# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 06/03/2002

Experimenters: Jason Marshall

ClientType: Optical Manufacturer

ProjectNumber: Project #1

Substrates: Plastic

PartType: Part

Contaminants: Inks

Cleaning Methods: Manual Wipe

Analytical Methods: Visual, Wipe

Purpose: To evaluate successful cleaners on supplied parts.

Experimental Procedure: The four products from the previous trial were used at full strength and heated to 130 F on a hot plate in 400 ml beakers. Using a soft paper towel soaked in each heated solution, lenses were wiped until the ink was removed. The time required to clean was recorded. A second evaluation with the products involved soaking the lenses in the solution for 5 minutes, making observations through out the soak. At the end, the lenses was wiped for a maximum of 10 seconds. The lenses were then rinsed in a tap water rinse at 120 F for 10 seconds and wiped dry.

Results: All products were able to remove all of the ink in less than 1 minute during the manual wipe cleaning. Loctite 7360 was the fastest, removing the ink within 17 seconds. None of the products dissolved the ink from the lenses within the 5 minute soak cleaning. The following table lists the observations made during each cleaning process.

| Wipe Observations | Soak Observations | W ank + | | S rank / 2 | = | Overall Rank |
|---|---|---|---|---|---|---|
| 24 seconds | No dissolving, wipe at end was easy | 3 | + | 2 | = | 2.5 |
| 19 seconds | Wipe did not remove all the ink | 2 | + | 4 | = | 3 |
| 17 seconds | Possible dissolving, easily wiped | 1 | + | 1 | = | 1 |
| 48 seconds | Small amount of ink left | 4 | + | 3 | = | 3.5 |

Summary:

| **Substrates:** | Plastic | | | | |
|---|---|---|---|---|---|
| **Contaminants:** | Inks | | | | |
| **Company Name:** | **Product Name:** | **Conc.:** | **Efficiency:** | **Effective:** | **Observations:** |
| Bio Chem Systems | Bio T Max | 100 | 3.00 | ☑ | Wipe Rank |
| National Diagnostic | Opti Clear | 100 | 2.00 | ☑ | Wipe Rank |
| Loctite Corporation | 7360 | 100 | 1.00 | ☑ | Wipe Rank |
| Twin Rivers Technologies | Methyl Ester 1618 | 100 | 4.00 | ☐ | Wipe Rank |
| Bio Chem Systems | Bio T Max | 100 | 2.00 | ☑ | Soak Rank |
| National Diagnostic | Opti Clear | 100 | 4.00 | ☐ | Soak Rank |
| Loctite Corporation | 7360 | 100 | 1.00 | ☑ | Soak Rank |
| Twin Rivers Technologies | Methyl Ester 1618 | 100 | 3.00 | ☑ | Soak Rank |

Conclusion: A follow up test will be run on the top two products, Loctite 7360 and Bio T Max, to determine how long to soak the lenses to remove the ink with no wiping.