

Virus-killing Ozone Generator: **Savior for Shared Vehicles?**

by Kami Buchholz

Tier-1 supplier Magna evaluates its proven Puro virus-killing technology for a potentially new role: sanitizing vehicle interiors.

An ozone-generating process that kills germs is being evaluated by supplier Magna for potential use in vehicle cabins, as the mobility industry seeks sustainable solutions for protecting passenger health. Magna's Puro branded product, soon to enter volume



Magna's Puro was initially designed and developed to eliminate bacteria and odors from everyday items, including sports equipment, stuffed animals and toys.

production, is a portable, plastic container that sanitizes clothing, toys, stuffed animals or other items placed inside a latched and locked bin.

"Our immediate focus for our sanitizing technology is to help with the current personal protection equipment (PPE) shortage being experienced by our front-line coronavirus workers. That said, we hope to leverage this Magna technology to sanitize ride sharing vehicles and other future mobility applications," Scott Mitchell, global director of New Technology & Innovation for Magna Mechatronics, told SAE's *Autonomous Vehicle Engineering*.

A 25- or 45-minute sanitizing cycle is selected via the container's LED user interface. Powered by a 120-volt outlet, all operational functions are governed by proprietary software developed by Magna. "Once the disinfection process is initiated, the sealed chamber generates a high ozone concentration by energizing the oxygen particles on the items inside the container," Mitchell explained. "The ozone reverts back to oxygen before the cycle ends."

According to Mitchell, ozone is a high-oxidizing agent proven to be very effective at killing many viruses and Magna's process of generating and neutralizing the ozone is covered by patents. Although the current Puro sanitizing system is a small household

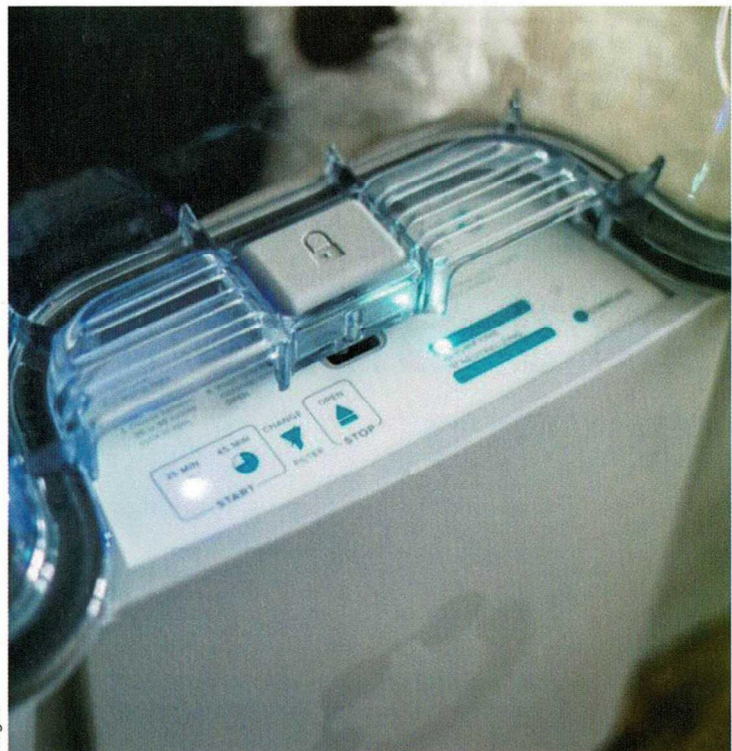
Magna

appliance, Magna's design and manufacturing capabilities for latching mechanisms, sealing systems, and electronics set the stage for a technology transfer to future vehicles.

"Although it's still too early to say how we'd go about implementing a sanitizing method for a vehicle interior, we have lots of options on the table that are under review," Mitchell said. The ozone-generating technique has a clear advantage over using concentrated ultraviolet (UV) light to disinfect surfaces, Mitchell noted. "Ozone technology is gaseous, so it can reach crevices and cracks and migrate freely throughout a vehicle cabin versus the line-of-sight that's needed for sanitizing with UV light," he said.

A longer timeframe is needed to complete an ozone-generating sanitation for porous materials. "As a system integrator, it's part of our job to suggest materials for seat coverings and other high-touch points," Mitchell said. For autonomous vehicles serving routes that have lengthy time gaps between new riders boarding, a 45-minute sanitizing time is not problematic. "The sanitizing process would occur when the vehicle is without occupants," he said.

Germ-free, automated transportation for the masses is likely to be highly desirable. "In light of the current COVID-19 crisis and knowing that this ozone-generating product was proven to be



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The ozone-generating, sanitizing device was developed by a team of Magna engineers who typically design automotive parts. The consumer product is ramping to volume production at a Magna facility in Ontario, Canada.

effective against the MRSA — Methicillin-resistant *Staphylococcus aureus* — bacterium in third-party lab testing, we want to see if we might have something that can help save lives," Mitchell said. "Testing is being conducted to determine how effective it is on COVID-19." ■