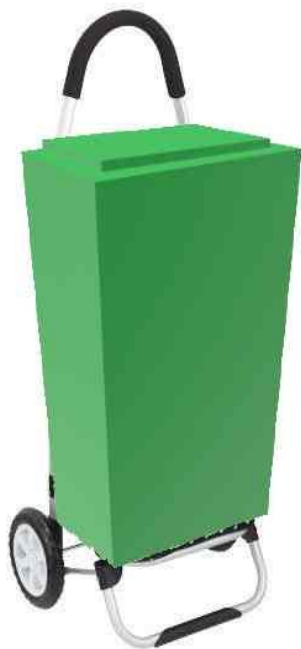


O'safe, multipurpose ozone sanitizer



O'safe was designed so that everyone, especially the elderly, can use ozone safely to defend themselves from COVID-19. Absolutely innovative, *O'safe* consists of a shopping trolley, with a rigid waterproof basket thanks to which it is possible to sanitize the contents independently and safely with ozone.

Used for shopping (at the supermarket, at the market, in the shops) it is closed and switched on when loading it in the car or walking home. Once at home, the ozone sanitation cycle (duration 30' - 40 ') is practically finished and all that has been purchased is sterile and immediately usable.

Not only that: by detaching the container from the metal trolley with wheels (the trolley can remain outside the home), you get a sort of cupboard of discrete capacity that can be used inside each home to quickly sanitize all the objects used at the external such as shoes, coat, hat, gloves, glasses etc.

O'safe can be used anywhere, for example in the laundry room or in the bathroom and does not create problems: being airtight, you

never have ozone spills, nor do you need a power outlet. It can also be used in camping to live peacefully in tents or caravans!

O'safe represents an important innovation compared to the state of the art of sanitizing with ozone. The integration of advanced technologies allows everyone to take advantage of the ozone process with the simplicity and safety of usual household appliances.

specifications

Internally watertight container, with self-locking lid.

Externally the container and the controls are waterproof, able to resist even torrential rain.

Separable from the trolley with wheels, it works in any position, even upside down in the trunk of a car.

Automatic and short-term ozone sanitization cycle.

Very simple and safe controls, they cannot be activated by mistake or due to accidental impacts.

It has an easily readable display, with few but fundamental information: *status ok, time left at the end of the sanitation cycle, alarms.*

Safety device even in case of breakage: the container opens only if the ozone level inside is safe.

Operation with rechargeable batteries, with an autonomy of about ten cycles.

Operating temperature: $-10^{\circ} + 50^{\circ} \text{ C}$

O'safe further specifications

*Technical details: **container***

Made of non-deformable plastic material resistant to ozone and solar UV even for a long time.

Light and with a low center of gravity, very stable in the vertical position, easily washable and disinfectable both inside and outside.

All the technical part (controller, generator, combiner, batteries, controls) can be separated from the container in a single block (for maintenance or to use decorated alternative containers).

Internally the container has vertically grooved walls, to promote air circulation. The slightly flared shape favors the extraction of the content. Rounded edges for easy cleaning.

The openings for ozone circulation are protected by a thick Venetian blind and a filter that blocks the water but not the air.

The bottom can contain up to 3 liters of liquid, in case of accidental breakage of a bottle. On the bottom there is also a large circular opening, closed with a screw cap, easy to open, to empty any spilled liquids or to wash the inside of the container under a shower.

The sensors are inside and have a double screen, in order not to be reached in any case by splashes of water.

Externally rounded and fluid shapes for easy sterilization with a simple cloth and disinfectant liquid. Carrying handle; visible and accessible horizontal controls, absolutely watertight.

The watertight **lid** has a large and simple handle closure, easy to use even with gloves. The lid folds forward leaving the upper opening free.

The lid is self-locking: it is not possible to open it once a cycle has started, nor is it possible to start a cycle with the lid open (as for a washing machine).

*Technical details: **trolley***

The container is permanently fixed to its metal trolley by means of a locking handle which is part of the trolley itself. The hooking and unhooking operation is simple and safe. The container is particularly reinforced in the corresponding points.

The trolley is very simple and linear, without blind holes or receptacles, to be sterilized simply with a cloth soaked in disinfectant. The two metal wheels are idle but not swiveling and do not have rubber tires. The axle is mounted with an elastic joint to cushion the impact of the ground.

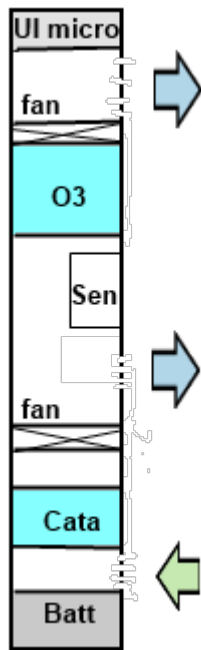
*Technical details: **ozone generator***

An adequate ozone generator (e.g. 500 mg / h) with fan, distributes ozone in the upper part of the container.

Preferably at UV, considering the high RH value (60% -100%) that can reach the air inside the container. Impact and acceleration resistant construction. High quality fans, with good head and long useful life in polluted air.

Technical details: **ozone recombiner**

To speed up the cycle, you cannot rely only on spontaneous recombination of ozone. Therefore a catalytic recombiner with fan is automatically activated in the recovery phase.



Technical details: **controller**

With microprocessors, it is responsible for operating logic and safety. It has sensors for ozone, temperature and humidity. It guarantees an ozone treatment at **2 ppm for 20 minutes** in the indicated temperature range.

Check the performance of the batteries and warn when you need to recharge or change them. Informs the user of the need for any other periodic maintenance operations (filter change, UV lamp change etc.)

The **controller** communicates externally via UI (commands and displays) but also via WIFI, IOT compatible (Internet Of Things, standard protocol MQTT) with a complete set of messages, both on the data of the sanitization in progress (times, concentration, humidity etc ..), and on the state of the batteries, with a complete set of control and configuration commands (open source).

Controls: one large button and three states: off, timed stand-by and started. For maximum safety of use, press the button 2 times to start a sanitation cycle, otherwise it goes into stand-by and switches off automatically after 30 seconds.

Display in stand-by indicates the residual charge, in operation it shows the countdown of the minutes at the end of the cycle, with a large and bright display (e.g. 7 segment LED), such as to be easily readable outdoors, under the sun, even from an elder. Some special configurations identify the other needs for intervention, such as recharging, maintenance, failure.

Technical details: **security**

In the event of an ozone leak or some malfunction or breakdown of the controller during a sanitizing cycle (watch dog), the device switches off completely, except for a simple timed mechanism (with autonomous power supply) that opens the lid only after waiting adequate to allow self-recombination of ozone.



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