

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2008  
 DateRun: 04/17/2008  
 Experimenters: Jason Marshall, Shweta Bansal  
 ClientType: Machining Company  
 ProjectNumber: Project #1  
 Substrates: Aluminum  
 PartType: Coupon  
 Contaminants: Inks  
 Cleaning Methods: Manual Wipe  
 Analytical Methods: Visual

Purpose: To evaluate new product with low voc and no HAPs on all six inks.

Experimental Procedure: One coupon was 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 1 minute. Following the cleaning, the coupons was wiped dry for 5 seconds. Observations were made and recorded.

| Results: | Contaminant | Observation                            |
|----------|-------------|----------------------------------------|
|          | Dykem       | Required under 30 seconds to clean     |
|          | Markal      | Worked well                            |
|          | Nu-Mark     | Worked well                            |
|          | Sharpie     | Worked well - slight blue residue left |
|          | Sakura      | Worked well under 1 minute             |
|          | Avery       | Worked well                            |

|          |                      |                      |               |                    |                                     |                      |
|----------|----------------------|----------------------|---------------|--------------------|-------------------------------------|----------------------|
| Summary: | <b>Substrates:</b>   |                      | Aluminum      |                    |                                     |                      |
|          | <b>Contaminants:</b> |                      | Inks          |                    |                                     |                      |
|          | <b>Company Name:</b> | <b>Product Name:</b> | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |
|          | Vertec BioSolvents   | VertecBio Gold 3     | 100           |                    | <input checked="" type="checkbox"/> |                      |

Conclusion: The Vertec Bio Gold #3 worked on all six inks.