

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2004  
 DateRun: 05/07/2004  
 Experimenters: Jason Marshall  
 ClientType: Jewelry Mfr  
 ProjectNumber: Project #2  
 Substrates: Sterling/Silver  
 PartType: Coupon  
 Contaminants: Oil  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Gravimetric

Purpose: To evaluate three products on the third supplied soil

Experimental Procedure: Three products were selected based on success on the fourth supplied contaminant. All were used at full strength in a 250 ml beaker at room temperature. Nine preweighed silver plated copper coupons were coated with the Lanson Oil Co Vanish 6912 (6742-48-9) using a hand held swab. Coupons were weighed a second time to determine the amount of soil added to each coupon. Three coupons were cleaned in each solution for 5 minutes using stir-bar agitation. After cleaning parts were weighed a final time and efficiencies were calculated.

Results: The three products removed over 95% of the oil in five minutes of immersion cleaning. The table lists the amount of soil added, the amount remaining and the efficiency for each coupon.

| Cleaner | Initial wt | Final wt | % Removed |
|---------|------------|----------|-----------|
| OS 10   | 0.0807     | 0.0003   | 99.63     |
|         | 0.0885     | 0.0010   | 98.87     |
|         | 0.0570     | 0.0000   | 100.00    |
| OS 20   | 0.0496     | 0.0003   | 99.40     |
|         | 0.0537     | 0.0027   | 94.97     |
|         | 0.0480     | 0.0002   | 99.58     |
| OS 30   | 0.0489     | 0.0012   | 97.55     |
|         | 0.0393     | 0.0014   | 96.44     |
|         | 0.0692     | 0.0044   | 93.64     |

Summary:

|                      |                      |               |                    |                                     |                      |
|----------------------|----------------------|---------------|--------------------|-------------------------------------|----------------------|
| <b>Substrates:</b>   | Sterling/Silver      |               |                    |                                     |                      |
| <b>Contaminants:</b> | Oil                  |               |                    |                                     |                      |
| <b>Company Name:</b> | <b>Product Name:</b> | <b>Conc.:</b> | <b>Efficiency:</b> | <b>Effective:</b>                   | <b>Observations:</b> |
| Dow Chemical Company | OS 10                | 100           | 99.50              | <input checked="" type="checkbox"/> |                      |
| Dow Chemical Company | OS 20                | 100           | 97.98              | <input checked="" type="checkbox"/> |                      |
| Dow Chemical Company | OS 30                | 100           | 95.88              | <input checked="" type="checkbox"/> |                      |

Conclusion: Several products have been found to remove all four of the supplied oils using immersion cleaning. Products need to be evaluated using vapor degreasing.