CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2022

DateRun: 02/24/2022

Experimenters: Nicole Kebler

ClientType: General

ProjectNumber: Project #2

Substrates: Galvinized 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:	Galvinized Steel
Contaminants:	Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Buckeye International	Shopmaster	20%	75.00	☐	Shopmaster was not effective for the removal of oil from Galvanized Steel.
Keteca USA	Water Works Heavy Duty Degreaser	33%	55.00	☐	Water Works was not effective for the removal of oil from Galvanized Steel.
Mirachem Corporation	Mirachem 500	33%	86.00	☐	Mirachem 500 was not effective for the removal of oil from Galvanized Steel.
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	25%	36.00	☐	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.