CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2003
DateRun:	09/01/2003
Experimenters:	Jason Marshall
ClientType:	Optical Manufacturer
ProjectNumber:	Project #1
Substrates:	Plastic
PartType:	Coupon
Contaminants:	Coatings
Cleaning Methods:	Ultrasonics
Analytical Methods:	Visual
Purpose:	To identify additional products for the coating removal
Experimental Procedure:	One product that was partially successful in the previous trial was diluted to 20% using DI water in a 600 ml beaker. Four semi-aqueous products were used at full strength in 600 ml beakers. Three acidic aqueous products were also selected for evaluation. Two were used at full strength and the third was used diluted to 3 percent using DI water in a 600 ml beaker. All eight products were heated to 120 F using a Crest 40 kHz ultrasonic tank filled with water and degassed for 5 minutes. One lens was placed in each solution and cleaned for 30 minutes. Observations were made at 5, 10, 15, 20 and 30 minutes. Parts were rinsed in DI water for 15 seconds at room temperature and dried using air blow off also at room temperature.
Results:	Westech was the only product to remove the coating from the front of the lens. Kyzen Ionx FCR, Inland Tech EP 921 and Dynamold Solvents DS 104 all effected the coating on the back. The table below lists the observations made during the cleaning process.

Cleaner	5 min	10 min	15 min	20 min	30 min
Multi-Kleen	no sign of cleaning	same	same	same	not tested
Ionox FCR	became hazy	some peeling; became cloudy when rinsed	cloudy	some flaking	same
EP 921	became hazy	some peeling; became cloudy	some could be rubbed off when rinsed	air blew off some of the flakes	same
SC Supersolve	no sign of cleaning	same	same	same	not tested
DS 104	became hazy	flakey with air blowing off some	cloudy	peeling off	same
Westech 4712	tiny spots on front	same	starting to remove coating	same	majority of coating on front was removed with air blow off
Citranox	no sign of cleaning	same	same	same	same
Geo Guard 3015	no sign of cleaning	same	few spots developing	same	no change

Summary:	
	Plastic

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Substrates:					
Contaminants:	Coatings				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Heatbath Corporation	MultiKleen LX 1573	20	0.00	☐	
Kyzen Corporation	Ionox FCR (For Comparison Only)	100	0.00	☑	
Inland Technologies Inc	EP 921	100	0.00	☑	
Gemtek Products	SC Supersolve Safety Solvent	100	0.00	☐	
Dysol	DS 104 Wipe Solvent	100	0.00	☑	
Chem Tech Solutions	Westech CT-4712	100	0.00	☑	
Alconox Inc	Citranox	3	0.00	☐	
Calgon Corporation	Geo Guard 3015	100	0.00	☐	

Conclusion: Chem Tech Westech CT-4712 removed nearly all of the coating from the front side of the lens. All eight lenses are being returned to client for inspection at their facility.