CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2021

DateRun: 02/17/2021

Experimenters: Nicole Kebler

ClientType: Bolt, Screw & Nut Manufacturer

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Greases

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Visual

Purpose: To test the removal of grease from aluminum coupons with heated immersion for 30 minutes using stir bar.

Experimental Procedure: A 50% solution was created for Water Works and Dimethyl Glutarate was used at 100%. Three aluminum coupons per cleaner were pre-weighed for initial weights. They were then soiled 1/3 of the way with black grease that was given to us by the company and were weighed for dirty weights. The solutions were all heated on the hot plate till they reached 105 degrees Fahrenheit. Three coupons per cleaner were placed in the solutions and immersed for 30 minutes with a stir bar at 300 rpm. They were then left to dry for over an hour and final weights were taken.

Cleaners:

1. 100% Dimethyl Glutarate
2. 50% Water Works

Results: Both cleaners were not effective at removing grease from aluminum. Dimethyl glutarate averaged around 47% and Water works was lower at 37%.

Cleaner	Initial wt of cont	Final wt of cont	% removal	Average
Dimethyl Glutarate	0.2333	0.0369	84.18	47.03
	0.1249	0.1015	18.73	
	0.2227	0.1377	38.17	
Water Works	0.2646	0.1881	28.91	36.87
	0.2070	0.1429	30.97	
	0.2166	0.1067	50.74	

Summary:

Substrates:	Aluminum				
Contaminants:	Greases				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Fisher Scientific	Dimethyl glutarate (CAS:1119-40-0)	100	47.00	☐	Was not effective.
Keteca USA	Water Works Heavy Duty Degreaser	50%	37.00	☐	Was not effective.

Conclusion: Both cleaners were not effective. Next steps are to use ultrasonics with heated immersion.