



TEST SUMMARY

The air purifier was challenged with three VOCs representative of what are found in homes: formaldehyde, toluene, and D-limonene.

TEST PROCEDURE:

The purpose of this testing is to determine the efficacy of the Celios G200 to remove challenge VOCs. VOC removal testing was performed referencing NRCC-54013 (April 2011): Method for Testing Portable Air Cleaners sections 3.2 and 5.1.2.

Natural system decay for the challenge chemicals is performed prior to the test. The unit was placed in the center of a chamber which was sealed and flushed with clean air for a minimum of one night. An additional enclosure fan was operated to ensure air mixing. The challenge chemicals (formaldehyde and toluene) were injected and allowed to circulate for 30 minutes during which an air sample was taken. Each challenge chemical was performed using a fresh filter. The system was then turned on using the highest fan speed beginning the test timing.

VOC samples were collected at 5, 10, 15, 20, 25, 30, 45, 60, 90, 120, 180, 240, 300, 360, 420, and 480 minutes after starting the system. Samples analyzed for toluene were collected on multi-sorbent tubes containing Tenax TA. These VOC samples were analyzed by thermal desorption-gas chromatography/mass-spectroscopy, TD-GC/MS. Samples analyzed for formaldehyde were collected on cartridges treated with 2,4-di-nitrophenylhydrazine (DNPH) and were analyzed using high performance liquid chromatography, HPLC. Individual VOCs were calculated using calibration curves based on pure standards.

TEST SUMMARY RESULTS:

After 8 hours of testing the G200 removed 99% of toluene, 99% of D-limonene, 71% of formaldehyde.

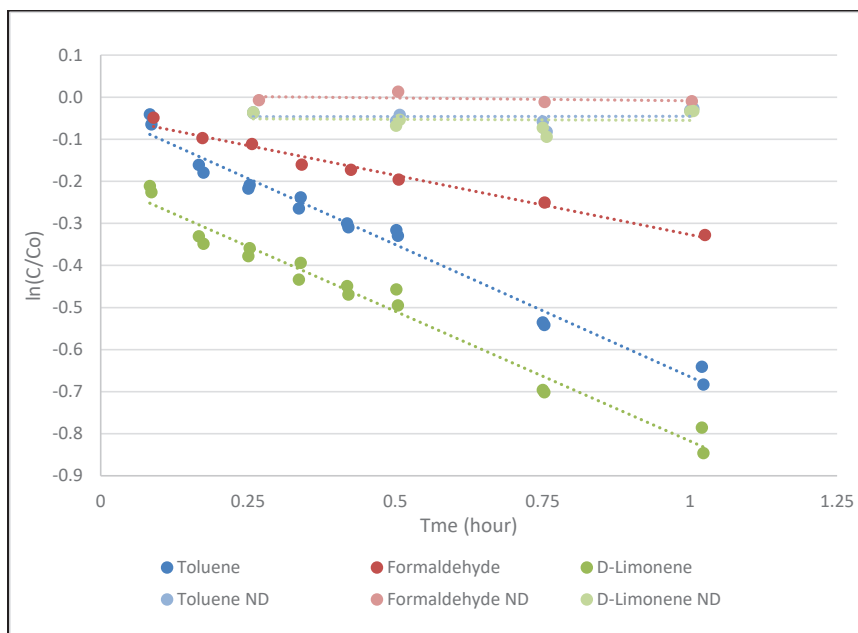


Figure 2: Removal rate of challenge chemicals.