

Ingenious IOGENIC!

words Bernard Chan

Many people spend money to take really good care of their cars, keeping it in the pink of health, but seldom do they consider their own well being. It has been well-documented recently that the air in the car's cabin can be harmful to one's health.

While air-conditioning filters will stop larger particles from entering the cabin, there are also some Volatile Organic Compounds (VOCs) that are gaseous and cannot be filtered. Some common examples are butadiene, benzene, toluene, carbon monoxide and formaldehyde. These VOCs have the potential to seriously harm the driver and passengers. VOCs are also the reactants in chemical reactions that result in ground-level ozone (smog).

Another interesting fact is that the highly-coveted new car smell is actually a concoction of hazardous VOCs caused by the new rubber seals and other materials out-gassing as they settle into their life cycles.

IOGENIC is a detoxification, sterilisation and deodorisation treatment for the interior of cars. It removes VOCs, bacteria, and foul odours through photocatalysis. Furthermore, the effect is continuous as long as there is light present. One treatment will last at least three years.

IOGENIC treats the interior surfaces with TiO₂ (Titanium Dioxide). When the IOGENIC-treated surface is exposed to radiant energy (UV and/or visible light), electricity is generated. The TiO₂ is now in an excitation state and a hole (h⁺) is generated while an electron (e⁻) is intensified.

An electron, in the presence of oxygen in the air, is transformed into a superoxide anion. The hole, on the other hand, is transformed into a hydroxyl radical by moisture in the air. These are known as active oxygen. When organic substances like germs and microbes come into contact with the active oxygen, these bonds are broken, and the resultant by-products are harmless carbon dioxide (CO₂) and water vapour (H₂O).

Active oxygen is ever present on the IOGENIC-treated

surface in the presence of light. Being a much stronger oxidising agent than sodium hypochloride or ozone, all organic matter will be oxidised very rapidly, resulting in the formation of CO₂ and H₂O.

