

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 1999  
 DateRun: 08/11/1999  
 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 to 10% 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	<input checked="" type="checkbox"/>	Oil
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	102.00	<input checked="" type="checkbox"/>	Lubricant
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	37.00	<input type="checkbox"/>	ink
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	66.00	<input type="checkbox"/>	Grease
Safe Science Inc	Safe Science Concrete/Graffiti (Industrial)	10	86.00	<input checked="" type="checkbox"/>	adhesive
Safe Science Inc	Safe Science All Purpose (Industrial)	10	78.00	<input type="checkbox"/>	oil
Safe Science Inc	Safe Science All Purpose (Industrial)	10	80.00	<input type="checkbox"/>	lubricant
Safe Science Inc	Safe Science All Purpose (Industrial)	10	75.00	<input type="checkbox"/>	ink

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Safe Science Inc	Safe Science All Purpose (Industrial)	10	94.00	<input checked="" type="checkbox"/>	grease
Safe Science Inc	Safe Science All Purpose (Industrial)	10	96.00	<input checked="" type="checkbox"/>	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.