

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2022
 DateRun: 02/24/2022
 Experimenters: Nicole Kebler
 ClientType: General
 ProjectNumber: Project #2
 Substrates: Galvanized Steel
 PartType: Part
 Contaminants: Oil
 Cleaning Methods: Ultrasonics
 Analytical Methods: Gravimetric, Visual
 Purpose: To evaluate the removal of Oak 15A-1 from Galvanized Steel.

Experimental Procedure: Three parts per cleaner were weighed for initial weights. They were then dipped in the Oak 15A-1 oil and all excess oil was allowed to drip off. They were then weighed for dirty weights. The cleaners were heated to their vendor recommended temperatures and were placed in the heated ultrasonics tank. Three coupons per cleaner were immersed and the ultrasonics tank was run for 15 minutes at 40 KhZ. They were then placed on trays and left to dry overnight. After drying, they were weighed for clean weights.

Results: None of the cleaners performed over 90% removal effectiveness. Shopmaster had an average removal of 75%. Water works had a removal of 55% and Mirachem 500 removed an average of 86%. SC Aircraft had an effectiveness of 36% and was the lowest percentage removal.

| Cleaner | Conc | Temp | Initial wt. of cont. | Final wt. of cont. | Average | Combined Average |
|----------------|------|-------|----------------------|--------------------|---------|------------------|
| Shopmaster LPH | 20% | 140 F | 0.2804 | 0.0736 | 73.75 | 75.35 |
| | | | 0.4291 | 0.0791 | 81.57 | |
| | | | 0.4627 | 0.1354 | 70.74 | |
| Water Works | 33% | 105 F | 0.3211 | 0.0823 | 74.37 | 54.67 |
| | | | 0.1528 | 0.1278 | 16.36 | |
| | | | 0.3483 | 0.0931 | 73.27 | |
| Mirachem 500 | 33% | 140 F | 0.9739 | 0.0435 | 95.53 | 86.24 |
| | | | 0.3435 | 0.0375 | 89.08 | |
| | | | 0.3408 | 0.0883 | 74.09 | |
| S.C. Aircraft | 25% | 140 F | 0.3565 | 0.0942 | 73.58 | 36.23 |
| | | | 0.2157 | 0.1054 | 51.14 | |
| | | | 0.0792 | 0.0919 | -16.04 | |

Summary:

| Substrates: | | Galvanized Steel | | | |
|-----------------------|---|------------------|-------------|--------------------------|--|
| Contaminants: | | Oil | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Buckeye International | Shopmaster | 20% | 75.00 | <input type="checkbox"/> | Shopmaster was not effective for the removal of oil from Galvanized Steel. |
| Keteca USA | Water Works Heavy Duty Degreaser | 33% | 55.00 | <input type="checkbox"/> | Water Works was not effective for the removal of oil from Galvanized Steel. |
| Mirachem Corporation | Mirachem 500 | 33% | 86.00 | <input type="checkbox"/> | Mirachem 500 was not effective for the removal of oil from Galvanized Steel. |
| Gemtek Products | SC Aircraft & Metal Cleaner Super Concentrate | 25% | 36.00 | <input type="checkbox"/> | SC Aircraft was not effective for the removal of oil from Galvanized Steel. |

Conclusion: None of the cleaners were effective for the removal of oil from galvanized steel. Next steps are to adjust concentration, time, and temperature to try to increase effectiveness of the removal of oil from Galvanized Steel.