CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 07/31/2002

Experimenters: Jason Marshall

ClientType: Metal

ProjectNumber: Project #1

Substrates: Alloys, Copper

PartType: Coupon

Contaminants: Buffing/Polishing Compounds, Greases

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To identify and compare alternatives to current cleaning solution

Experimental Procedure: Nine alkaline aqueous products were selected from the laboratories database of effective cleaners. Selections were made based on successful cleaning of buffing compounds and compatibility with brass and copper. An additional solution was supplied by the client. Each solution was diluted to 5% using DI water in 600 ml beakers. The dilutions were heated to 130 F on a hot plate. Thirty preweighed coupons were coated with Jackson Lea Learok 7-S-3 Buffing compound (102-71-6, 14808-60-7, 1317-95-9). The buffing compound was applied by first heating it with a hot air gun and rubbing the coupons with the melted contaminant. Coupons were allowed to cool to room temperature and then weighed again. Three coupons were cleaned in each solution for 5 minutes using stir-bar agitation. Following the cleaning, coupons were rinsed with a DI water bath for 30 seconds at room temperature and dried using a Master Appliance Heat Gun at 300 F for 15 seconds. Coupons were again allowed to cool to room temperature and then weighed a final time. Cleaning efficiencies were calculated and recorded.

Results: During the initial soak cleaning, many of the produces were dissolving the buffing compound. Despite this observation, when the coupons were weighed, efficiencies were very low. It was noted that the buffing compound was only loosely attached the coupons. When the coupons were wiped with a single pass using a paper towel, efficiencies were vastly improved. The following table lists the efficiencies calculated for both the initial immersion test and the wipe analysis.

Cleaner	Immersion	with Wipe
Permag S-4	3.70	96.61
815 GD	-4.82	76.17
Shopmaster LpH	6.15	10.66
Micro 90	-3.37	99.43
ND 17	18.26	93.35
Inproclean 3800	31.73	90.16
Dirtex	12.95	82.39
Simple GreenD	3.76	30.65
Polychem Spray 790P	28.09	74.30
Daraclean 282 GF	30.28	99.12

Summary:

Substrates:	Alloys, Copper
Contaminants:	Buffing/Polishing Compounds, Greases

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Buckeye International	Shopmaster LPH	5	10.66	☐	
Brulin Corporation	Formula 815 GD	5	76.17	☑	
International Products Corporation	Micro 90 Conc.	5	99.43	☑	
Simple Green	Simple Green D	5	30.65	☐	
Savogran Company	Dirtex Prepaint Cleaner	5	82.39	☑	
Magnaflux	Daraclean 282 GF	5	99.12	☑	
US Polychem Corporation	Polyspray Jet 790 P	5	74.30	☑	
Oakite Products	Inproclean 3800	5	90.16	☑	
MacDermid Industrial Products	ND 17	5	93.35	☑	
Magnuson Products	Permag S-4	5	96.61	☑	

Conclusion:

CLEANING LABORATORY EVALUATION SUMMARY

The eight successful wipe cleaners will be evaluated using ultrasonics.