CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2021
DateRun:	03/14/2021
Experimenters:	Zoe Lawson, Justin Kiander
ClientType:	Chemical Company
ProjectNumber:	Project #1
Substrates:	Iron
PartType:	Part
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils
Cleaning Methods:	Ultrasonics
Analytical Methods:	Visual
Purpose:	The purpose of this experiment was to continue parts testing with the final top performing alternatives.
Experimental Procedure:	Cleaners were prepared to the following concentrations: Dimethyl Glutarate 100% and Citranox 2%. Cleaners were poured into an ultrasonic basket at room temperature. Prior to cleaning, photos of the sections to be cleaned were obtained as visual reference of soil presence. A "fin" of each cast iron steel part was submerged into the respective cleaners and ultrasonic cleaning was conducted for 15 minutes. After 15 minutes had passed, the cleaned area of the part was rinsed in a deionized water bath at room temperature for 30 seconds. The part was then dried with a heat gun to remove all solution. Following the cleaning process, photos were taken as a visual reference of performance.
Results:	Overall, both alternatives were effective under the unheated ultrasonic method for cleaning the part. Citranox was observed to undergo a color change from clear to light brown, indicating removal of the soil. It was also noted that all drying times using the heat gun were extremely fast with parts dry in approximately 2 minutes. An overall ranking of the alternatives based on visual performance would be Metalnox 6386 as the best, followed by Citranox, then Dimethyl Glutarate.

Summary:

Substrates:	Iron				
Contaminants:	Cutting/Tapping Fluids, Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Fisher Scientific	Dimethyl glutarate (CAS:1119-40-0)	100%	0.00	☑	
Alconox Inc	Citranox	2%	0.00	☑	

Conclusion: Upon completion of testing, it was determined that both alternatives were effective utilizing the unheated ultrasonic method. An overall ranking of the alternatives based on visual performance would be Metalnox 6386 as the most effective, followed by Citranox, then Dimethyl Glutarate. Next steps would be to contact the company and inform them of testing results.