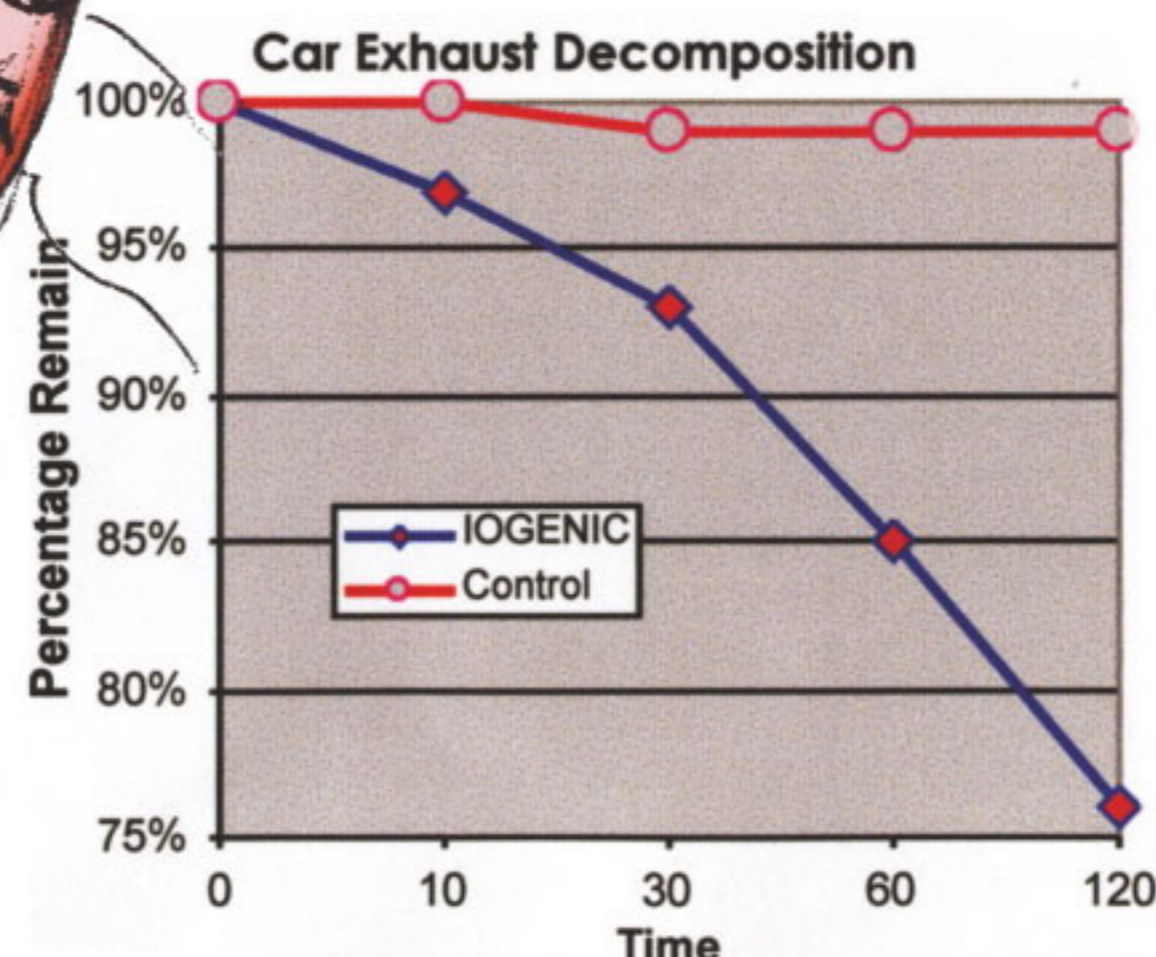
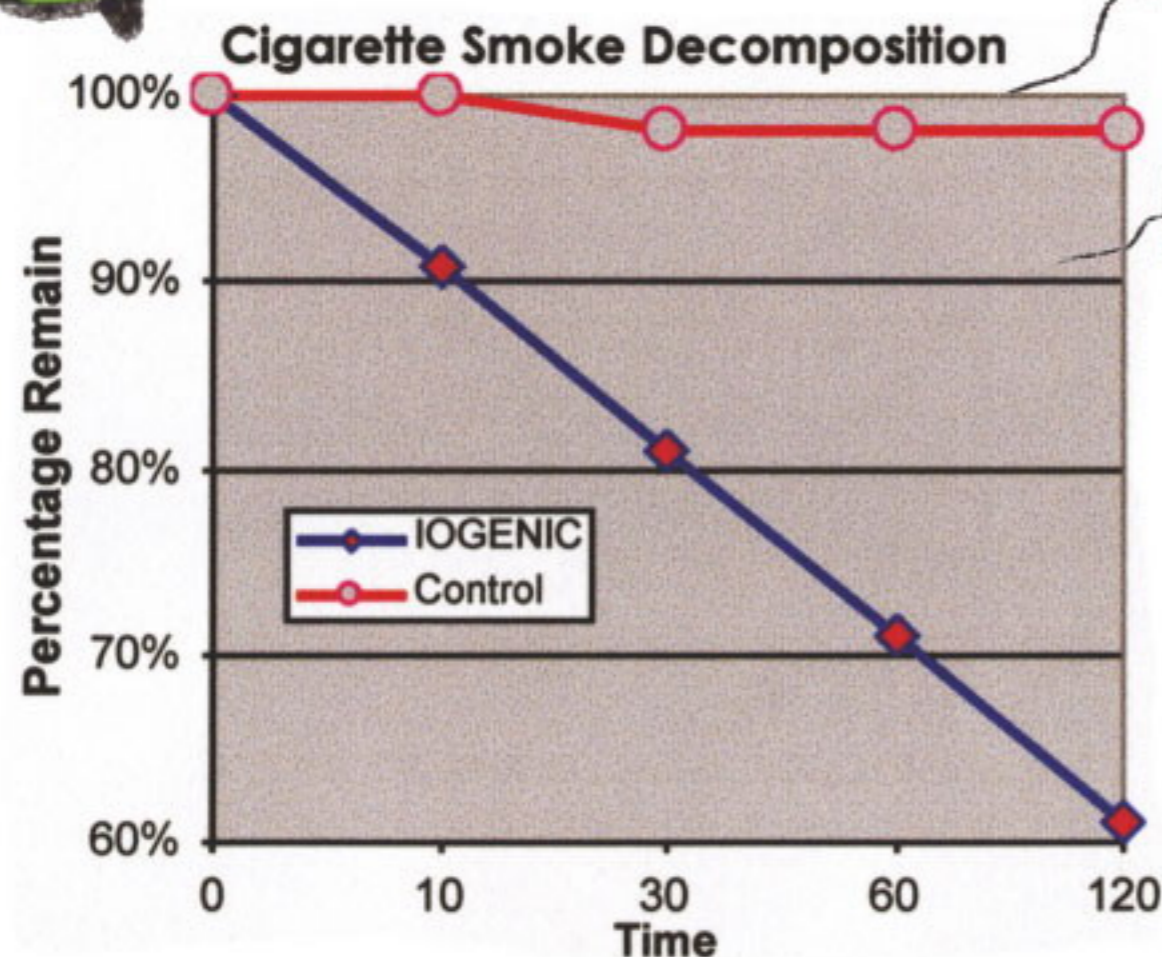
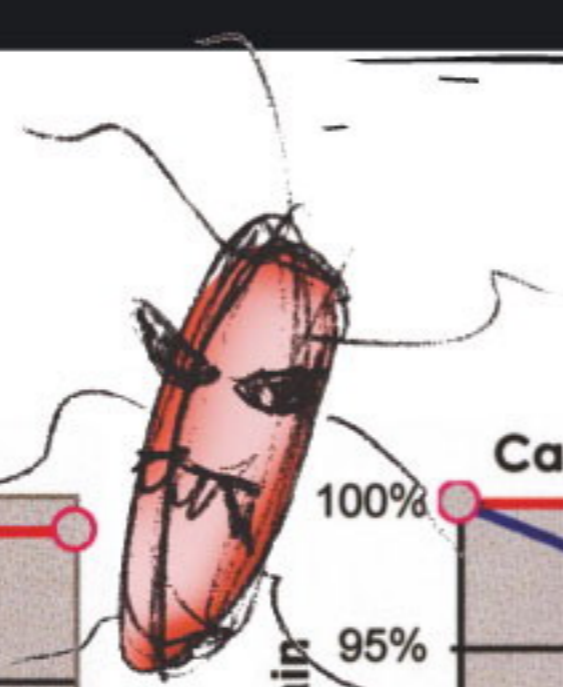
A typical IOGENIC treatment starts with a thorough wipe-down of the car's interior surfaces using a very mild detergent to remove any residual oils, dust and dirt. This is to ensure proper bonding of the TiO₂ to the surface. Thereafter, the IOJet is placed in the back seat and allowed to fog up the interior for 12 to 18 minutes, depending on the size of the car's interior.

The IOJet is then switched off for 10 to 15 minutes to allow the IOGENIC solution to settle and coat the interior surfaces completely. The air-conditioning will then be switched on to dry any surfaces that may still be wet, and at the same time, more IOGENIC solution is sprayed into the footwells to allow the air-conditioning system to draw the solution into the system, and coat the filters.

The air-conditioning is then switched off and the solution is then sprayed into all of the air-conditioning vents to treat all surfaces inside, and then allowed to settle for 10 to 15 minutes. The entire car has now been treated. My immediate impressions were that the air immediately smelled much fresher and cleaner, deodorised of any trace of odours.

A certificate of completion is issued with every first-time treatment, which is essentially an offer for another complimentary retreatment in three years. An interesting note is that unlike other car ionisers, the IOGENIC treatment is always at work. With the engine switched off, and as long as there is light present, the IOGENIC effect will take care of any VOCs and bacteria.

For more information, contact Nanoaq Pte Ltd at tel: 68448012 or visit www.iogenic.com.sg



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