

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1998
 DateRun: 09/10/1998
 Experimenters: Jason Marshall, Shyam Sarda
 ClientType: Electromagnetic Manufacturer
 ProjectNumber: Project #1
 Substrates: Copper, Nickel
 PartType: Coupon
 Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil
 Cleaning Methods: Ultrasonics
 Analytical Methods: Gravimetric

Purpose: To test previously tested cleaning chemistries on second contaminant oil.

Experimental Procedure: Six preweighed coupons were contaminated with oil using a hand held swab and then weighed. Two cleaning solutions were made into 15% solutions using DI water in a 600 mL beaker. The solutions were heated to 130 F on a hot plate. The beakers were then placed into a Crest 40 kHz ultrasonic tank model 4Ht 1014-6 also at 130 F. Three coupons were placed in each cleaner for a set cleaning time. The cleaning time was 5 minutes. Coupons were rinsed in tap water at 120 F for 30 seconds and air dried. Final weights were taken after drying was complete.

SUBSTRATE MATERIAL: Copper/Nickel 70/30
 CONTAMINANTS: Oil- Indopol L-14 (Polybutene/butene copolymer CAS# 9003-29-6)

Results: The WR Grace had limited success in removing the oil after 5 minutes of cleaning in the ultrasonic tank. Calgon AK 6215 worked exceptionally well during the cleaning period. Table 1 lists the cleaning results from this trial.

Table 1. Cleaning Efficiencies

Daraclean	Ak-6215
5min	5min
60.21	94.65
76.39	97.12
90.22	100.4
75.61	97.39
15.02	2.884

Summary:

Substrates:		Copper, Nickel			
Contaminants:		Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil			
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Calgon Corporation	AK 6215	15	97.39	<input checked="" type="checkbox"/>	
Magnaflux	Daraclean 282	15	75.61	<input type="checkbox"/>	

Conclusion:

Calgon's Ak-6215 removed almost all of the contaminant after 5 minutes of cleaning. MSDSs of both chemistries have been included with this report.