

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005
 DateRun: 07/28/2005
 Experimenters: Jason Marshall
 ClientType: Metal
 ProjectNumber: Project #1
 Substrates: Aluminum
 PartType: Coupon
 Contaminants: Mold Releases, Graphite
 Cleaning Methods: Ultrasonics
 Analytical Methods: Gravimetric

Purpose: To evaluate products for removing colloidal graphite mold release agent using ultrasonics energy

Experimental Procedure: Five products were selected from the previous trial and used at the same concentrations. Each product was suspended in water heated to 120 in a Crest Ultrasonic 40 kHz tank. The solutions were degassed for five minutes.

Fifteen preweighed coupons were again coated with the Acheson Colloids Co Aquadag M mold release agent (CAS#: 7782-42-5, 84122-50-6, 70131-67-8, 1333-86-4, 107-21-1, 9002-84-0). The mold release was initially dried for 5 minutes using a Master Appliance Heat Gun at 500 F. The coupons were then subjected to another 10 minutes of drying. Coupons were allowed to sit overnight, followed by 2 hours of drying in an oven at 500 F. After the drying, coupons were allowed to cool to room temperature and weighed a second time to determine the amount of soil added to the coupons.

Three coupons were cleaned in each solution for 5 minutes using ultrasonic agitation. Coupons were rinsed in a tap water bath for 15 seconds at 120 F and dried using compressed air blow off at room temperature for 30 seconds. Final weights were recorded and efficiencies were calculated.

Results: Four of the products removed over 69% of the soil using ultrasonic energy. Only one product removed under half of the graphite colloidal mold release agent. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon cleaned.

Cleaner	Initial wt	Final wt	% Removed
815 GD	0.0013	0.0002	84.62
	0.0028	0.0005	82.14
	0.0052	0.0007	86.54
Micro 90	0.0071	0.0019	73.24
	0.0046	0.0020	56.52
	0.0081	0.0017	79.01
Inproclean 3800	0.0097	0.0010	89.69
	0.0113	0.0025	77.88
	0.0031	0.0009	70.97
Citranox	0.0023	0.0018	21.74
	0.0031	0.0016	48.39
	0.0050	0.0013	74.00
Coil Bright	0.0073	0.0023	68.49
	0.0089	0.0020	77.53
	0.0079	0.0023	70.89

Summary:

Substrates:	Aluminum				
Contaminants:	Mold Releases, Graphite				
Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Brulin Corporation	Formula 815 GD	5	84.43	<input checked="" type="checkbox"/>	
International Products Corporation	Micro 90 Conc.	5	69.59	<input checked="" type="checkbox"/>	
Oakite Products	Inproclean 3800	5	79.51	<input checked="" type="checkbox"/>	
Alconox Inc	Citranox	6	48.04	<input type="checkbox"/>	
Watson Technical Associates	Coil Bright	20	72.30	<input checked="" type="checkbox"/>	

Conclusion: The four successful products will be used to clean the supplied soiled parts using ultrasonic cleaning.