

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2020
 DateRun: 02/10/2020
 Experimenters: Kaley Richards
 ClientType: Metal Finishing
 ProjectNumber: Project #1
 Substrates: Steel
 PartType: Coupon
 Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil
 Cleaning Methods: Ultrasonics
 Analytical Methods: Visual

Purpose: To determine the effectiveness of three aqueous cleaners in heated ultrasonics 125F.

Experimental Procedure: Three sets of three steel coupons were soiled with vanishing oil provided by the company and were immersed into three distinct beakers containing Aquavantage 1400 GD, Liquinox, and SC-1000 respectively. Heated ultrasonics at 120-122°F for 15 minutes was used to clean the coupons. Coupons were submerged in three distinct beakers containing deionized water as a rinse step for 5 minutes. Coupons were dried with an air gun for 10 minutes. Effectiveness of cleaning was observed visually and gravimetrically after the drying step and 48 hours later.

Results: After 15 minutes of heated ultrasonics and subsequent post-treatment, the vanishing oil was removed from the coupons cleaned with Aquavantage 1400 GD and Liquinox. A residue remained on the coupons cleaned with SC-1000, which disappeared after 48 hours of air drying.

Summary:

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|----------------------|---|---------------|--------------------|-------------------------------------|----------------------|
| Substrates: | Steel | | | | |
| Contaminants: | Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil | | | | |
| Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| Brulin Corporation | Aquavantage 1400 | 5% | 112.00 | <input checked="" type="checkbox"/> | |
| Alconox Inc | Liquinox | 1% | 127.00 | <input checked="" type="checkbox"/> | |
| Gemtek Products | SC 1000 Aqueous Cleaner Concentrate | 20% | 459.00 | <input checked="" type="checkbox"/> | |

Conclusion: Based on visual and gravimetric analysis, all cleaners removed the vanishing oil, but Aquavantage 1400 GD was the most effective cleaner for removing the vanishing oil from the steel coupons. It should be noted that clean weights are consistently less than initial weights for all coupons suggesting that coupons may not have been fully clean to begin with. The next step would be to completely clean the steel coupons and conduct heated ultrasonics with more vanishing oil added.