CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2022

DateRun: 02/24/2022

Experimenters: Nicole Kebler

ClientType: General

ProjectNumber: Project #2

Substrates: Alloys

PartType: Part

Contaminants: Oil

Cleaning Methods: Ultrasonics

Analytical Methods: Gravimetric, Visual

Purpose: To evaluate the removal of Milform FB 941-A oil from Hastelloy substrate.

Experimental Procedure: Three parts per cleaner were weighed for initial weights. They were then dipped in the Milform FB 941-A 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: All cleaners were effective for the removal of oil from Hastelloy parts. All had above a 99% average removal effectiveness. Some of the coupons were slick to the touch.

Cleaner	Conc.	Temp	Initial wt. of cont.	Final wt. of cont.	Average	Combined Average
Shopmaster LPH	20%	140 F	0.5767	0.0021	99.64	99.29
			0.5178	0.0036	99.30	
			0.6477	0.0069	98.93	
Water Works	33%	105 F	0.4817	0.0046	99.05	99.43
			0.4945	0.0026	99.47	
			0.5374	0.0013	99.76	
Mirachem 500	33%	140 F	0.9151	0.0141	98.46	99.08
			0.9781	0.0040	99.59	
			0.5544	0.0045	99.19	
S.C. Aircraft	25%	140 F	0.9842	0.0082	99.17	98.56
			0.3166	0.0082	97.41	
			0.6346	0.0057	99.10	

Summary:

Substrates:	Alloys
Contaminants:	Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Buckeye International	Shopmaster	20%	99.00	☑	Shopmaster LPH was effective for the removal of oil from Hastelloy.
Keteca USA	Water Works Heavy Duty Degreaser	33%	99.00	☑	Water Works was effective for the removal of oil from Hastelloy.
Mirachem Corporation	Mirachem 500	33%	99.00	☑	Mirachem 500 was effective for the removal of oil from Hastelloy.
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	25%	99.00	☑	SC Aircraft was effective for the removal of oil from Hastelloy.

Conclusion: All cleaners were effective for the removal of oil. SInce some were still slick to the touch, additional testing including changing temperature and concentration would be next steps to achieve optimal removal of oil.