CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 11/01/2020

Experimenters: Justin Kiander

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Part

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: The purpose of the experiment was to refine the cleaning parameters for heated ultrasonics.

Experimental Procedure: Two solutions were prepared to the following concentrations: Metalnox 6386 100% and SC Aircraft & Metal Cleaner 30%. Solutions were added to a heated ultrasonics bath at 120°F. One aluminum mirror polish part pre-soiled with buffing compound was obtained for each cleaner. Photos were taken before cleaning as well as a white glove test to verify presence of soil. Once solutions reached the proper temperature, parts were submerged into their respective cleaners and heated ultrasonics was conducted for 15 minutes. At five-minute intervals, parts were removed from solution to take observations on the cleaning process. After 15 minutes, the part cleaned with SC Aircraft & Metal Cleaner was submerged into a deionized water bath for 30 seconds. Both parts were then dried with a heat gun and set aside for 24 hours. After 24 hours, observations of cleaning were recorded, post treatment photos were taken, and another white glove test was conducted to verify removal of soil.

Results:

Cleaner	Observations
Metalnox 6386	5 min: Buffing compound remains 10 min: Most buffing compound removed except for one small dark patch on egde 15 min: Small patch was almost entirely removed, was much lighter after additional 5 mins of cleaning No markings or streaks observed on substrate
SC Aircraft & Metal Cleaner	5 min: Buffing compound remains 10 min: Buffing compound remains on edges 15 min: Edges have been darkened, white glove test showed very little soil remains on edges but it still present No markings or streaks observed on substrate

Summary:

Substrates:	Aluminum				
Contaminants:	Buffing/Polishing Compounds				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Kyzen Corporation	Metalnox M6386	100%	0.00	☑	Almost all soil removed except for one small patch on edge. No visual markings or streaking observed.
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	30%	0.00	☑	Increasing the concentration did improve removal, small patches remain on edges of substrate. No visual markings or streaking observed. A deionized water bath after cleaning is essential.

Conclusion: Increasing concentration of SC Aircraft & Metal Cleaner did improve soil removal. Both cleaners were very effective at removing buffing compound from aluminum mirror polished parts via heated ultrasonics. Though 10 minutes removes almost all soil, 15 minutes ensures thorough cleaning. A deionized water bath

is necessary when cleaning with SC Aircraft. Next steps would be to discuss results between the company and lab management.