CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2026
DateRun:	11/09/2026
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; Mobil Vectra Oil #2 and Syntilo #9913. Each coupon's Relative Fluorescence Units (RFU) were measured by taking the average of 5 different areas on the coupon and recorded. Each coupon was then soiled with an amount of the appropriate soil using a swab to spread it across the surface of the coupons. Each coupon was measured again and had its dirty measurements 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 measurements 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
Mobil Vectra Oil #2	39.6	2672.4	121.1	96.90	99.17
	125.3	2798.8	108.5	100.63	
	39.2	2798.6	39.7	99.98	
Syntilo #9913	101.4	330.8	197.4	58.15	38.45
	71.0	391.1	291.8	31.02	
	169.2	417.0	352.1	26.19	

Summary:

Conclusion: Metalnox M6381 hydrocarbon was successful in removing Mobil Vector Oil #2 from Aluminum. It was not successful in removing Syntilo #9913 soil from Aluminum.