Getting rid of in-car pollution

STORY • MAZLAN SAMAD

You are stuck in a traffic jam and like most people, you would probably think the only consolation here is that you and your passengers are at least breathing cleaner air than the one outside.

Now, here's something to make you choke: A report by the environmentalist group Greenpeace indicates that in many traffic conditions, the pollution levels *inside* – yes, inside - the car can be up to 18 times higher than those in "ambient" air outside.

"Ambient" air in this study refers to the air tested simultaneously at fixed monitoring stations located 50 and 100 metres from a roadside. The Greenpeace report examines levels of three main pollutants – volatile organic compounds (VOCs), carbon monoxide and nitrogen dioxide.

Compiled from studies conducted in Britain, Europe and the US, the report also shows that cars do not provide protection to drivers and other occupants from pollution caused by traffic. In situations such as traffic congestions, motorists and passengers can be exposed to higher levels of health-damaging pollutants than pedestrians. The air inside of cars typically contains more carbon monoxide, benzene, toluene, fine particulate matter and nitrogen oxides than air at the side of the road. The in-car pollution almost exclusively comprised of gasoline and diesel exhausts.

VOCs such as benzene and toluene are notorious for their carcinogenic effects and other health risks. Carcinogens are cancer-causing agents which we should all avoid as much as we can, especially where children are concerned because VOCs have a nasty cumulative effect on one's health. In other words, these compounds will not kill you immediately but long-term exposure might just do that.

Having read this far, you could be tempted to buy a cabriolet and drive topless all your life.

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A more viable solution, particularly if a car is indispensable for your transportation needs, would be the "Iogenic" treatment, which utilizes the principle of photocatalysis to remove VOCs in your car.

This treatment, developed and marketed in Singapore by Nanoaq Pte Ltd, is essentially a scientific approach in removing and destroying low-level pollutants, including VOCs, in the air.

As the name suggests, a catalyst - in this case titanium dioxide – reacts with light to trap and chemically oxidize VOCs, converting them primarily into relatively harmless carbon dioxide and water. Apart from destroying VOCs, the Iogenic treatment is also effective in killing bacteria and virus, as well as removing foul odours and strong smells from the cabin.

The photocatalytic properties of titanium dioxide were first discovered in Japan in 1964 by two scientists who named it the "Honda-Fujishima Effect". *[No prizes for guessing the names of the two scientists.]* Nanoaq, however, took it a step further and designed the system for use in vehicles.

A typical Iogenic treatment takes less than an hour but lasts at least three years. The process begins with the interior being cleaned with detergent to remove oil and dust. The titanium dioxide compound is then sprayed into the cabin and allowed to settle. A second burst of fine mist is then administered.

The mist, which contains the titanium dioxide compound, settles on every square inch of the cabin, from the seats and carpets to dashboard, windows and windscreens. The cabin is then allowed to dry and after a good clean wipe to remove all traces of water condensation, the treated surface is as good as before. Being a particle of less than 10 nanometer in size, the compound is virtually invisible to the naked eye. In fact, you won't be able to feel the difference on the treated surface but it's nonetheless there to do its job of removing those noxious VOCs and revitalizing the air within the cabin. ●

[Note: For more information on the Iogenic treatment, refer to the Nanoaq advertisement in this issue.]