CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2026
DateRun:	08/04/2026
Experimenters:	Amelia Wagner, Gabriel Salierno
ClientType:	Lab
ProjectNumber:	Project #17
Substrates:	Aluminum
PartType:	Coupon
Contaminants:	Cutting/Tapping Fluids, Greases, Lubricating/Lapping Oils, Oil
Cleaning Methods:	Vapor Degreasing
Analytical Methods:	Xray fluoresence
Purpose:	To test the efficacy of the Dowclene 1601 Modified Alcohol in removing various industrial soils using vacuum vapor degreasing. To create a matrix of all soils from past TCE projects.

Experimental Procedure:

Prep:

Coupons were created from aluminum foil and were analyzed using the cleanospector to measure their initial reflectance values. Reflectance value data points were taken in five unique areas of the surface of each coupon. The average of the five data points were recorded as the initial reflectance of each coupon. The coupons were then soiled with a pea sized amount of various soils by spreading the soil evenly across the surface using a cotton swab. The same process of determining the reflectance value was repeated and each coupon's dirty reflectance value was recorded.

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

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	Solvent	Temp	Initial	Dirty	Clean	% DET	Observations
Phillips 66 Multiplex Grease	Dowclene 1601	120C	2.8	2750	3.3	99.98%	grease not soluble in liquid, particles in test environment, cleans well
Aeroshell 33 Grrease	Dowclene 1601	120C	2.7	85.2	21.8	76.85%	remaining grease turned from green to yellow
Hocut 795 Machining Oil	Dowclene 1601	120C	2.7	1592.4	29.2	98.33%	
Hocut 795 Machining Oil	Dowclene 1601	130C	3.4	1133.2	4.8	99.88%	w/ sample recirculation
No Soil	Dowclene 1601	120C	2.7	N/A	2.8	N/A	

Summary:

Substrates:	Aluminum
	Cutting/Tapping Fluids, Greases, Lubricating/Lapping Oils, Oil

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Contaminants:					
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Dow Chemical Company	Dowclene 1601 Cleaning Fluid		99.98	☑	Soil: Phillips 66 Multiplex Grease
Dow Chemical Company	Dowclene 1601 Cleaning Fluid		76.85	☑	Soil: Aeroshell 33 Grease
Dow Chemical Company	Dowclene 1601 Cleaning Fluid		98.33	☑	Soil: Hocut 795 Machining Oil
Dow Chemical Company	Dowclene 1601 Cleaning Fluid		99.88	☑	Soil: Hocut 795 Machining Oil

Conclusion: The Dowclene 1601 was succesful in removing all soils utilizing benchtop vapor degreasing.