Restoring clean, safe and healthy spaces through professional ozone treatment.

We improve air quality and help reduce unpleasant odours and airborne contaminants while remaining committed to environmentally responsible treatment practices.

We do not mask odours – we eliminate them at molecular level, restoring the natural purity of the space.

Understanding Ozone and Its Cleaning Power.

Before we proceed, I would like to introduce myself. My name is Lukasz Olenderek, owner of PrimeSphere, and I am delighted to share this guide with you.

This guide is informed by insights gathered from a survey we conducted. The findings showed that awareness of ozone and its cleaning capabilities remains relatively low – even among professionals working in industries where ozone is commonly used.

For this reason, we have brought together key information and data to create a comprehensive guide to ozone and the treatment process – how it works, its applications and benefits, and its environmentally responsible impact.

We hope this guide will help raise awareness of ozone and demonstrate its full potential.

What is ozone?

Ozone (O_3) is a naturally occurring gas made up of three oxygen atoms. It plays an important role in protecting the Earth from harmful UV radiation in the upper atmosphere. At elevated concentrations, ozone can irritate the respiratory system, professional ozone treatments are carried out only in unoccupied environments and in accordance with strict safety procedures.

What is ozone cleaning?

Ozone cleaning is a professional, environmentally responsible process that uses ozone (O_3) gas to sanitise, deodorise and oxidise odour-causing compounds and airborne contaminants at a molecular level. Depending on treatment conditions and exposure time, ozone can help reduce many microorganisms and unpleasant odours without leaving chemical residues.

How is ozone produced?

Our machines generate ozone through a process called corona discharge. This involves passing electrical energy through a chamber containing oxygen, which splits the oxygen molecules (O_2) into individual atoms. These oxygen atoms then combine with oxygen (O_2) molecules to form ozone (O_3).

Many people notice a clean, fresh, slightly metallic scent after thunderstorms, which is partly associated with naturally occurring ozone in the atmosphere.

Is ozone cleaning safe?

Ozone cleaning can be highly effective at sanitising, deodorising and helping to reduce many airborne contaminants and unpleasant odours. However, ozone is not safe for humans, pets or plants during treatment. As a respiratory irritant, elevated concentrations of ozone can cause coughing, chest discomfort and aggravate existing respiratory conditions if appropriate safety procedures are not followed.

For this reason, all treatment areas must be vacated during the process and thoroughly ventilated before re-entry. When carried out by trained professionals using appropriate safety procedures, ozone treatment can be used safely in controlled, unoccupied environments.

Is ozone cleaning effective?

Ozone cleaning can be highly effective at reducing unpleasant odours and improving environmental hygiene. As a powerful oxidising agent, ozone reacts with many odour-causing compounds and certain airborne contaminants, leaving no chemical residue after it naturally decomposes back into oxygen.

Ozone has been studied and applied across a wide range of sectors, including healthcare, hospitality, food processing and transportation, where odour control and environmental hygiene are important. Depending on treatment conditions and exposure time, ozone can help reduce many microorganisms and unpleasant odours in controlled, unoccupied environments.

However, ozone treatment does not replace traditional cleaning and should be considered a complementary treatment. It sanitises and deodorises but does not remove physical dirt, dust or the underlying cause of issues such as damp or water ingress.

Key Differences Between Ozone and Traditional Cleaning

- **Effectiveness & Speed:** Ozone is a powerful oxidising agent that reacts rapidly with many odour-causing compounds and certain airborne contaminants. Rather than masking unpleasant smells with fragrances, it helps neutralise them at a molecular level.
- **Chemical-Free & Safety:** Unlike many traditional cleaning products, ozone naturally decomposes back into oxygen and leaves no chemical residue behind. However, ozone treatment complements rather than replaces conventional cleaning methods.

- **Application & Residue:** While traditional cleaning relies on the physical application of detergents and disinfectants, ozone gas can disperse throughout an enclosed environment and reach areas that may be difficult to clean manually, such as ventilation systems, fabrics and upholstery.
- **Environmentally Friendly:** Ozone treatment generally requires minimal consumable products and water, leaving no chemical residue after treatment and potentially reducing reliance on certain cleaning agents.

It is important to remember that ozone treatment does not replace traditional cleaning, as it does not remove physical dirt, dust, debris or the underlying cause of issues such as damp or water ingress.

Can ozone be used for cleaning air conditioning systems?

Yes, ozone treatment can be used to sanitise and deodorise stationary air conditioning systems. When applied in controlled, unoccupied environments, ozone can help reduce many microorganisms and unpleasant odours associated with evaporator coils and internal components.

Ozone treatment may provide an effective complement to conventional cleaning methods by helping to treat areas that can be difficult to access manually. However, because ozone is a powerful oxidising agent and a respiratory irritant at elevated concentrations, treatments must always be carried out by trained professionals and in accordance with appropriate safety procedures.

