

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023

DateRun: 05/05/2023

Experimenters: Amelia Wagner

ClientType: Manufacturing

ProjectNumber: Project #1

Substrates: Laminate

PartType: Coupon

Contaminants: Adhesive

Cleaning Methods: Manual Wipe

Analytical Methods: Visual

Purpose: To evaluate the effectiveness of several cleaners in removing adhesive from laminate.

Experimental Procedure: Two 2"x1" pieces of laminate were each divided into three equal sections for each product tested and initial visual rankings of cleanliness were recorded. Application of three, thin one-inch lines of Wilsonart 3000 adhesive in each section using a swab acted as three individual tests per product. A putty knife scraped the adhesive to create a very thin coating and air-dried at room temperature (68F) for 24 hours.

Diluted and or ready-to-use cleaners tested based on vendor recommendation:

- (A) Startex Laquer Thinner (100%) (Current Product)
- (B) MD Stetson HD-32 Heavy Degreaser (31%)
- (C) Bioneat All Purpose Cleaner (6:1 Dilution)
- (D) MD Stetson EPS (1:10 Dilution)
- (E) Cloth + Bristle All The Things (100%)
- (F) RhodiaSolv IRIS (100%)

Prepared cleaners in spray bottles sprayed five times on a t-shirt rag and three sprays directly on the laminate section before manually wiping the surface for 20 seconds. Recordings of visual rankings for each strip of adhesive in a section used the following ranking key:

Rating	Description
1	Adhesive completely removed
2	Most of the adhesive removed
3	Partial removal of the adhesive
4	A little removal of the adhesive
5	No removal of the adhesive

An additional treatment of the cleaner and manual wiping for a minute and 49 seconds based on the current and previous testing efficacy of the current product mentioned in Trial 0. Comparison of alternative products to the current product performance determined efficacy.

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Results:

Product	Cleanliness Ratings		
	20 Seconds	Additional 1:49	Overall Final Average Removal
Startex Lacquer Thinner	4.5	1	1
	5	1	
	4.5	1	
MD Stetson HD-32 Heavy Degreaser	4.5	1	1
	4.5	1	
	4.5	1	
Bioneat All Purpose Cleaner	5	2.5	1.5
	5	1	
	5	1	
MD Stetson EPS	3	1	1
	3	1	
	3.5	1	
Cloth + Bristle All the Things	4	2	1.67
	4.5	1.5	
	5	1.5	
RhodiaSolv IRIS	4.5	3.5	3.33
	4.5	3.5	
	4.5	3	

**Startex Lacquer Thinner (100%) Current Product:** Little peeling after 20 seconds; took 1:49 seconds to completely remove the adhesive. The timeframe used for other products to determine efficacy.

**MD Stetson HD-32 Heavy Degreaser (31%):** Completely clean with additional time and no residue.

**Bioneat All Purpose Cleaner (6:1 Dilution):** Small spot of residual adhesive. Additional time could remove the rest.

**MD Stetson EPS 1:10 Dilution:** Completely clean with an additional minute and 15 seconds.

**Cloth + Bristle All the Things (100%):** Barely any adhesive left near the top and bottom of the section of laminate. A small amount of additional time is needed for complete removal.

**RhodiaSolv IRIS (100%):** Little to partial removal of the adhesive even with additional time. Would need a lot more time to remove or a longer soaking period on the surface.

Summary:

Conclusion:

MD Stetson HD-32 Heavy Degreaser (31%), Bioneat All Purpose Cleaner (6:1 Dilution), MD Stetson EPS (1:10 Dilution), and Cloth + Bristle All the Things (100%) are considered as effective as the original product after 24 hours of air-drying the adhesive on a laminate surface.