

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 07/12/1999

Experimenters: Jason Marshall

ClientType: Metal Working

ProjectNumber: Project #1

Substrates: Aluminum

PartType: Part

Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate vendor recommended cleaner for all three contaminants.

Experimental Procedure: The client supplied cleaner was made into a 5% solution by volume using DI water in 400 mL Pyrex beakers and heated to 130 F on a hot plate. Three preweighed coupons were contaminated with the each of the three contaminants and weighed again. Coupons were cleaned using the client supplied cleaner using stir-bar-agitation for five minutes. Coupons were rinsed in 120 F tap water for 30 seconds and dried using a Master Appliance Corp, Hot-air gun model HG-301A for one minute at 500 F. After cooling to room temperature, final weights were recorded and cleaning efficiencies were calculated.

SUBSTRATE MATERIAL: Aluminum Coupons (5052)

CONTAMINANTS: Tuf Draw Vanishing Film 2889 (CAS #: 64741-65-7); Lubricant Mix [Hydroil AW-3 9petroleum hydrocarbon), Express Gear Lubricant F]; Tower Oil & Technology Company LS-H-213 (CAS #: 8052-41-3)

Results: The Ultra Blue 100 cleaning solution was effective in removing the two drawing compounds, yet it could not clean the lubricant mix very well. Table 2 lists the calculated cleaning efficiencies for the three contaminants.

Table 2. Cleaning Results

| | Tuff Draw | Lub Mix | Tower |
|----------|-----------|---------|--------|
| Coupon 1 | 100.06 | 74.77 | 100.11 |
| Coupon 2 | 100.1 | 73.37 | 100.09 |
| Coupon 3 | 100 | 72.9 | 100.04 |
| Average | 100.05 | 73.68 | 100.08 |

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|----------|--|----------------------|---------------|--------------------|-------------------------------------|----------------------|
| Summary: | Substrates: Aluminum | | | | | |
| | Contaminants: Cutting/Tapping Fluids, Lubricating/Lapping Oils, Oil | | | | | |
| | Company Name: | Product Name: | Conc.: | Efficiency: | Effective: | Observations: |
| | BCS Company | Ultra Blue 100 | 5 | 100.05 | <input checked="" type="checkbox"/> | |

Conclusion: The Ultra Blue 100 cleaning solution was effective.