MATERIAL SAFETY DATA SHEET
FOR OZONE GAS
Ozilla™ Ozone Sterilizer

SECTION 1. CHEMICAL IDENTIFICATION

PRODUCT NUMBERS: E400110, E400220

NAMES: Ozilla Ozone Sterilizer, 110 volts.
Ozilla Ozone Sterilizer, 220 volts.

COMMON SYNONYMS: Triatomic Oxygen, Trioxygen, O₃

CHEMICAL FAMILY: Ozone gas.

PHYSICAL FORM: Gaseous oxidant.

PRODUCT USE: For controlled laboratory sterilization and/or deodorization; NOT FOR USE IN UNCONTROLLED AREAS WHEN HUMAN OR ANIMAL ARE PRESENT; AVOID EXPOSURE TO HIGH LEVELS OF OZONE GAS WHEN PRODUCED BY DEVICE DURING STERILIZATION CYCLE.

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS NO.</th>
<th>CAS#</th>
<th>Chemical Name</th>
<th>Molecular Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>10028-15-6</td>
<td>03</td>
<td>O₃</td>
<td>48.0</td>
</tr>
</tbody>
</table>

COMPOSITION: Tri-atomic oxygen molecules.

PHYSICAL CHEMICAL PROPERTIES

Boiling point: -170°F (-112°C)
Vapor pressure (mmHg & temp): > 1 atm
Vapor density (air = 1): 1.65
Solubility in water [0.0003 g/100 ml @ 68°F (20°C)]: Almost insoluble
Specific gravity: 1.614
Melting point: -313°F (-192°C)
Evaporation rate (H₂O= 1): Not Applicable
Water reactive: Not Applicable
pH: Not Applicable
Appearance and Odor: Colorless gas, pungent or sharp odor detectable at 0.01 to 0.05 PPM.

SECTION 3. HAZARDS IDENTIFICATION

LABEL PRECAUTIONARY STATEMENTS

CAUTION: At high concentrations and/or at extended time exposures (see below) ozone causes dryness of the mouth, coughing, and irritation of mucous membranes such as nose, throat, and chest. It may cause disorientation, shallow breathing, headaches, and a general sense of fatigue. Ozone aggravates pre-existing respiratory conditions and may increase sensitivity to bronchoconstrictors and allergens

Recommended maximum exposure limits:
OSHA: 8 hour Time Weighted Average (TWA) 0.1 ppm;
ANSI/ASTM and ACGIH: 8 hour TWA 0.1 ppm; Short Term Exposure Limit (STE) 0.3 ppm.
Skin: absorption through intact skin is not expected.
Ingestion: not a route of exposure.
## MATERIAL SAFETY DATA SHEET
### FOR OZONE GAS
Ozilla™ Ozone Sterilizer

### NFPA CODES

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>3, Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE</td>
<td>2, Warning</td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>2, Warning</td>
</tr>
<tr>
<td>SPECIAL</td>
<td>Heavy Oxidizer</td>
</tr>
</tbody>
</table>

### LABORATORY PROTECTIVE EQUIPMENT

When Ozilla Ozone Sterilizer is used properly and as intended, no protective equipment is needed. If ozone gas is allowed to escape to surrounding air, no protective equipment needed if ozone levels remain low (below 0.05 ppm); at higher levels (above 0.3), use laboratory coat, gloves, sealed face mask and self-contained breathing apparatus.

### SECTION 4. FIRST AID MEASURES

**FIRST AID MEASURES**

**Acute:** May cause irritation of skin, eyes, and mucous membranes of the respiratory tract. Drowsiness, dizziness, headache, and fatigue have been associated with exposure.

**Chronic:** Long term health effects are not established from exposures to ozone. A partial tolerance appears to develop with repeated exposures.

**If inhaled:** Remove to fresh air. If breathing is difficult a trained person should administer oxygen. If respiration stops, give mouth-to-mouth resuscitation, and get professional medical attention immediately.

**In case of skin contact:** Wash off with soap and plenty of water.

**In case of eye contact:** Remove contacts (if present) or glasses and flush eyes with plenty of water for at least 15 minutes while forcibly holding eyelids open to ensure full eye surface washing. If irritation or pain or other symptoms persist, seek immediate professional medical assistance.

