CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 09/20/2005

Experimenters: Jason Marshall, Chang Won

ClientType: Metal Finishing

ProjectNumber: Project #1

Substrates: Brass

PartType: Coupon

Contaminants: Buffing/Polishing Compounds

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate aqueous based cleaners for the removal of first buffing compound from brass coupons.

Experimental Procedure: Eight products were selected from the lab's database of test results based on supplied information from the client. Each product was used at 5% diluted with DI water and heated to 130 F on a hot plate. A 600 ml beaker was filled with each product and placed on a stir plate.

Twenty-four preweighed 260 Brass coupons were coated with the Mosher Company Inc Moco Steel Cut #2318 (68425-50-2, 555-43-1, 57-11-4, 26635-92-7, 1344-28-1) buffing compound. The compound was applied by heating the coupons and the buffing compound with a Master Appliance Heat Gun. The hot buffing compound was rubbed across the surface. Coupons were allowed to cool to room temperature and weighed a second time to determine the amount of contaminant applied. Three coupons were cleaned in each product for 5 minutes using stir-bar agitation. After cleaning, the parts were rinsed for 15 seconds in 120 F tap water bath and then dried for 30 seconds using dry, compressed air at room temperature. Once dry, final weights were recorded and efficiencies were calculated for each product.

Results: Four products were successful in removing over 80% of the buffing compound after 5 minutes of soaking. Three products remover just under 70%. One product removed less than half of the buffing compound. The aqueous based cleaners were more effective than the drop in solvents investigated in the first trial. The first table below lists the amount of soil applied, the amount remaining and the efficiency for each coupon cleaned. The second tables lists the results for the drop-in solvents tested.

Cleaner	Initial wt	Final wt	% Removed
815 GD	0.0850	0.0131	84.59
	0.1204	0.0219	81.81
	0.2071	0.0413	80.06
Safety Wash	0.1231	0.0479	61.09
	0.0780	0.0006	99.23
	0.2922	0.1795	38.57
Micro 90	0.0898	0.0094	89.53
	0.1426	0.0514	63.96
	0.0972	0.0075	92.28
Daraclean 282	0.1334	0.0362	72.86
	0.1383	0.0414	70.07
	0.1819	0.0690	62.07
MC 132	0.1141	0.0011	99.04
	0.0822	0.0011	98.66
	0.1704	0.0014	99.18
Inproclean 3800	0.0902	0.0167	81.49
	0.1955	0.0955	51.15
	0.1743	0.0789	54.73
Texolite 1734 XL	0.0749	0.0001	99.87
	0.1565	0.0507	67.60
	0.0950	0.0223	76.53
Polyspray Jet 790 P	0.1559	0.0542	65.23
	0.2028	0.1149	43.34
	0.2576	0.1887	26.75

Summary:

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Substrates:	Brass
Contaminants:	Buffing/Polishing Compounds

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Formula 815 GD	5	82.15	☑	
Emkay Chemical Company	Safety Wash	5	66.30	☐	
International Products Corporation	Micro 90 Conc.	5	81.92	☑	
Magnaflux	Daraclean 282	5	68.33	☐	
Matchless Metal Polish Company	MC 132	5	98.96	☑	
Oakite Products	Inproclean 3800	5	62.46	☐	
Texo Corporation	Texolite 1734 XL	5	81.33	☑	
US Polychem Corporation	Polyspray Jet 790 P	5	45.11	☐	

Conclusion: The four effective aqueous products will be tested on the second buffing compound under similar conditions.