

**Report Date:** April 21, 2021

**Report #:** 24721A-21-04-2021

**Client:** Plant Therapy  
 510 2nd Ave S  
 Twin Falls, ID, USA  
 83301

**Test:** ASTM D4488-A5 Particulate and Oily Soil/Vinyl Tiles Test Method

**Samples:**

Sample Name	LC#	Test Dilution
Defender Multi-Surface Cleaner Concentrate (15:1)	21-0144	1 oz Defender Concentrate to 15 oz water

**Procedure:**

A synthetic oily soil is prepared of an oil phase and a particulate phase. 50 mg of particulate soil is placed on a white vinyl tile tile over a space of 2 x 4 in. This is done with a template to insure a constant application area. Five drops of the oily blend is applied to double thickness paper towel and rubbed in a circular motion over the particulate soil. The panels are allowed to air dry for 24 hours. Reflectance readings are taken before and after soiling and after cleaning. Cleaning is done by soaking a sponge in 50mL of test solution and allowing the test area to be immersed in 20mL of test solution for 60 sec and then scrubbed for 10 cycles with a Gardner Straight-line Washability Apparatus.

Cleaning Efficiency is evaluated using reflectance measurements

$$\% \text{ Cleaning Efficiency} = (R_c - R_s) / (R_o - R_s) \times 100$$


Where  $R_c$  = cleaned reflectance  
 $R_o$  = original reflectance  
 $R_s$  = soiled reflectance

**Results:**

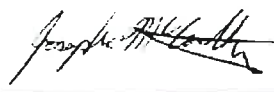
Sample	% Cleaning Efficiency*	Standard Deviation
Defender Multi-Surface Cleaner Concentrate (15:1)	95.64	2.62

*\*3 replicates for each product were tested*

**Tested by:**

  
 Katherine Hatherley, Lab Technician

**Approved by:**

  
 Joe McCarthy, Lab Services Manager

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