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Effects of Model, Method of Collection, and Topography on Chemical Elements and Metals in the Aerosol of Tank-Style Electronic Cigarettes

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Our purpose was to examine the effect of model, puffing topography (voltage, air-flow, puff interval), and method of collection on 19 elements/metals in aerosols from six tank-style electronic cigarettes (EC). Aerosols were collected from six brands using a cold trap or impinger and various puffing topographies. 19 elements were quantified using inductively coupled plasma optical emission spectroscopy. 16 elements/metals were present and quantified in the aerosols. The total concentrations of elements/metals ranged from 43 to 3,138 $\mu\text{g/L}$ with the impinger method of collection and 226 to 6,767 $\mu\text{g/L}$ with the cold trap method. The concentrations of individual elements were often similar across brands and across topographies. Some elements (e.g., zinc) were present in most aerosols, while others (e.g., cadmium, titanium, vanadium) were rarely found. Concentrations of some elements (e.g., lead) increased in aerosols as voltage/power increased. The model with fewest metal parts in the atomizer had the fewest metals in its aerosols. Most elements/metals in the aerosols have been found previously in the atomizers of EC. All tank-style aerosols had elements/metals that appeared to originate in the atomizers, and concentrations increased with increasing power. Concentrations of some elements were high enough to be a health concern.

Chem 370

Scientific Writing

reports | what's the difference?

Technical Reports vs. Lab Notebooks

The **lab notebook** is a (legal) **record**. It contains **all exact details** about the experiment.

A **technical report** is a detailed, but curated, **narrative** about the project. It generally omits exact details to focus on the overall "story".

Note that curating information is not the same thing as omitting data! You cannot leave out data simply because they don't support the story you *want* to tell.