

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1997
 DateRun: 07/29/1997
 Experimenters: Jason Marshall, Prashant Trivedi
 ClientType: Machine Construction Company
 ProjectNumber: Project #1
 Substrates: Stainless Steel
 PartType: Coupon
 Contaminants: Coatings
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric
 Purpose: Petroleum based rust preventative trial.

Experimental Procedure: Eighteen (18) coupons were weighed after being precleaned. The coupons were then contaminated with the rust preventive compound and placed in an conventional oven at 100 F for two hours. The coupons were allowed to reach room temperature and weighed. The same six chemistries from the pervious trial were used using the same operating conditions.

SUBSTRATE MATERIAL: Stainless Steel
 CONTAMINANTS: Tectyl 506, Petroleum based rust preventative

Results:

| % Contaminant Removed | | | | | | |
|-----------------------|---------|-----------|--------|---------|-----------|--------|
| Product | AK-6215 | Precision | 2000XS | SP 2200 | Blue Gold | 625-XL |
| | 99.90 | 41.60 | 14.80 | 26.70 | 14.10 | 10.90 |
| | 98.40 | 36.50 | 61.70 | 38.90 | 11.50 | 11.90 |
| | 100.00 | 12.10 | 23.40 | 19.90 | 10.50 | 14.90 |
| Average | 99.43 | 30.07 | 33.30 | 28.50 | 12.03 | 12.57 |
| Std Dev | 0.90 | 15.77 | 24.97 | 9.63 | 1.86 | 2.08 |

Summary:

| | | | | | | | |
|-------------------------|-----------------|------------------------------------|--|--------|-------------|-------------------------------------|---------------|
| Substrates: | Stainless Steel | | | | | | |
| Contaminants: | Coatings | | | | | | |
| Company Name: | | Product Name: | | Conc.: | Efficiency: | Effective: | Observations: |
| LPS Laboratories | | Precision Clean Concentrate | | 5 | 30.07 | <input type="checkbox"/> | |
| Quaker Chemical | | Formula 625 XL | | 5 | 12.57 | <input type="checkbox"/> | |
| Calgon Corporation | | AK 6215 | | 5 | 99.43 | <input checked="" type="checkbox"/> | |
| Carroll Company | | Blue Gold Heavy Industrial Cleaner | | 5 | 12.03 | <input type="checkbox"/> | |
| US Polychem Corporation | | Polychem A 2000 XS | | 5 | 33.30 | <input type="checkbox"/> | |
| Valtech Corporation | | Valtron SP 2200 | | 5 | 28.50 | <input type="checkbox"/> | |

Conclusion:

Calgon's AK-6215 cleaner solution was by far the most effective in the removal of the hard rust preventive substance. The solution had very good cleaning capabilities in the previous trial as well, 99.3% removal of the slushy, rust-preventive substance. Also the solution was able to be filtered quite readily, which would result in a longer bath life. From the results of the two experiments, Calgon AK-6215 appears to be the best cleaner for use in cleaning both rust-preventive materials. The next step in testing for Morgan will be to test cleaners for the removal of the final contaminant.