CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 07/28/2005

Experimenters: Jason Marshall

ClientType: Metal

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Part

Contaminants: Mold Releases, Graphite

Cleaning Methods: Ultrasonics

Analytical Methods: Visual

Purpose: To evaluate products on supplied parts using ultrasonic cleaning

Experimental Procedure: Four 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.

Two presoiled coupons 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) were suspended in each solution and cleaned for 5 minutes using ultrasonic energy. Parts were then rinsed with tap water at 120 F for 15 seconds and dried using compressed air at room temperature for 30 seconds. Cleaned parts were then visually inspected and compared to each other. In addition, the parts were also compared to the client supplied cleaned parts.

Results: The Watson Technical Associates Coil Bright was the most successful product, requiring 2 minutes to remove the baked on graphite soil. The two parts were cleaner than the supplied acid washed parts. In addition, the parts were almost as clean as the finished products. The International Products Micro 90 also worked very well after 5 minutes of cleaning. The parts were cleaner than the Acid Wash supplied parts. The table below lists the observations at the various cleaning intervals. Photos of the cleaned parts are also included.

Cleaner	Time (min)	Observations
Brulin 815 GD	2	Some soil removed
Micro 90		Some soil removed
Inproclean 3800		Some soil removed
Coil Bright		All clean - better than acid wash samples
Brulin 815 GD	5	Slightly better than Inproclean, still soiled
Micro 90		All - clean better than acid wash samples
Inproclean 3800		Still soiled
Brulin 815 GD	10	Not as clean as Acid washed samples
Inproclean 3800		Not as clean as Acid washed samples
Brulin 815 GD	15	Almost as clean as Acid washed samples
Inproclean 3800		Not much change from 10 minute cleaning

Summary:

Substrates:	Aluminum				
Contaminants:	Mold Releases, Graphite				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Brulin Corporation	Formula 815 GD	5	0.00	☐	

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International Products Corporation	Micro 90 Conc.	5	0.00	☑	
Oakite Products	Inproclean 3800	5	0.00	☐	
Watson Technical Associates	Coil Bright	20	0.00	☑	

Conclusion: Two products were very effective in removing the baked on graphite mold release agent from the aluminum parts. Coil Bright required under 5 minutes for complete cleaning and Micro 90 was done after the 5 minutes. Parts will be sent back to the client for analysis.