CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2003

DateRun: 09/11/2003

Experimenters: Jason Marshall

ClientType: Tool Manufacturer

ProjectNumber: Project #1

Substrates: Steel

PartType: Coupon

Contaminants: Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate cleaners for removal of quench oil

Experimental Procedure: Eight cleaners were selected from the laboratory's database of cleaning evaluations. Based on client input, five cleaners could be used as a cold solvent, requiring no rinsing and leaving no residue. These cleaners were used at full strength. Two other products were aqueous based and diluted to 10% using DI water. The final was a bio-based solvent used at full strength. All eight products were used at room temperature in 250 ml beakers with no agitation. The process utilized no water rinse and only used compressed air to dry/ rinse the parts. Twenty-four preweighed steel coupons were coated with Castrol Quench G oil (64742-55-8, 64742-65-0, 8052-42-4) using a hand held swab. The quench oil was then heated with a Master Appliance Heat gun at 300 F for 10 minutes. After cooling to room temperature, a second weighing was performed to determine the amount of soil that was added. Three coupons were cleaned in each solution for 5 minutes with no agitation. After drying with the air blow off, coupons were weighed a final time to determine the cleaning efficiencies of each product.

Results: All eight cleaners selected were effective in removing over 85% of the quench oil. Half of the products removed over 99%. The table below lists the amount of soil added and remaining for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
AK 225	0.1966	0.0009	99.54
	0.1286	-0.0001	100.08
	0.1453	0.0001	99.93
DS 108	0.1402	-0.0002	100.14
	0.2074	0.0003	99.86
	0.2324	0.0002	99.91
Deyond 2008	0.2396	0.0005	99.79
	0.2141	0.0026	98.79
	0.2528	0.0039	98.46
D Greeze 1000	0.1721	0.0007	99.59
	0.2078	0.0014	99.33
	0.2204	0.0005	99.77
278 Super Solv	0.2389	0.0066	97.24
	0.2223	0.0136	93.88
	0.2515	0.0082	96.74
E3HB	0.2040	0.0305	85.05
	0.2760	0.0459	83.37
	0.2304	0.0211	90.84
Inproclean 3800	0.2326	0.0099	95.74
	0.1866	0.0071	96.20
	0.2230	0.0062	97.22
SC Aircraft & Metal	0.2389	0.0225	90.58
	0.2338	0.0129	94.48
	0.2855	0.0240	91.59

Summary:

Substrates:	Steel				
Contaminants:	Oil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**

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AGA Chemical	AK 225	100	99.85	☑	
Dysol	DS 108 Wipe Solvent	100	99.97	☑	
Today & Beyond	Beyond 2008	100	99.01	☑	
Transene Company, Inc.	D Greeze 1000	100	99.56	☑	
AW Chesterton	278 Super Solv	100	95.95	☑	
Metabolix Inc	Metabolix E3HB	100	86.42	☑	
Oakite Products	Inproclean 3800	10	96.39	☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	10	92.22	☑	

Conclusion: The two aqueous products and the bio based solvent will be retested using heated solutions.