Can ozone be used for vehicle air conditioning?

Yes. Similar to stationary air conditioning systems, ozone treatment can be used to sanitise and deodorise vehicle air conditioning systems. By circulating ozone through the ventilation system, it can help reduce odour-causing compounds and many microorganisms that may be present within the air vents, evaporator and cabin. It can also help eliminate food, smoke and damp-related odours.

For best results, ozone treatment should be considered a periodic maintenance treatment rather than a daily air cleaner. The frequency of treatment depends on factors such as vehicle usage, environmental conditions and the presence of persistent odours.

As mentioned previously, ozone treatment does not replace traditional cleaning when it comes to physical dirt or the underlying cause of a problem. For example, ozone

treatment may help eliminate a damp odour, but it will not resolve the issue of water ingress itself.

Similarly, if unpleasant odours are present when using the vehicle's air conditioning system, ozone treatment can help reduce these odours and improve environmental hygiene within the ventilation system. However, it may also be beneficial to inspect or replace the cabin filter and investigate the air intake ducts for dirt and debris, as these factors are often overlooked and may contribute to recurring odour issues.

Benefits of ozone cleaning

In essence, ozone treatment can be highly effective at helping to reduce unpleasant odours and many microorganisms while improving environmental hygiene. It is an environmentally responsible treatment that leaves no chemical residue behind – just a fresher, cleaner environment.

Do I need to clean area before the treatment?

Yes. The treatment area should be vacuumed, bins emptied and any rubbish removed beforehand. This helps maximise the effectiveness of the treatment.

What conditions are required for ozone treatment to be effective?

Several environmental factors can influence the effectiveness of ozone treatment, with temperature and humidity being the two most important. In general, ozone treatment performs best at temperatures between 10°C and 25°C and relative humidity levels between 40% and 60%.

There is no need to worry about these conditions, as we assess the treatment environment beforehand and carry out all necessary checks to ensure conditions are suitable and optimise treatment effectiveness.

How long should the treatment last for?

Treatment duration varies depending on several factors, including the size of the treatment area, the nature and severity of the issue, environmental conditions and the ozone concentration required.

Our professional ozone generators are suitable for treating a wide range of environments, including vehicles, hotel rooms, residential properties and commercial spaces.

Following an initial assessment, we determine the most appropriate treatment approach and duration for each environment to ensure safe and effective treatment.

Can ozone be used as one-off treatment?

Yes, it can. However, the answer depends on the circumstances and the nature of the issue being addressed.

For general environmental hygiene and odour control, periodic ozone treatment may be beneficial, particularly in environments exposed to recurring odours or high levels of use. Depending on treatment conditions and exposure time, ozone treatment can help reduce many microorganisms and unpleasant odours, including food, pet, smoke and damp-related odours.

In situations involving persistent odours or damp smells, more than one treatment may occasionally be required. In both cases, it is important to investigate the underlying cause of the issue. For example, ozone treatment may help eliminate a damp odour, but it will not resolve the issue of water ingress itself.

Similarly, areas affected by fire or flooding often require a more comprehensive treatment approach. In these circumstances, treatment may need to be repeated, and certain environmental conditions may need to be met to maximise effectiveness and help restore the environment following the incident.

Can I enter treatment area during the process?

No. Under no circumstances should anyone enter the treatment area while ozone treatment is in progress.

Ozone is a respiratory irritant and can cause coughing, chest discomfort and aggravate existing respiratory conditions if appropriate safety procedures are not followed. For this reason, warning signage stating **"STOP – HIGH CONCENTRATION OZONE TREATMENT IN PROGRESS – DO NOT ENTER"** will be clearly displayed, and the treatment area must remain unoccupied throughout the process.

Following treatment, the area will be thoroughly ventilated and ozone concentration levels will be checked to ensure safe re-entry.

How long do I have to wait before I am allowed re-entry?

The time required for ventilation and safe re-entry varies depending on factors such as the size of the treatment area, ventilation, environmental conditions and the ozone

concentration achieved during treatment. As a general guide, ventilation may take approximately one and a half times the treatment duration.

Where appropriate, we can support the ventilation process by using high-output floor fans, which may significantly reduce post-treatment waiting times. However, re-entry will only be permitted once ozone concentration levels have been checked and confirmed to be within safe limits.

We hope you find this guide helpful. If you have any further questions, please do not hesitate to get in touch and we will be happy to assist. Additional information about our approach, competence and safety procedures can be found in the **Ozone & Safety** section of our website.

You can contact us via phone, email or website enquiry form. Alternatively, please scan the QR code below and you will be taken directly to our website.

T: +44 (0) 1392 793 868

M: +44 (0) 7777 154 120

E: info@primesphere.co.uk

W: primesphere.co.uk