What's Cooking? Effects of Cookware and Cooling Materials on Air Quality

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Volatile organic compounds are significant precursors of atmospheric ozone and secondary organic aerosols, and different compositions of VOCs have different effects on atmospheric reactions. The purpose of this project is to observe how different pan coating materials react with cooking oils to produce VOCS. The procedure involves testing how the fumes are released during the heating of each oil on the three different pans and how they can affect air quality. The teflon coated pans will release the highest amount of VOCS due to the presence of PFOA's. We conducted 5 tests with 3 trials for each type of pan. Data was gathered and organized using a Volatile organic compound index. Canola oil on a ceramic pan classifies under the moderate index category (221-660). Lard being heated on a ceramic pan is under the good ppb level, (0-220), corn oil heated on a teflon pan is under the high ppb level(661-1430), vegetable oil heated on a ceramic pan is under moderate ppb level (221-660), and olive oil heated on a teflon pan is under moderate ppb levels (221-660). This is significant because it shows that the type of pan used also affects the amount of VOCS each oil emits. The experiment supported the Hypothesis, but further trials need to be done.

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