**If swallowed:** Not an expected route of exposure.

### SECTION 5. FIRE FIGHTING MEASURES

**FLASH POINT (CLOSED CUP):** None identified.

**AUTOIGNITION TEMPERATURE:** None identified.

**FLAMMABLE LIMITS:**

<table>
<thead>
<tr>
<th>UPPER</th>
<th>None identified.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOWER</td>
<td>None identified.</td>
</tr>
</tbody>
</table>

**EXTINGUISHING MEDIA**

Ozone itself is not flammable but it is a strong oxidant and may accelerate or even initiate combustion or explosion. Use extinguishing media suitable for surrounding fires.

**SPECIAL FIRE FIGHTING PROCEDURES**

Wear self-contained breathing apparatus and protective clothing to prevent contact with eyes and skin.

**UNUSUAL FIRE & EXPLOSION HAZARDS**

None identified.

**EXPLOSION DATA**

None identified.
MATERIAL SAFETY DATA SHEET
FOR OZONE GAS
Ozilla™ Ozone Sterilizer

SECTION 6. ACCIDENTAL RELEASE MEASURES
ACCIDENTAL RELEASE MEASURES
Evacuate area with ozone levels that accumulate to 0.3ppm or higher. Open doors and windows to allow area to ventilate, and until ozone gas smell is no longer detectable.

SECTION 7. HANDLING AND STORAGE
HANDLING AND STORAGE
Ozone must be contained within controlled areas, such as sealed rooms, sealed cabinets or containers. During Ozilla Ozone Sterilizer operations, users MUST mark areas that are being sterilized with notifications that are clear and legible from a distance to keep others safe, keep ozone gas contained within intended spaces, and achieve effective sterilization.
Once ozone sterilization cycles have completed, the Ozilla Ozone Sterilizer must be allowed to run a full de-ozonation cycle (called “Scrub Cycle”) as specified in the product’s manual.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
EXPOSURE CONTROLS/PERSONAL PROTECTION
Personal protective equipment: Lab coat.
Respiratory protection: Use full face self-contained breathing apparatus for entering areas with high concentration of ozone.
Hand protection: For prolonged or repeated contact use protective gloves.
Eye protection: Use sealed goggles or a full face mask to protect eyes from prolonged and/or high levels of Ozone.

SECTION 9. STABILITY AND REACTIVITY
STABILITY: Ozone is highly unstable and highly reactive. Avoid contact with oxidizable substances, including alkenes, benzene and other aromatic compounds, rubber, dicyanogen, bromine diethyl ether, ditrogen tetroxide, nitrogen trichloride, hydrogen bromide, and tetraluorohydrazine. Ozone will readily react and spontaneously decompose under normal ambient temperatures.

SECTION 10. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>THRESHOLD LIMIT VALUE (TLV/TWA):</th>
<th>8 hour Time Weighted Average (TWA) 0.1 ppm.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHORT TERM EXPOSURE LIMIT (STEL):</td>
<td>0.3 ppm.</td>
</tr>
<tr>
<td>PERMISSIBLE EXPOSURE LIMIT (PEL):</td>
<td>0.05 ppm.</td>
</tr>
<tr>
<td>TOXICITY OF COMPONENTS:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>CARCINOGENICITY:</td>
<td>NTP: NO  Z LIST: NO</td>
</tr>
<tr>
<td>IARC: NO</td>
<td></td>
</tr>
<tr>
<td>OSHA REG: NO</td>
<td></td>
</tr>
<tr>
<td>CARCINOGENICITY:</td>
<td>None identified.</td>
</tr>
</tbody>
</table>
**MATERIAL SAFETY DATA SHEET**
**FOR OZONE GAS**
Ozilla™ Ozone Sterilizer

<table>
<thead>
<tr>
<th>REPRODUCTIVE EFFECTS:</th>
<th>Not determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFFECTS OF OVER EXPOSURE:</td>
<td>Exposure to sustained and high levels or ozone gas can be highly irritating to the upper and lower respiratory tract. The characteristic odor is readily detectable at low concentrations (0.02 ppm to 0.05 ppm). Ozone produces local irritation of the eyes and mucous membranes and may cause pulmonary edema at high exposure. A partial tolerance appears to develop with repeated exposures.</td>
</tr>
<tr>
<td>CHRONIC EFFECTS:</td>
<td></td>
</tr>
<tr>
<td>TARGET ORGANS:</td>
<td>Eyes, skin, mucous membranes, lungs.</td>
</tr>
<tr>
<td>MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:</td>
<td>Inhalation: May be harmful if inhaled. May cause respiratory tract irritation. Skin: May be harmful if absorbed through skin. May cause skin irritation. Eyes: May cause eye irritation.</td>
</tr>
<tr>
<td>PRIMARY ROUTES OF ENTRY:</td>
<td>Ingestion, eye contact, skin contact.</td>
</tr>
<tr>
<td>EXTREMELY HAZARDOUS SUBSTANCE:</td>
<td>No.</td>
</tr>
</tbody>
</table>

