OZONATOR



TECHNICAL PASSPORT

Manufacture: Date of Manufacture: Product type: Product No. JSC "Ozono centras" 2023 m. OZ-NR-5-90 000

Manufacturer: Adresas:	SC "Ramtech" company code 306234625 Maciuičiai, LT-96159 Klaipėdos raj.
Product:	OZONATOR; NEW AND UNUSED PRODUCT, MADE OF NEW AND UNUSSED MATERIALS
Product use:	AIR OZONATION
	Warranty period 12 months from the date of sale
Product parameters:	weight: not more than 2 kg; dimensions: $290x153x110$ mm; Flow rate: $90m^{3}/h$: $O_{3}-5g/h$: electric power: $60W$: electric source:
230V.	The fuel source.

Service and warranty terms

The guarantee is effective from the date of invoice and is not covered unless the following conditions are met:

- \checkmark In the event of a defective seal;
- ✓ Working at ambient temeratures below -10 °C, and greater than +40 °C;
- \checkmark The device operates in a room with humidity higher than 85%;
- ✓ The device is not maintained, not cleaned, no technical maintenance performed
- ✓ Changes made without permission;
- \checkmark There are mechanical damage to the hull;
- \checkmark The device was connected to the non-grounded plug;
- ✓ If the air intake or exhaust outlet of the unit is covered (or blocked) or is located less than 50cm from a wall, barrier or other objects that obstruct the free intake or exhaust of the unit.



- The ozonator is provided after selecting the use, and meets the requirements of modern standards and general safety regulations for maximum occupational safety and accident prevention.
- Always check the reliability of the protective grounding before starting the unit (the outlet is grounded, not broken or interrupted)
- Connect the ozonator only with supplied electric cable and only to a grounded electrical outlet!
- Before the use of ozonator, check the electrical cable for mechanical damage and visible hull damage.
- Before switching on the ozonator, make sure that neither the air inlet nor the outlet is covered (or blocked). The unit is placed at least 50cm from the wall and raised at least 20cm from the ground.
- We recommend that you turn on the ozonator to see if the plasma is blue and if it has a strong odor of ozone. There should be no extraneous noise or sparks.
- The ozonator is operated indoors only when there are no people inside. Entry is prohibited when the ozonator is in use. The room must be locked, marked with danger. Entry is only possible when the ozonator is off for at least 30 minutes and the rooms are ventilated.
- When transferring an ozonator from a cold to a warm room, the ventilation mode must be switched on for 10 to 15 minutes to allow the condensate to dray on the plate.
- The ducts and surface must be free of dust and fine particles to prevent ignition.
- Ozonated rooms must be free of conductive dust and corrosive gases which will destroy the insulation of the conductors.
- Turned on ozonator should not be left unattended for a long time.
- In the event of a fire or an emergency, the ozonator must be switched off immediately.
- The amount of electromagnetic radiation complies with the requirements of Lithuanian Hygiene Norm HN 110: 2001.
- Noise complies with HN 33: 2007 Noise at work, residential, public buildings and residential areas. "

If the ozonator is malfunctioning or malfunctioning, contact the equipment vendor KG Knutsson SIA, kgk@kgk.lv

Transportation and storage:

During transportation, protect against impact, i.e. pack the ozonator so it is not struck or otherwise damaged. Always check cable, housing, electrodes and other damage after transportation. Store the ozonator in a room with the relative humidity below 60%.

Ozonator settings, Switch-ON and Switch-OFF:

- 1. Plug in the Power plug.
- 2. Press the main switch, the blue indicator light will turn on and the number will appear in the timer. The top row is red, the bottom row is blue. There should be zeros (0) on both rows



