CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020

DateRun: 10/27/2020

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 this experiment was to determine the effectiveness of remaining cleaners on aluminum mirror polish parts using heated ultrasonics.

Experimental Procedure: Two solutions were prepared to the following concentrations: Metalnox 6386 100% and SC Aircraft & Metal Cleaner 20%. Solutions were added to a heated ultrasonics bath set to 120°F and allowed to reach the proper temperature. One aluminum mirror polish part pre-soiled with buffing compound was obtained for each of the cleaners being tested. Photos were taken before cleaning and a white glove test was conducted 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. After 15 minutes, parts were submerged into a tap water bath at 120°F for 30 seconds. 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 performed to verify soil removal.

Results:

Cleaner	Observations
Metalnox 6386	Solution changed from clear to dark grey (buffing compound being removed) Excellent removal, just some small patches on edges not cleaned, could be due to set up. Time to clean could potentially be shorter. Metalnox did not require the rinse step, it did cause streaking.
SC Aircraft & Metal Cleaner	Solution changed from clear to grey (buffing compound being removed) Most soil removed, adding wash step removed discoloration, but streaking present. Increasing concentration of solution could improve soil removal.

Summary:

Substrates:	Aluminum
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Kyzen Corporation	Metalnox M6386	100%	0.00	☑	Very small patches of buffing compound remain. Streaking was present due to being unnecessarily carried through a wash step.
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	20%	0.00	☑	Most soil removed. Wash step eliminated discoloration, but streaking was present. Rinse with deionized water could eliminate streaking. Increasing the concentration of solution could improve soil removal.

Conclusion: Both cleaners were effective at removing the buffing compound with heated ultrasonics. Next steps would be to conduct another heated ultrasonics trial checking progress of cleaning at 5 minute intervals to determine time to clean. Additionally, Metalnox cleaned part will not be rinsed in the next trial. Deionized water will be used to eliminate streaking. The concentration of SC Aircraft will be increased to improve performance.