CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1999
DateRun:	01/24/1999
Experimenters:	Jason Marshall
ClientType:	Electronics Manufacturer
ProjectNumber:	Project #1
Substrates:	Teflon
PartType:	Part
Contaminants:	Lubricating/Lapping Oils
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Visual
Purpose:	To replace mineral spirits with a semi-aqueous cleaner
Experimental Procedure:	Five semi-aqueous cleaners were selected from the lab's database of vendor product information based on compatibility with brass. Full strength solutions were poured into 50 mL beakers. Teflon shavings were immersed into the beakers at room temperature. The shavings were manually agitated by lifting and lowering. After one minute of cleaning the shavings and parts were rinsed for 15 seconds in tap water at 120 F. Samples were set aside to dry at room temperature. Observations were based on how white the Teflon was after cleaning. In addition to the substrate observations, the appearances of the cleaning solutions were recorded. SUBSTRATE MATERIAL: Teflon parts and shavings CONTAMINANTS: Oil-lubricating oil (CAS # 64742-53-6, 64742-52-5)
Results:	All five chemistries performed much better than the aqueous cleaners in the previous tests. Two products had exceptional cleaning of the shavings in only one minute. Table 1 lists the observations and rankings of the five cleaners.

Table 1. Cleaning Observations.

Chemistry	Observations	Ranking	Cleaner Status
Soy Gold 2000	Good cleaning	4	Hazy orange color (orange was its original color)
Vortex	Excellent cleaning	1	Clear Yellow (clear was its original color)
EP-921	Okay cleaning	5	Cloudy Yellow (clear was its original color)
HTF-50	Excellent to good cleaning	2	Cloudy Yellow (clear was its original color)
D-Limonene	Good cleaning	3	Clear Yellow (clear was its original color)

Summary:

Substrates:	Teflon				
Contaminants:	Lubricating/Lapping Oils				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
AG Environmental Products	Soy Gold 2000	100	4.00	☑	Rank
EcoLink	Vortex	100	1.00	☑	Rank
Inland Technologies Inc	EP 921	100	5.00	☐	Rank

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Tarksol Inc	Tarksol HTF-50	100	2.00	☑	Rank
Florida Chemical Company	D-Limonene	100	3.00	☑	Rank

Conclusion:

Two cleaning products, Ecolink Vortex and T-Square HTF-50, showed excellent removal of the oil from the Teflon shavings and parts. Each removed nearly all of the oil form the shavings and parts in under one minute.
Technical information has been included for four of the products (the fifth from Florida Chemical will be similar to EP-921). This information can be obtained by running a query in C:\My Documents\CHEM USED\cleaner used. Select Hazinfoquery. Or it can be found in the hard copy of the notebook located in the locked closet in room 309.