**SECTION 11. ECOLOGICAL INFORMATION**
Ozone gas is a powerful oxidant, and should always be released or used in controlled areas so the gas is not allowed to escape into the atmosphere or surrounding areas before conversion to oxygen by the Ozilla Ozone Sterilizer. Ozone will adversely affect animal and plant life. Discharge of ozone in water solution would also be harmful to aquatic life. In general, because ozone gas decomposes naturally, bioaccumulation is not likely, and harmful side effects to the environment should be limited.

**SECTION 12. DISPOSAL CONSIDERATIONS**
Ozone rapidly decomposes to form oxygen ($O_2$). Small to moderate amounts of excess ozone can be vented to a fume hood or other exhaust system. Larger amounts of ozone gas should be recycled through the Ozilla Ozone Sterilizer Scrub Cycle for conversion to $O_2$. 

**SECTION 13. TRANSPORT INFORMATION**
NOT APPLICABLE. Ozone is unstable and either reacts with other substances in the environment or decomposes, and therefore must be generated at the location and time of use.

**SECTION 14. REGULATORY INFORMATION**
SARA TITLE III: N/A
TSCA: the ingredients of this product are on the TSCA Inventory List.
OSHA: nonhazardous according to definitions of health hazard and physical
# MATERIAL SAFETY DATA SHEET

## FOR OZONE GAS

**Ozilla™ Ozone Sterilizer**

---

### SECTION 15. OTHER INFORMATION

<table>
<thead>
<tr>
<th>LABEL WARNINGS</th>
<th>DISCLAIMER</th>
</tr>
</thead>
</table>
| • Highly reactive ozone gas affects the respiratory system.  
  • Keep away from heat, sparks and flame. Avoid contact with eyes and skin. Avoid breathing. Always allow Ozilla unit to run full sterilization and scrub (de-ozonation) cycles.  
  • If ozone inhaled, remove to fresh air. Get medical attention for any breathing difficulties. | THE INFORMATION ABOVE IS BELIEVED TO BE ACCURATE AND REPRESENTS THE BEST INFORMATION CURRENTLY AVAILABLE TO US. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PERSON TRAINED IN OR SUPERVISED BY A PERSON TRAINED IN SAFE LABORATORY PRACTICES. THE USER IS RESPONSIBLE FOR USING THE OZILLA OZONE STERILIZER PROPERLY AND AS INTENDED, AND IN DETERMINING THE PRECAUTIONS AND DANGERS OF OZONE GAS EXPOSURE FOR HIS OR HER PARTICULAR APPLICATION. DEPENDING ON USAGE, PROTECTIVE CLOTHING INCLUDES EYE AND FACE GUARDS AND RESPIRATORS MUST BE USED TO AVOID CONTACT WITH MATERIAL OR BREATHING OZONE GAS. EXPOSURE TO OZONE GAS PRODUCED BY THE OZILLA DEVICE MAY HAVE SERIOUS ADVERSE HEALTH EFFECTS. OZONE GAS MAY INTERACT WITH OTHER SUBSTANCES. GENLANTIS, A DIVISION OF GENE THERAPY SYSTEMS, INC. CANNOT WARN OF ALL OF THE POTENTIAL DANGERS OF USE OR INTERACTION WITH OTHER CHEMICALS OR MATERIALS, AND USERS HAVE THE RESPONSIBILITY TO READ AND UNDERSTAND THE WAY THE OZILLA OZONE STERILIZER DEVICE WORKS, AND TO READ AND UNDERSTAND THE INFORMATION IN THIS DOCUMENT. GENLANTIS DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, GENLANTIS WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET. COPYRIGHT 2013 GENE THERAPY SYSTEMS, INC. DBA GENLANTIS. |