

Chemical emissions from residential dryer vents during use of fragranced laundry products

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Abstract

Common laundry products, used in washing and drying machines, can contribute to outdoor emissions through dryer vents. However, the types and amounts of chemicals emitted are largely unknown. To investigate these emissions, we analyzed the volatile organic compounds (VOCs) both in the headspace of fragranced laundry products and in the air emitted from dryer vents during use of these products. In a controlled study of washing and drying laundry, we sampled emissions from two residential

dryer vents during the use of no products, fragranced detergent, and fragranced detergent plus fragranced dryer sheet. Our analyses found more than 25 VOCs emitted from dryer vents, with the highest concentrations of acetaldehyde, acetone, and ethanol. Seven of these VOCs are classified as hazardous air pollutants (HAPs) and two as carcinogenic HAPs (acetaldehyde and benzene) with no safe exposure level, according to the US Environmental Protection Agency. As context for significance, the acetaldehyde emissions during use of one brand of laundry detergent would represent 3% of total acetaldehyde emissions from automobiles in the study area. Our study points to the need for additional research on this source of emissions and the potential impacts on human and environmental health.

Keywords

Emissions Fragrance Dryer vent Laundry products VOC
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Notes

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