CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2026

DateRun: 08/07/2026

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 Dowclene 1601 Modified Alcohol

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 Dowclene 1601 Modified Alcohol to clean each coupon for 10 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:

T (ºC)	P (mBar)	Soil	Dirty	cleanospector	Obs
120	150	J-1	223.3 (+/-6)	1.9 (+/-0.4)	Successful; no liquid recirculation
120	100	J-1	101.6 (+/-0.3)	3.3 (+/-0.5)	Successful; with liquid recirculation
120	100	J-2	500 (+/-28)	2.2 (+/-0.7)	Successful; with liquid recirculation
120	150	J-2	398.32 (+/-6)	18.9 (+/-3.2)	Failed; no liquid recirculation
120	150	None	2.3 (+/-0.1)	1.8 (+/-0.2)	Successful; no liquid recirculation
120	150	American lapping compound	2580 (+/-9)	2522 (+/-25)	Failed; no liquid recirculation
125	100	American lapping compound	2526 (+/-15)	2.9 (+/-1.1)	Successful; with strong liquid recirculation

Summary:

Conclusion: The results of the control sample show that the reflectance of the coupon decreased from its initial state after cleaning (from 2.3 to 1.8). This could indicate some sort of degradation of the substrate or removal of some coating of the substrate.