

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020
 DateRun: 09/14/2020
 Experimenters: Zoe Lawson, Justin Kiander
 ClientType: Metal Finishing
 ProjectNumber: Project #1
 Substrates: Steel
 PartType: Coupon
 Contaminants: Oil
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric, Visual

Purpose: The purpose of this experiment was to confirm removal results from Trial #8.

Experimental Procedure: Three general steel TURI coupons were obtained for each of the four cleaners tested. The cleaners were prepared to the following conditions: Metalnox 6386 100% concentration room temperature, Mirachem 500 20% concentration 110°F, SC Aircraft & Metal Cleaner 20% concentration 130°F, and Shopmaster LPH 20% concentration 130°F. An initial weight was recorded for each coupon, then coupons were soiled with the Vanishing Oil provided by the company. A soiled weight was recorded and coupons were then submerged into their respective cleaners for 15 minutes. After 15 minutes had passed, cleaners were submerged into a deionized water bath at 115°F for 20 seconds. Coupons were then dried using the hot air gun and a cleaned weight was obtained. Effectiveness of cleaners was then determined.

| Cleaner | Initial wt of cont | Final wt of cont | %Cont Removed | %AVG |
|-----------------------------|--------------------|------------------|---------------|--------|
| Metalnox 6386 | 0.0364 | 0.0032 | 91.21 | 92.87 |
| | 0.0418 | 0.0059 | 85.89 | |
| | 0.0663 | -0.0010 | 101.51 | |
| Mirachem 500 | 0.0612 | 0.0018 | 97.06 | 100.85 |
| | 0.0526 | -0.0015 | 102.85 | |
| | 0.0265 | -0.0007 | 102.64 | |
| SC Aircraft & Metal Cleaner | 0.0315 | -0.0001 | 100.32 | 78.5 |
| | 0.0232 | -0.0006 | 102.57 | |
| | 0.0046 | 0.0031 | 32.61 | |
| Shopmaster LPH | 0.0091 | -0.0017 | 118.68 | 106.71 |
| | 0.0400 | -0.0028 | 107.00 | |
| | 0.0289 | 0.0016 | 94.46 | |

| | | | | | | |
|----------|-----------------------|-----------------------------------------------|---------------|--------------------|-------------------------------------|----------------------|
| Summary: | Substrates: | Steel | | | | |
| | Contaminants: | Oil | | | | |
| | Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| | Kyzen Corporation | Metalnox M6386 | 100% | 92.87 | <input checked="" type="checkbox"/> | |
| | Mirachem Corporation | Mirachem 500 | 20% | 100.85 | <input checked="" type="checkbox"/> | |
| | Gemtek Products | SC Aircraft & Metal Cleaner Super Concentrate | 20% | 78.50 | <input type="checkbox"/> | |
| | Buckeye International | Shopmaster LPH | 20% | 106.71 | <input checked="" type="checkbox"/> | |

Conclusion: Shopmaster LPH was the most effective cleaner removing an average of 106.71% of soil from the steel coupons. Mirachem 500 was the second most effective removing an average of 100.85%, and Metalnox 6386 was the third most effective removing an average of 92.87. The next steps would be to test on company steel coupons.