- 3. Briefly press the SET button until the upper red digit starts to flash. Set the desired operating time (in minutes) by pressing the UP arrow or DOWN arrow button. Time interval is 0~999 minutes. Leave indoors after operating hours are set, and the ozonator will start automatically.
- 4. The ozonator will stop working automatically at the end of the setu up run. When the main switch of the ozonator is switched off or the plug is unplugged and then turned on again, the ozonator will start working from the preset time, to avoid this, press the SET button shortly before turning off until the upper red digit starts flashing and set the ZERO (0) with the UP arrow or DOWN arrow. Wait 3 seconds to save the settings.
- 5. A long press SET button enters the parameter settings mode. There are two parameter groups P0 and P1. In the parameter setting mode, pressing SET shortly switches the parameter groups from P0 to P1 and vice versa. Pressing the UP or DOWN buttons in each group sets the operating mode on the bottom display (blue numbers). The default operating mode of th parameter group is P0 number 1 (lower display, blue numbers), P1 number 1 (lower display, blue numbers).
- 6. Operating mode set to P0=1; P1=1, wait 6 seconds for the settings to be saved and to exit the parameter setting mode automatically.



OZONATOR (03) GENERAL INFORMATION

Product / material

Ozone

Flammability

Not Self- flammable/ maintains combustion

Appearance and smell

Ozone is colorless at all concentrations. It has apungent characteristic odor usually associated with electrical sparks. The odor that a human can smell is in the range of 0,05 ppm.

Fire/ explosion and danger infrormation.

Ozone is a very strong oxidizing agent. Oxidation (combustion) with ozone generates more heat and usually ignites at a lower temperature compared to oxygen. Ozone reacts with unsaturated organic compounds to form ozonides, which are unstable and can decompose, causing an explosion. Ozone is an unstable gas and decomposes to molecular (bi-atom) oxygen at normal temperatures. At high temperatures and in the presence of certain catalysts such as hydrogen, iron, copper and chromium, an explosion can occur during this decomposition and reaction.

Flash point N/A (not applicable)

Auto- ignition temperatures

N/A (not applicable)

Reaction conditions and affecting medium for ozone stability

Ozone is self- depleting except in cases where the ozonator produces ozone continuously. Degradation is accelerated by contact with hard surfaces and exposure to chemicals and increasing temperatures.

Inconsistency

Ozone is a very strong oxidizing agent and reacts with all oxidizing agents, both organic and inorganic. Some reaction products are highly explosive.

Hazardous decomposition products

N/A (not applicable)

HEALTH HAZARD

Exposure limit values

An acceptable range for these limits (JAV, Sweden, United Kingdom and other European countries):

- 8 hours per day / 5 days per week (occupational exposure limit value) 0,1 ppm
- 15 min (short- term exposure limit) 0,3 ppm

Ozone toxicity

The acute and chronic effects of ozone have been well studied. Dependence on ozone concentrations above 0.1 ppm can cause discomfort to some people, headache, dry throat and mucous membranes, and itchy eyes and nose. These symptoms are transient. Repeated exposure to ozone at the same concentrations every 24 hours did not cause further irritation of the respiratory tract or mucous membranes of the throat, eyes and nose, and in contrast decreased slightly indicating that ozone tolerance may develop over time. Harmful concentrations have been proven to be above 2.0 ppm and up to several hours. Mainly due to strong lung effects. This acute effect disappeared when the concentrations greater than 10 to 20ppm and time of 1h or less can be fatal to humans, although no deaths have ever been attributed to ozone deaths over 100 years of commercial use of ozonators. (Compared to the Chlorine gas, which claimed many casualties, both in war and in peace). The effects of long-term or chronic ozone at low concentrations are comparable to those of ultraviolet rays, but over-exposure can burn not only the skin but also the lungs. Ozone is not generally considered or suspected to be carcinogenic to people, especially it has no mutagenic properties.

In case of ozone leakage:

- 1. Ventilate the room
- 2. Turn off the ozonator immidiately
- 3. If there is a high concentration (above 0.1 ppm) all workers should leave the premises and the affected area should be ventilated
- 4. When ozone concentration is above 0.3 ppm and workers are required to work in narrow spaces or in tanks, they must do so only with appropriate breathing device

Contact with eyes

In case of eye contact, rinse immediately with plenty of water and flush eyelids. Get medical attention as soon as possible.

Breathing - If a person is intoxicated with high concentration of ozone, move the person to a warm room with uncontaminated air. If breathing has stopped, artificial respiration may be performed by properly trained personnel. Seek medical attention as soon as possible. When breathing is difficult, an oxygen mask may help.

Always follow work safety regulations.