CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 12/20/2021

Experimenters: Nicole Kebler

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Carbon Steel

PartType: Part

Contaminants: Oil

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate industrial cleaners for the removal of oil from provided carbon steel contaminated parts.

Experimental Procedure: The cleaners were put into beakers and heated to 140 F in the ultrasonics tank. The coupons were weighed for dirty weights and once the cleaners were at the correct temperatures, the coupons were put into the beakers. The ultrasonics tank was turned on and ran for 15 minutes. The coupons were taken out and left to dry fully. Once dry, the clean weights were taken. The coupons were cleaned again till all remaining oil was removed from the coupons and the initial weights were taken. The ultrasonics tank was run at 40 KHz.

Results: All cleaners were effective at removing the oil from the surface of the parts and all had over a 99% removal effectiveness. Visually Surface Cleanse out performed the others and did not have many residual spotting left on the surface whereas the Mirachem and Micro 90 had some spotting left on the surface of the part.

Cleaner	Initial wt. of cont.	Final wt. of cont.	Average
Mirachem 2:1	0.2032	0.0013	99.36
Micro 90 2%	0.1880	0.0006	99.68
Surface Cleanse 2%	0.2326	0.0006	99.74

Summary:

Substrates:	Carbon Steel				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Mirachem Corporation	Mirachem 500	67	99.36	☑	
International Products Corporation	Micro 90 Conc.	2	99.68	☑	
International Products Corporation	Surface Cleanse Concentrated Neutral 930	2	99.74	☑	

Conclusion: Additional testing with a rinse step for Mirachem and Micro 90 is needed to try and minimize spotting. Next steps are to clean coupons with Surface Cleanse and send them out to the company to test for adhesion performance.