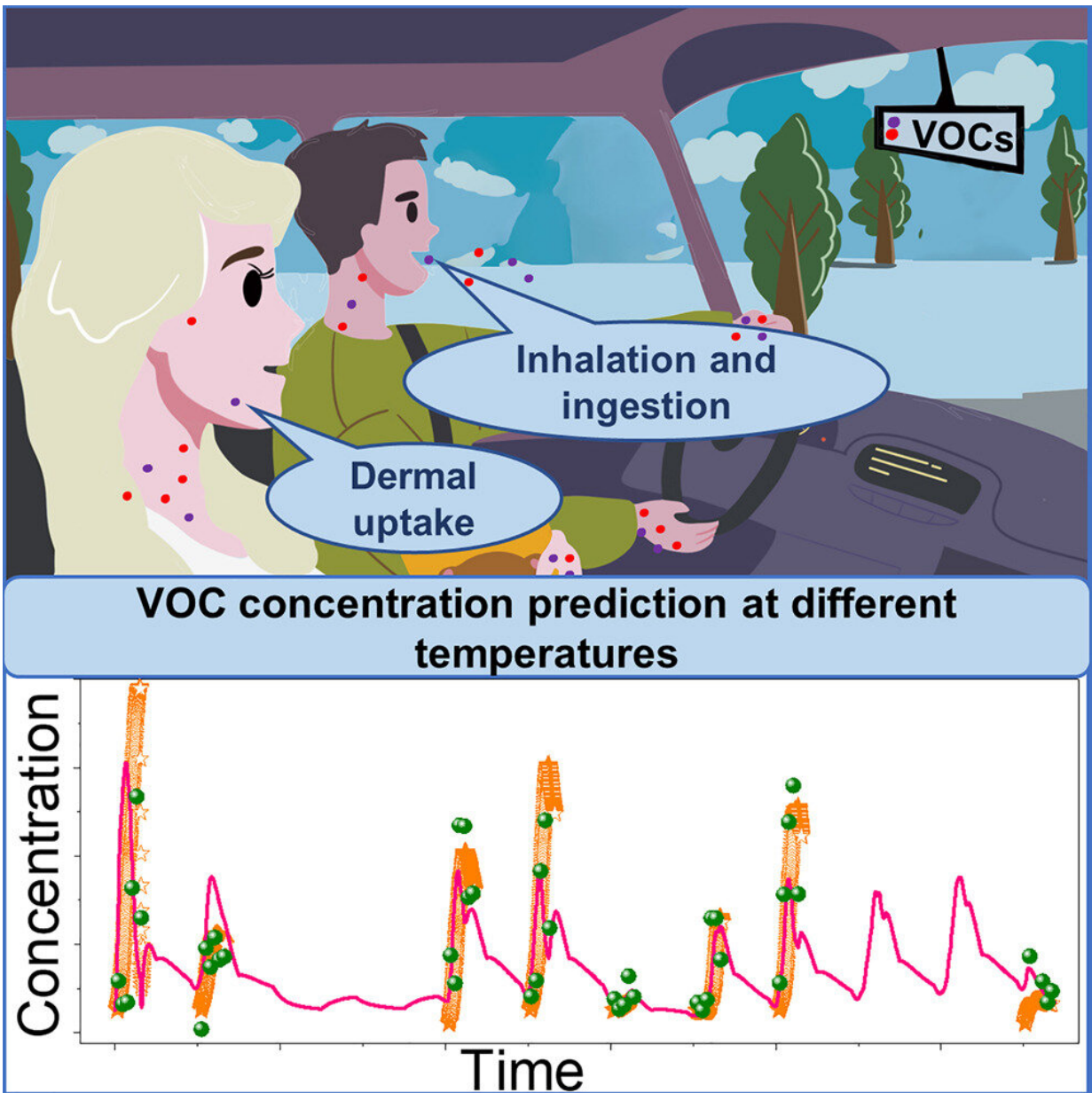


That new-car smell may be a sign of exposure to a host of hazardous chemicals

April 14 2023, by Bob Yirka



Graphical abstract. Credit: *Cell Reports Physical Science* (2023). DOI: 10.1016/j.xcrp.2023.101375

A team of mechanical and civil engineers working with occupational health scientists affiliated with several entities in China and two colleagues from Harvard University found high levels of a host of chemicals inside of a newly purchased SUV. In their study, reported in the journal *Cell Reports Physical Science*, the group analyzed air samples inside the vehicle over multiple days.

Cars, trucks and SUVs all have one thing in common: When purchased brand-new, they come with what has come to be known as that "new car smell." That smell is made up of chemicals released into the air by materials used to make cars—a process known as off-gassing. Prior research has suggested that some of those chemicals, such as formaldehyde, may pose a [health hazard](#) for new car drivers. In this new effort, the research team took a more serious look at the chemicals released into the air by just one vehicle—a brand-new, midsize, plug-in hybrid SUV that was manufactured within one month of testing.

The team parked the SUV in a local outdoor parking lot and tested the air inside of it every day for 12 consecutive days. They note that over the course of their study, [environmental conditions](#) changed, most noticeably, air temperature—from 21°C to 63°C. They used gas chromatography-mass spectroscopy to identify chemicals in air sample and their concentrations.

The researchers identified 20 chemicals in the [air samples](#) that had come from components used to make the vehicle. Their amounts varied depending mostly on [surface temperatures](#) inside the car (not air temperatures). They found that the amounts of some chemicals, such as

formaldehyde, exceeded Chinese government safety standards at some points by up to 35%. Acetaldehyde, a known carcinogen, exceeded standards by 61%. The team also found levels of benzene that they described as being unsafe for drivers breathing it for long drives. They suggest new car buyers ride with the windows open.

More information: Haimei Wang et al, Observation, prediction, and risk assessment of volatile organic compounds in a vehicle cabin environment, *Cell Reports Physical Science* (2023). [DOI: 10.1016/j.xcrp.2023.101375](https://doi.org/10.1016/j.xcrp.2023.101375)

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Citation: That new-car smell may be a sign of exposure to a host of hazardous chemicals (2023, April 14) retrieved 29 April 2024 from <https://phys.org/news/2023-04-new-car-exposure-host-hazardous-chemicals.html>

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