CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2020
DateRun:	02/09/2020
Experimenters:	Kaley Richards
ClientType:	Metal Finishing
ProjectNumber:	Project #1
Substrates:	Steel
PartType:	Coupon
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil
Cleaning Methods:	Ultrasonics
Analytical Methods:	Visual
Purpose:	To determine the effectiveness of three aqueous cleaners in heated ultrasonics 125F.
Experimental Procedure:	Three sets of three steel coupons were soiled with vanishing oil provided by the company and were immersed into three distinct beakers containing Aquavantage 1400 GD, Liquinox, and SC-1000 respectively. Heated ultrasonics at 120-122°F for 15 minutes was used to clean the coupons. Coupons were submerged in three distinct beakers containing deionized water as a rinse step for 5 minutes. Coupons were dried with an air gun for 10 minutes. Effectiveness of cleaning was observed visually and gravimetrically after the drying step and 48 hours later.
Results:	After 15 minutes of heated ultrasonics and subsequent post-treatment, the vanishing oil was removed from the coupons cleaned with Aquavantage 1400 GD and Liquinox. A residue remained on the coupons cleaned with SC-1000, which disappeared after 48 hours of air drying.

Summary:

Substrates:	Steel				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brulin Corporation	Aquavantage 1400	5%	112.00	☑	
Alconox Inc	Liquinox	1%	127.00	☑	
Gemtek Products	SC 1000 Aqueous Cleaner Concentrate	20%	459.00	☑	

Conclusion: Based on visual and gravimetric analysis, all cleaners removed the vanishing oil, but Aquavantage 1400 GD was the most effective cleaner for removing the vanishing oil from the steel coupons. It should be noted that clean weights are consistently less than initial weights for all coupons suggesting that coupons may not have been fully clean to begin with. The next step would be to completely clean the steel coupons and conduct heated ultrasonics with more vanishing oil added.