CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999

DateRun: 08/10/1999

Experimenters: Jason Marshall, Nicole Vayo

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Copper, Nickel, Stainless Steel

PartType: Coupon

Contaminants: Adhesive, Cutting/Tapping Fluids, Greases, Inks, Lubricating/Lapping Oils, Oil

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric

Purpose: To evaluate client supplied cleaning solution on all listed contaminants and one substrate.

Experimental Procedure: The cleaning solution was diluted to10% using DI water in a 600 mL beaker. The solution was heated to 130 F. Coupons were cleaned for five minutes. Rinsing was performed for two minutes using tap water at 120 F and air dried for about two hours also at room temperature. After drying is complete, final weights are recorded and efficiencies are calculated.

SUBSTRATE MATERIAL: 1-Nickel/Copper (202-715); 2-Stainless Steel (202-410 B-85)
CONTAMINANTS: Table 1 lists the contaminants and the related CAS#s for this trial.
Table 1. Contaminants Cleaned
Contaminant CAS #
Oil 64741-89-5
Lubricant 64742-47-8, 9003-29-6
Ink 67-63-0, 108-88-3, 9004-70-0, 141-78-6, 64-17-5, 109-60-4
Grease 64742-47-8
Adhesive 9010-98-4, 65997-13-9, 68083-03-4, 67-56-1, 1314-13-2, 119-47-1, 108-88-3, 8052-10-6

Results: The Concrete/Graffiti remover was successful in removing the oil and lubricant from the surface, but may have caused some damage to the substrate, but could not be visual detected. Further compatibility tests could be performed to determine the extent of damage being done to the metal. The cleaner was not very successful in removing the grease and ink. Most of the adhesive was cleaned from the surface. Table 2 lists the percent removal for each contaminant. The All purpose cleaner removed moderate amounts of the oil, lubricant and ink. The cleaner was very efficient in removing the grease and adhesive. Table 2 also lists the cleaning results from the All purpose cleaner.

Table 2. Cleaning Efficiencies

Contaminant	Concrete/Graffiti	All Purpose
Oil	102	78
Lubricant	102	80
Ink	37	75
Grease	66	94
Adhesive	86	96

Summary:

Substrates:	Copper, Nickel, Stainless Steel
Contaminants:	Adhesive, Cutting/Tapping Fluids, Greases, Inks, Lubricating/Lapping Oils, Oil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	102.00	☑	Oil
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	102.00	☑	Lubricant
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	37.00	☐	ink
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	66.00	☐	Grease
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	86.00	☑	adhesive
Safe Science Inc	Safe Science All Purpose (Industrial)	10	78.00	☐	oil
Safe Science Inc	Safe Science All Purpose (Industrial)	10	80.00	☐	lubricant
Safe Science Inc	Safe Science All Purpose (Industrial)	10	75.00	☐	ink

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Safe Science Inc	Safe Science All Purpose (Industrial)	10	94.00	☑	grease
Safe Science Inc	Safe Science All Purpose (Industrial)	10	96.00	☑	adhesive

Conclusion: The two cleaners evaluated had some success in removing the contaminants recommended by the manufacturer. All Purpose cleaner was more consistent than the Concrete/Graffiti Remover in the amount of soil cleaned from the coupons.