

# CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2016  
DateRun: 10/11/2016  
Experimenters: Francisco Abreau  
ClientType: Cleaner Manufacturer  
ProjectNumber: Project #1  
Substrates: Marble  
PartType: Coupon  
Contaminants: Calcium/lime  
Cleaning Methods: Immersion/Soak  
Analytical Methods: Gravimetric, Visual

Purpose: To evaluate the supplied products for Marble surface cleaning effectiveness.

Experimental Procedure: First, 2 marble coupon tiles of the same size were obtained; 2 coupons each for the two supplied cleaners. The initial weights of the coupons were acquired in order to use it as a standard and also to determine how much of the marble was dissolved after immersion in the cleaners. The marble coupons were subjected to immersion in the cleaners and observations were noted for 1 minute, 5 minutes, 10 minutes, 15 minutes, and 30 minute intervals. After the 30 minute mark, the marble coupons were then rinsed with tap water for 15 seconds each to rinse away any of the remaining cleaners. Then, each marble coupon was dried using a heat gun set at 300° F for 30 seconds each. Finally, the mass of each marble coupon was then noted to record any change in mass.

Results: The results from the testing are reported in the table below:

Cleaner	Initial wt	Final wt	Observations
Citrus Cleaning ES	31.581	29.5416	1 min -No Fizzing; - Bubbles Formed on Marble
			5 min - Water turned cloudy - Small amount of fizzing seen - Marble precipitate seen
			15 min - Solution is now very turbid and is the same color as the marble coupon -Strong fizzing action still seen
			30 min - Strong fizzing action still present -Heavy turbidity of solution
Lysol Power Bath	29.5416	28.363	1 min - Slight fizzing seen
			5 min - Small fizzing still present -Marble coupon began to crack
			15 min -Fizzing action is reduced - Solution is now the same color as the marble coupon
			30 min - Fizzing action is small- Solution is turbid and starting to turn to the color of marble coupon

## CLEANING LABORATORY EVALUATION SUMMARY

### Summary

Cleaner	Wt loss	% Loss
Citrus Cleaning ES	2.04	6.46
Lysol Power Bath	1.1696	3.96

### Summary:

<b>Substrates:</b>		Marble			
<b>Contaminants:</b>		Calcium/lime			
<b>Company Name:</b>	<b>Product Name:</b>	<b>Conc.:</b>	<b>Efficiency:</b>	<b>Effective:</b>	<b>Observations:</b>
A Natural Cleaning Company	Citrus Cleanser Extra Strength	100		<input checked="" type="checkbox"/>	6.46% loss
Reckitt Benckiser	Lysol Bathroom Cleaner	100		<input type="checkbox"/>	3.96 % loss

### Conclusion:

It was found that the worst performing cleaner on the marble surfaces was the Lysol Power Bath. Visually, it had less fizzing action when compared to the Citrus cleaner. The Lysol cleaner also dissolved less of the marble coupon; only 1.17g. When compared to the Citrus Cleaning ES cleaner, the Citrus cleaner performed much better. Visually, it was seen to provide substantial fizzing action when it was applied to the marble coupon; at 5 minutes marble precipitate started forming at the bottom of the beaker. The Citrus cleaner even dissolved the marble coupon to a greater extent than the Lysol cleaner. The marble coupon of the Citrus cleaner was found to have been dissolved by 2.04g when the initial and final weights were subtracted, supporting the fact that it performed better than the Lysol product.