

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1995
 DateRun: 09/12/1995
 Experimenters: Donald Garlotta, Jay Jankauskas
 ClientType: Metal Wire Manufacturer
 ProjectNumber: Project #1
 Substrates: Alloys, Aluminum, Steel
 PartType: Part
 Contaminants: None
 Cleaning Methods: Immersion/Soak
 Analytical Methods: Gravimetric, Visual

Purpose: The purpose of this experiment is to perform a corrosion test on Metal Wire Manufacturer's parts.

Experimental Procedure: Six cleaners that were successful in the cleaning trial for Metal Wire Manufacturer were used. Four solvent cleaned wires were weighed and then placed in each beaker of cleaning solution. The beakers of solution were kept at a temperature of 150 F and no agitation was applied. The wires remained in the cleaning solutions for 6 hours. They were then rinsed in a tap water bath (150 F) for two minutes and then dried in a convection oven. After drying the parts were cooled down and then weighed and visually inspected.

Results: MacDermid ND-17

sample #	mass before cleaning (g)	mass after cleaning (g)	Percent Weight Loss
1	0.8020	0.8027	-0.09%
2	0.8261	0.8264	-0.04%
3	0.8099	0.8100	-0.01%
4	0.8269	0.8269	0.00%
			-0.03%

CSI Release

sample #	mass before cleaning (g)	mass after cleaning (g)	Percent Weight Loss
5	0.8080	0.8080	0.00%
6	8074	0.8074	0.00%
7	0.8068	0.8069	-0.01%
8	0.8236	0.8236	0.00%
			-0.00%

Calgon Corp. Geo-Guard 2215

sample #	mass before cleaning (g)	mass after cleaning (g)	Percent Weight Loss
9	0.8241	0.8244	-0.04%
10	0.8090	0.8090	0.00%
11	0.8249	0.8249	0.00%
12	0.8088	0.8090	-0.02%
			-0.02%

Brulin Corporation 815 GD

sample #	mass before cleaning (g)	mass after cleaning (g)	Percent Weight Loss
13	0.8084	0.8084	0.00%
14	0.8074	0.8075	-0.01%
15	0.8026	0.8028	-0.02%
16	0.8260	0.8261	-0.01%
			-0.01%

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WR Grace Daraclean 283

sample #	mass before cleaning (g)	mass after cleaning (g)	Percent Weight Loss
17	0.8085	0.8086	-0.01%
18	0.8093	0.8093	0.00%
19	0.8020	0.8021	-0.01%
20	0.8072	0.8074	-0.02%
			-0.01%

Oakite Products Inc. Inproclean #3800

sample #	mass before cleaning (g)	mass after cleaning (g)	Percent Weight Loss
21	0.8088	0.8086	0.02%
22	0.8062	0.8058	0.05%
23	0.8097	0.8095	0.02%
24	0.8075	0.8074	0.01%
			0.03%

Summary:

Substrates:	Alloys, Aluminum, Steel				
Contaminants:	None				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
MacDermid Industrial Products	ND 17	10		<input type="checkbox"/>	
Cleaning Systems	Release	10		<input checked="" type="checkbox"/>	
Calgon Corporation	Geo Guard 2215	10		<input checked="" type="checkbox"/>	
Brulin Corporation	Formula 815 GD	10		<input checked="" type="checkbox"/>	
Magnaflux	Daraclean 283	10		<input checked="" type="checkbox"/>	
Oakite Products	Inproclean 3800	10		<input checked="" type="checkbox"/>	

Conclusion:

Due to the relative error of the electronic balance used (0.05%) all cleaners fell within an acceptable weight loss range. The ND-17 was noticed to form an insoluble blue gel at high temperatures (above 130 F). Adverse effects of this gel is not known but since there were five other cleaners that performed as well if not better, the ND-17 shouldn't be considered. An FTIR spectrum was taken of this blue substance and from the absorptions, the substance appears to be Dipropylene Glycol Methyl Ether.