full strength and was heated to 120 and 150 F in a 40 kHz ultrasonic tank. One golf ball was cleaned at each temperature for 40 minutes. At ten minute intervals of the cleaning, the ball was rinsed in a tap water spray for 15 seconds at 120 F and wiped dry with a paper towel. Observations were made and compared to the client's current cleaner.

| Temp | Time | Observation                                      |
|------|------|--|
| 120  | 10   | No signs of removal                              |
| 120  | 20   | Some ink could be wiped off                      |
| 120  | 30   | Some coating removed                             |
| 120  | 40   | Not shiny but still had ink remaining            |
| 150  | 10   | Comparable to the 40 minutes of cleaning at 120F |
| 150  | 20   | Still not a lot of ink removal                   |
| 150  | 30   | Coating "cracking" and ink was dull              |
| 150  | 40   | Lots of "cracking" in the coating                |

|                      |                      |               |                    |                                     |                      |
|----------------------|----------------------|---------------|--------------------|-------------------------------------|----------------------|
| <b>Substrates:</b>   |                      | Plastic       |                    |                                     |                      |
| <b>Contaminants:</b> |                      | Inks, Paints  |                    |                                     |                      |
| <b>Company Name:</b> | <b>Product Name:</b> | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |
| WSI Industries       | N Terpinal RS 98     | 100           | 0.00               | <input type="checkbox"/>            |                      |
| WSI Industries       | N Terpinal RS 98     | 100           | 0.00               | <input checked="" type="checkbox"/> | Partially successful |

Conclusion: Neither temperature resulted in a complete removal of the ink and paint from the golf ball after 40 minutes of ultrasonic cleaning.