

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2015
 DateRun: 02/24/2015
 Experimenters: Luis Raudales
 ClientType: General
 ProjectNumber: Project #1
 Substrates: Stainless Steel
 PartType: Coupon
 Contaminants: Paints
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Visual

Purpose: To evaluate five paint cleaner products for manual removal of paint from stainless steel coupons.

Experimental Procedure: Fifteen pre-weighted coupons were double coated with the supplied paint. Once dried, a second weight was recorded to determine the amount of paint added to the coupon. In groups of three, the coupons were then submerged in five beakers with 120 ml of different liquid paint cleaners (strippers). Three coupons were submerged in each beaker for 5 minutes and cleaned with a plastic scrapper. Each coupon was scrapped slowly three times. The coupons were then rated for the paint removal at that point. Then, they were submerged again in the beaker. This process was repeated every 5 minutes for a total time of 30 minutes. All these products were used at full strength and room temperature, except for D-Zolve 917, which was used at a concentration of 10% diluted in water. The coupons were overnight dried, and a third weight was recorded to determine the amount of paint was removed and efficiency was calculated.

Visual Performance ranking:

- 1) Excellent Total Removal
- 2) Good Removal
- 3) Fair Removal
- 4) Soften Paint
- 5) No Removal

| Cleaner | 5 min | 10 min | 15 min | 20 min | 25 min | 30 min |
|------------------|-------|--------|--------|--------|--------|--------|
| Zemosol | 4 | 4 | 2 | 1 | 1 | 1 |
| Green Strip #10 | 3 | 2 | 2 | 2 | 1 | 1 |
| D Zolve 917 | 5 | 5 | 5 | 5 | 5 | 5 |
| Sky Kleen | 5 | 4 | 4 | 4 | 3 | 3 |
| Graffiti Remover | 4 | 3 | 3 | 3 | 3 | 3 |

Summary:

| Substrates: | | Stainless Steel | | | |
|--------------------------------|---------------------------------------|-----------------|-------------|-------------------------------------|---------------|
| Contaminants: | | Paints | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| TBF Environmental Technologies | ZemaSol | | | <input checked="" type="checkbox"/> | |
| Chimista Specialty Chemicals | GreenStrip 10 Biobased paint stripper | | | <input checked="" type="checkbox"/> | |
| Solutia | Sky Kleen 1000 (Aviation Solvent) | | | <input checked="" type="checkbox"/> | |
| Twin Rivers Technologies | Graffiti Remover | | | <input checked="" type="checkbox"/> | |
| Transene Company, Inc. | D Zolve 917 | 10 | | <input type="checkbox"/> | |

Conclusion: Zemazol Avoc presented the higher efficiency by separating the paint from the coupon and Chimista # 10 by dissolving it; both begun to work by the first five minutes of the test. Graffiti Remover and Sky kleen both worked by dissolving the paint, beginning their efficiency close to the 20-minute marker during the test. D-Zolve 917 did not remove the paint after the experiment concluded.

Future testing may require increasing the cleaner temperature to analyze the impact on efficiency and also the use of a napkin to remove the excess of cleaner before it gets mixed with the paint prior the overnight drying period.