CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1999
DateRun:	08/16/1999
Experimenters:	Jason Marshall, Nicole Vayo
ClientType:	Department of Public Works
ProjectNumber:	Project #1
Substrates:	Aluminum, Stainless Steel
PartType:	Coupon
Contaminants:	Buffing/Polishing Compounds, Coatings, Cutting/Tapping Fluids, Greases, Inks, Lubricating/Lapping Oils, Oil
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To evaluate client requested cleaner based on Vendor supplied information.

Experimental Procedure:

The cleaner used was diluted to 5% using DI water in 600 ml beakers. Cleaning of the coupons was performed using stir-bar agitation at room temperature for five minutes. Coupons were rinsed using tap water at 120 F for two minutes and dried at room temperature for two hours. Gravimetric analysis was used to determine effectiveness. The small piece of buffing compound was immersed into a vial containing the 5% solution at room temperature. Cleaning lasted for 30 minutes with no rinse or dry. Visual analysis was performed to determine if the cleaner was effective in dissolving the contaminant.

SUBSTRATE MATERIAL: Liquid, Aluminum Coupons (202-2024 T-3), Nickel/Copper Coupons (202-715), Stainless Steel Coupons (202-316B-80)
CONTAMINANTS: Table 1 lists the contaminants and their CAS#s

Table 1. Contaminants Used

Contaminant	CAS #	
coating	64742-47-8	64742-52-5
grease	64742-47-8	
lubricant	64742-47-8	9003-29-6
ink	67-63-0	9004-70-0
	108-88-3	109-60-4
	64-17-5	141-78-6
oil	64741-89-5	

CONTAMINATING PROCESS USED: The buffing compound was immersed in the cleaning solutions. All others were applied to coupons using hand held swabs.

Results:

The New Pig Degreaser was successful in removing the grease, lubricant and the oil from different substrates. It had difficulty in dissolving the buffing compound and had low efficiency in the cleaning the coating and ink. Table 2 lists the substrate, contaminant & CAS#s and the efficiencies associated with each.

Table 2. Cleaning Results

Hoofmark All Purpose Cleaner				
Substrate	Substrate ID #	Contaminant	CAS #	Efficiency
Aluminum	202-2024 T-3	grease	64742-47-8	100
Aluminum	202-2024 T-3	lubricant	64742-47-8	75
			64742-52-5	
Nickel/ Copper	202-715	ink	64-63-0	2
			108-88-3	
			9004-70-0	
			109-60-4	
			64-17-5	
			141-78-6	
	202-316B-80	oil	64741-89-5	93

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Stainless Steel				
Hoofmark Industrial Degreaser				
Substrate	Substrate ID #	Contaminant	CAS #	Efficiency
Aluminum	202-2024 T-3	grease	64742-47-8	91
Aluminum	202-2024 T-3	lubricant	64742-47-8	68
			9003-29-6	
Nickel/ Copper	202-715	ink	67-63-0	1
			9004-70-0	
			108-88-3	
			109-60-4	
			64-17-5	
			141-78-6	
Stainless Steel	202-316B-80	oil	64741-89-5	61

Summary:

Substrates:	Aluminum, Stainless Steel
Contaminants:	Buffing/Polishing Compounds, Coatings, Cutting/Tapping Fluids, Greases, Inks, Lubricating/Lapping Oils, Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
New Pig Corporation	New Pig Degreaser	5	0.00	☐	buffing
New Pig Corporation	New Pig Degreaser	5	14.00	☐	coating
New Pig Corporation	New Pig Degreaser	5	98.00	☑	grease
New Pig Corporation	New Pig Degreaser	5	86.00	☑	lubricant
New Pig Corporation	New Pig Degreaser	5	1.00	☐	ink
New Pig Corporation	New Pig Degreaser	5	100.00	☑	oil

Conclusion:

New Pig Degreaser was found to be effective in removing some of the contaminants tested. Grease, lubricants and oils were easily removed using a 5% solution for five minutes at room temperature.