CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	03/12/2008
Experimenters:	Heidi Wilcox, Shweta Bansal
ClientType:	Electronics Manufacturer
ProjectNumber:	Project #1
Substrates:	Copper
PartType:	Coupon
Contaminants:	Cutting/Tapping Fluids
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Gravimetric
Purpose:	To evaluate products on second supplied cutting fluid
Experimental Procedure:	Two new product samples of solvents were tested at room temperature for possible use as a substitute for the client's current process. Six preweighed coupons were coated with Master Chemical Corporation Trim Sol SF (8002-05-9, 61789-85-3, 68410-99-1, 68991-48-0, 68603-15-6) cutting fluid using a handheld swab. The contaminated coupons were weighed a second time to determine the amount of soil added. Three coupons were immersed into each cleaning solution and manual raised and lowered in the cleaning solution to provide mechanical agitation. After one minute of cleaning, the coupons were removed and dried for 30 seconds using compressed air at room temperature. Following air drying, the coupons were weighed a final time to determine the amount of soil remaining. Efficiency for each coupon was determined and average cleaning results for each product were calculated.
Results:	Metalnox M 6381 removed over 99% of the cutting fluid within one minute. M 6310 removed approximately 85% of the cutting fluid within one minute. The table below lists the amount of oil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Metalnox M6381	0.1912	0.0005	99.74
	0.1364	0.0000	100.00
	0.2414	0.0004	99.83
Metalnox M6310	0.1141	0.0000	100.00
	0.1323	0.0200	84.88
	0.0976	0.0299	69.36

Summary:

Substrates:	Copper				
Contaminants:	Cutting/Tapping Fluids				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Kyzen Corporation	Metalnox M6381	100	99.86	☑	
Kyzen Corporation	Metalnox M6310 (For Comparison Only)	100	84.75	☑	

Conclusion:	Both products may be used on supplied parts and then brought to the client for evaluation of the cleaning process.