CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2026

DateRun: 11/03/2026

Experimenters: Evan Hebert

ClientType: Lab

ProjectNumber: Project #17

Substrates: Aluminum

PartType: Coupon

Contaminants: Lubricating/Lapping Oils

Cleaning Methods: Immersion/Soak

Analytical Methods: Xray fluoresence

Purpose: To determine the efficacy of hydrocarbon Metalnox M6381 chemistry in removing various industrial soils without the assistance of vacuum vapor degreasing equipment.

Experimental Procedure: Three Aluminum coupons were assigned to each of 2 industrial soils; Richards-Apex #201 Lubel and Richards-Apex #226 Lube. Each coupon was weighed using a gravimetric balance and had their initial weights recorded. Each coupon was then soiled with a pea sized amount of the appropriate soil using a swab to spread it across the surface of the coupons. Each coupon was weighed again and had their dirty weights recorded. The coupons were then immersed in a beaker of the Metalnox M6381 hydrocarbon with a stir bar set to 200rpm for 10 minutes. Upon removal from the beaker, the coupons were allowed to air dry for 20 minutes before being weighed and having their final weights recorded.

Analysis:

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

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

Results:

Soil	Initial RFU	Dirty RFU	Clean RFU	%DET	AVG
Richards-Apex #201 Lube	68.2	2778.4	779.1	73.77	27.09
	136.3	2758.7	2562.2	7.49	
	68	2637.3	2637.1	0.01	
Richards-Apex #226 Lube	5.8	2783	2772.4	0.38	14.17
	9.2	2772.5	2278.5	17.88	
	21.2	2773.3	2105.7	24.26	

Summary:

Conclusion: Metalnox M6381 hydrocarbon was not successful in removing either Richards-Apex Lube soil from Aluminum.