CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2026

DateRun: 08/11/2026

Experimenters: Gabriel Salierno

ClientType: Lab

ProjectNumber: Project #17

Substrates: Aluminum

PartType: Coupon

Contaminants: Greases, Lubricating/Lapping Oils, Oil

Cleaning Methods: Vapor Degreasing

Analytical Methods: Xray fluoresence

Purpose: Data gathering to inform the formulation of a standard operating procedure for the benchtop vacuum vapor degreaser. (Identifying optimum conditions) Using Kyzen Metalnox M6381 HydroCarbon

Experimental Procedure:

Prep:

Coupons were created from aluminum foil and were then soiled with a pea sized amount of various soils by spreading the soil evenly across the surface using a cotton swab. Reflectance value data points were taken in five unique areas of the surface of each soiled coupon. The average of the five data points were recorded as the initial reflectance of each coupon.

Cleaning:

The benchtop vacuum vapor degreaser was utilized with the Metalnox M6381 HydroCarbon to clean each coupon for 15 minutes within the cleaning chamber. Once each coupon was removed, they were allowed to air dry for about 1 minute before taking clean reflectance value measurements.

rotation= 60 rpm

T condenser= 0C

T vap= 20C

Results:

The fluorescence measurement of the reference substrate is 1.5 (+/-0.3).

The recorded reflectance values of each coupon were used within an equation to generate a percentage representative of how close the clean reflectance value is to the initial reflectance value. It estimates how closely the coupons were returned to their original state after vacuum vapor degreasing. The equation is as follows

$\%=(R_{clean}-R_{dirty}/R_{initial}-R_{dirty})X100$

T (ºC)	P (mBar)	Soil	Dirty	Clean	%	Obs
130	100	J1	431 (+/-20)	1.2 (+/-0.6)	100.06%	Successful; no liquid recirculation
140	100	American lapping compound	2465 (+/-23)	2400 (+/-52)	26.39%	Failed; no liquid recirculation
140	100	Aeroshell 33	35.6 (+/-7.1)	9.3 (+/-1.1)	77.13%	Failed; no liquid recirculation
140	100	J2	126 (+/-11)	1.7 (+/-0.2)	99.84%	Successful; no liquid recirculation

Summary:

Substrates:	Aluminum				
Contaminants:	Greases, Lubricating/Lapping Oils, Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Kyzen Corporation	Metalnox M6381		100.60	☑	Soil: J1
Kyzen Corporation	Metalnox M6381		26.39	☐	Soil: American Lapping Compound
Kyzen Corporation	Metalnox M6381		77.13	☑	Soil: Aeroshell 33 Grease
Kyzen Corporation	Metalnox M6381		99.84	☑	Soil: J2

Conclusion: