

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2006

DateRun: 05/08/2006

Experimenters: Jason Marshall

ClientType: General

ProjectNumber: Project #1

Substrates: Steel

PartType: Part

Contaminants: Paints

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: To evaluate selected products on cleaning supplied parts.

Experimental Procedure: Three selected products were diluted to 5% using DI water and one was used at full strength in 600 ml beakers. The cleaning solutions were heated to 130 F in an ultrasonic tank.

The supplied parts were coated with RPM Wood Finishes Group paint mixtures. One end of spindle was immersed into a cleaning product and cleaned for 30 minutes using a 40 kHz ultrasonic tank. Visual observations were made at 5, 10, 20 and 30 minutes. After the cleaning, the part was rinsed in a tap water spray for 15 seconds at 120 F and air dried for 30 seconds at room temperature. The parts were then rubbed with a gloved hand to determine how easily the paint could be removed.

Due to the number of supplied parts with this paint type, one spindle was cleaned in two products, one per each end. The cleaning solution that worked the best was then used to re-clean the opposite end so that the supplied part was eventually cleaned by one product.

Results: Each of the four products removed some of the paint from the supplied parts. The observations made for each product are listed in the table below.

| Cleaner           | Time | End      | Observations                             |
|-------------------|------|----------|--|
| Solsafe 245       | 5    | 1-Points | Started to dissolve paint, became cloudy |
|                   | 10   |          | Paint "bubbling" from surface            |
|                   | 20   |          | Paint was peelable                       |
|                   | 30   |          | Paint could be brushed off               |
| Inproclean 4000 T | 5    | 1-Base   | Removed oil and some of the paint        |
|                   | 10   |          | Paint removed from base                  |
|                   | 20   |          | Paint removed from middle plate          |
|                   | 30   |          | Nearly clean                             |
| A 2000 XS         | 5    | 2-Points | Started dissolving paint                 |
|                   | 10   |          | Some peeling                             |
|                   | 20   |          | Paint smeared when wiped                 |
|                   | 30   |          | Could be brushed off                     |
| Surface Cleanse   | 5    | 2-Base   | Some oil removal                         |
|                   | 10   |          | Could wipe paint off                     |
|                   | 20   |          | Good paint removal - less than 4000 T    |
|                   | 30   |          | Some paint remaining                     |
| Re-Cleaned        |      |          |  |
| Inproclean 4000 T | 5    | 1-Points | Brush off paint                          |

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|                 |    |          |                                     |
|-----------------|----|----------|-------------------------------------|
|                 | 10 |          | Peel paint off                      |
|                 | 20 |          | Area with thick paint still coated  |
|                 | 30 |          | Scrape off paint - Most effective   |
| Surface Cleanse | 5  | 2-Points | Some removal                        |
|                 | 10 |          | Brush paint off                     |
|                 | 20 |          | Still paint remaining               |
|                 | 30 |          | Areas with thick paint still coated |

Summary:

|                                    |  |               |                    |                                     |                      |  |
|------------------------------------|--|---------------|--------------------|-------------------------------------|----------------------|--|
| <b>Substrates:</b>                 |  | Steel         |                    |                                     |                      |  |
| <b>Contaminants:</b>               |  | Paints        |                    |                                     |                      |  |
| <b>Company Name:</b>               | <b>Product Name:</b>                     | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |  |
| Bio Chem Systems                   | Solsafe 245                              | 100           |                    | <input type="checkbox"/>            |                      |  |
| Oakite Products                    | Inproclean 4000 T                        | 5             |                    | <input checked="" type="checkbox"/> |                      |  |
| US Polychem Corporation            | Polychem A 2000 XS                       | 5             |                    | <input type="checkbox"/>            |                      |  |
| International Products Corporation | Surface Cleanse Concentrated Neutral 930 | 5             |                    | <input checked="" type="checkbox"/> |                      |  |

Conclusion:

Inproclean 4000 T had the most success followed by Surface Cleanse 930. Photos of before and after have also been included on the following page.