

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023  
 DateRun: 08/10/2023  
 Experimenters: Tatyanna Moreland Junior  
 ClientType: Lab  
 ProjectNumber: Project #8  
 Substrates: Brass  
 PartType: Coupon  
 Contaminants: Oil  
 Cleaning Methods: Immersion/Soak  
 Analytical Methods: Gravimetric

**Purpose:** To evaluate the effectiveness of SB-22 (79% Ektapro EEP 14% t-butyl acetate 7% propylene carbonate), SB-24 (92% Ektapro EEP 8% t-butyl acetate) and a mixture of 79% Ektapro EEP 14% ethyl lactate 7% t-butyl acetate in removing two production oils from brass coupons as a potential replacement for TCE unheated immersion cleaning method.

**Experimental Procedure:** Three brass coupons were used for each cleaner and the two soils being tested for a total of 18 coupons. The initial weights of each coupon were recorded. The bottom third of every coupon was soiled by applying the corresponding soil with a swab. The dirty weights of each coupon were then recorded. The coupons were then subjected unheated immersion in SB-22, SB-24, and the mixture with the stir bar at 240rpm for 15 mins. After the coupons were cleaned they were left to air dry over night. The next morning, the clean weights of each coupon were taken.

| Soil       | Cleaner | Initial Content Weight | Final Content Weight | Percent Removed | Average Percent Removed |
|------------|---------|------------------------|----------------------|-----------------|-------------------------|
| Oak 7a     | SB-22   | 0.0651                 | 0.0018               | 97.24           | 96.27                   |
|            |         | 0.0343                 | 0.0017               | 95.04           |                         |
|            |         | 0.0462                 | 0.0016               | 96.54           |                         |
|            | SB-24   | 0.0685                 | 0.0019               | 97.23           | 94.55                   |
|            |         | 0.0362                 | 0.0022               | 93.92           |                         |
|            |         | 0.0293                 | 0.0022               | 92.49           |                         |
|            | MIX     | 0.0657                 | 0.0009               | 98.63           | 95.39                   |
|            |         | 0.0344                 | 0.0019               | 94.48           |                         |
|            |         | 0.0288                 | 0.0020               | 93.06           |                         |
| Echocut 44 | SB-22   | 0.0831                 | 0.0004               | 99.52           | 96.40                   |
|            |         | 0.0343                 | 0.0020               | 94.17           |                         |
|            |         | 0.0400                 | 0.0018               | 95.50           |                         |
|            | SB-24   | 0.0423                 | 0.0017               | 95.98           | 96.26                   |
|            |         | 0.0373                 | 0.0016               | 95.71           |                         |
|            |         | 0.0585                 | 0.0017               | 97.09           |                         |
|            | MIX     | 0.0712                 | 0.0016               | 97.75           | 97.11                   |
|            |         | 0.0513                 | 0.0015               | 97.08           |                         |
|            |         | 0.0399                 | 0.0014               | 96.49           |                         |

| <b>Substrates:</b>   |               | Brass                                                      |             |                                     |                    |
|----------------------|---------------|------------------------------------------------------------|-------------|-------------------------------------|--------------------|
| <b>Contaminants:</b> |               | Oil                                                        |             |                                     |                    |
| Company Name:        | Product Name: | Conc.:                                                     | Efficiency: | Effective:                          | Observations:      |
| TURI Cleaning lab    | SB-22         | 79% Ektapro EEP 14% t-butyl acetate 7% propylene carbonate | 96.00       | <input checked="" type="checkbox"/> | on soil Oak 7 A    |
| TURI Cleaning lab    | SB-22         | 79% Ektapro EEP 14% t-butyl acetate 7% propylene carbonate | 94.00       | <input checked="" type="checkbox"/> | on soil Echocut 44 |
| TURI Cleaning lab    | SB-24         | 92% Ektapro EEP 8% t-butyl acetate                         | 96.00       | <input checked="" type="checkbox"/> | on soil Oak 7 A    |
| TURI Cleaning lab    | SB-24         | 92% Ektapro EEP 8% t-butyl acetate                         | 96.00       | <input checked="" type="checkbox"/> | on soil Echocut 44 |

**Conclusion:** All three cleaners proved to be as effect as TCE.