

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006
 DateRun: 05/21/2006
 Experimenters: Jason Marshall
 ClientType: General
 ProjectNumber: Project #2
 Substrates: Plastic
 PartType: Part
 Contaminants: Inks, Paints
 Cleaning Methods: Ultrasonics
 Analytical Methods: Visual

Purpose: To evaluate additional products for removing paint and ink from supplied parts

Experimental Procedure: Individual products and mixture of products were used at various concentrations. Each product/mix was heated to 150 F in a 40 kHz ultrasonic tank. One golf ball was cleaned in each solution for 30 minutes. At the end 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. An additional 30 minutes of cleaning was included if the alternative started to remove the paint and ink.

| Alternative | Observation |
|--------------------------------|--|
| D Zolve 1012 @10% | No visual effect |
| D Zolve 1012 @50% | Some removal of ink - ball still shiny |
| Metabolix E3HB | Some removal, not as shiny, ink coming off |
| Metabolix & Actisolv 50-50 mix | Good removal, ink very faded |
| Inproclean 4000 T 30% | Followed with 20 minutes of cleaning with |
| | Metabolix & Actisolv mix - did not improve |
| | cleaning |
| Soy Cleaner 180 D | No removal |
| DFC Degreaser | No removal |
| Actisolv & Inproclean & Water | Paint flaking off with some ink removal |
| 50%-15%-35% | Additional 30 minutes had lots of paint |
| | flaking off and ink nearly gone |
| | Not completely cleaned |

Summary:

| Substrates: | | Plastic | | | |
|--------------------------------|----------------------------|--------------|-------------|-------------------------------------|--------------------------------------|
| Contaminants: | | Inks, Paints | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Oakite Products | Inproclean 4000 T | 30 | 0.00 | <input type="checkbox"/> | |
| Sysco Corporation | Soy Cleaner 180 D | 100 | 0.00 | <input type="checkbox"/> | |
| Cogent Environmental Solutions | DFC Degreaser | 100 | 0.00 | <input type="checkbox"/> | |
| Gemtek Products | SC Actisolv Safety Solvent | 50 | 0.00 | <input checked="" type="checkbox"/> | Mix with Inproclean 4000 T and water |
| Transene Company, Inc. | D Zolve 1012 | 10 | 0.00 | <input type="checkbox"/> | |
| Transene Company, Inc. | D Zolve 1012 | 50 | 0.00 | <input type="checkbox"/> | |
| Metabolix Inc | Metabolix E3HB | 100 | 0.00 | <input type="checkbox"/> | |
| Metabolix Inc | Metabolix E3HB | 50 | 0.00 | <input checked="" type="checkbox"/> | Mix with Actisolv |

Conclusion: Despite some of the products having moderate success when mixed with other successful products, nothing worked as well as the current solvent.