CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2008
DateRun:	09/22/2008
Experimenters:	Jason Marshall
ClientType:	Machine Construction Company
ProjectNumber:	Project #2
Substrates:	Steel
PartType:	Coupon
Contaminants:	Coatings
Cleaning Methods:	Ultrasonics
Analytical Methods:	Gravimetric
Purpose:	To evaluate successful products on second supplied contaminant using ultrasonics and heat.
Experimental Procedure:	Eight products were selected from the previous trial based on success on removing the supplied soil. Five products were diluted to 5% using DI water in 400 ml beakers. The other three were used at full strength based on vendor recommendations. Beakers were immersed and heated to 130 F in a Branson 40 kHz ultrasonic tank. Solutions were degassed for five minutes. Twenty-four preweighed steel coupons were coated with the rust preventative VCI 368 using a hand held swab. Coupons were weighed again to determine the amount of soil added. Three coupons were cleaned in each solution for 10 minutes using ultrasonic energy. Coupons were rinsed for 15 seconds in tap water at 120 F and dried using compressed air at room temperature for 30 seconds. Final weights were recorded and efficiencies calculated.
Results:	Six of the eight products removed over 85% of the second supplied contaminant using heated ultrasonics. Five of these products removed over 90%. Kyzen's Ionox HC 2 and Chem Free Corp Ozzy Juice SW 1 were the two products that did not remove over 85%. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
Aquavantage 1400 GD			
	0.4064	0.0176	95.67
	0.4338	0.0218	94.97
	0.4076	0.0162	96.03
Grease Feast			
	0.2940	0.0321	89.08
	0.4619	0.0129	97.21
	0.4403	0.0130	97.05
SC Aircraft & Metal Cleaner			
	0.2726	0.0157	94.24
	0.2216	0.0093	95.80
	0.3492	0.0180	94.85
SC MaxiSolve			
	0.3530	0.0330	90.65
	0.3187	0.0211	93.38
	0.3699	0.0527	85.75
Ozzy Juice SW1			
	0.3302	0.0491	85.13
	0.2597	0.0457	82.40
	0.2371	0.0847	64.28
Smart Solve 605			
	0.3111	0.0299	90.39
	0.4758	0.0171	96.41
	0.4421	0.0326	92.63
Bean-e-doo			
	0.4102	0.0102	97.51
	0.3815	0.0213	94.42
	0.5301	0.0216	95.93
Ionox HC2			

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	0.4945	0.1077	78.22
	0.3760	0.1056	71.91
	0.4377	0.0884	79.80

Summary:

Substrates:	Steel
Contaminants:	Coatings

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Aquavantage 1400	5	95.56	☑	
Ensolve Biosystems Inc	Grease Feast Plus	100	94.45	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	5	94.96	☑	
Gemtek Products	Safe Care (SC) Maxi Solv	5	89.93	☑	
Chem Free Corporation	SW-1 Ozzy Juice	5	77.27	☐	
United Laboratories International	Smart Solve 605	100	93.14	☑	
Franmar Chemical	Bean-e-doo (Parts Washer Solvent)	100	95.95	☑	
Kyzen Corporation	Ionox HC 2	5	76.65	☐	

Conclusion: The top six products will be used on the third supplied contaminant under the same conditions.