CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008

DateRun: 04/29/2008

Experimenters: Jason Marshall

ClientType: Machining Company

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Coupon

Contaminants: Inks

Cleaning Methods: Manual Wipe

Analytical Methods: Visual

Purpose: To evaluate previously tested product at lower concentrations for cleaning the six inks.

Experimental Procedure: Coupons were coated with each of the six supplied inks. These included Dykem Stop Off, Markal Valve Action Paint marker, Nu-Mark marker, Sharpie permanent marker, Sakura Coatings Product Company Solid Marker and the Avery Marks-A-Lot permanent marker (black). Once dry, coupons were cleaned using a handheld swab that was immersed into the cleaning product. Cleaning lasted for up to 2 minutes. Following the cleaning, the coupons was wiped once to dry surface. Observations were made and recorded.

Three dilutions were evaluated: 40%, 20% and 10%. If the dilution required under one minute to be effective, then a lower concentration also was evaluated. If the dilution took longer than a minute and a half, a higher concentration was evaluated.

Results: The two most challenging inks for the diluted product were blue sharpie and the black Avery Marks-a-lot marker. The easiest to remove was the Nu Marker, which was cleaned at 10% in less than 20 seconds.

Contaminant	Dilution	Observations
Dykem	40%	40 seconds to clean
	20%	90 seconds
Markal	20%	20 seconds
	10%	40 seconds
Nu Mark	20%	15 seconds
	10%	15 seconds
Sharpie	20%	120 seconds - 90% removed
	40%	60 seconds - 95% removed
Solid Yellow	20%	90 seconds
	40%	90 seconds
Marks-a-lot	20%	120 seconds -95% removed
	40%	60 seconds - 95% removed

Summary:

Substrates:	Aluminum				
Contaminants:	Inks				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Vertec BioSolvents	VertecBio Gold 3	20	0.00	☑	

Conclusion: The Vertec Bio Gold 3 was found to be effective on the six contaminants when diluted with water. The 20% dilution may be the best choice for a universal concentration for all six inks.