HARNESSING NATURE'S TECHNOLOGY

SAFETY DATA SHEET FOR OZONE

OZONE IN AIR

Identification of the substance / preparation and company

Product Name: Ozone
Chemical Formula: O_3

Oxidizing agent for drinking water and air treatment, wastewater treatment, chemical industry and pulp and paper industry. Ozone is generated on or near the site of use.

Company Identification:

Biozone Manufacturing (PTY) Ltd.
Watercare Solutions Building
Unit 177 Olympic Duel Avenue
Northlands Business Park
New Market Road
Northriding
2162

+27 11 791 4403
sales@biozone.co.za
www.biozone.co.za

COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CONCENTRATION	RISK PHRASES	CAS NO
Ozone	4%wt max.	Toxic Gas	10028 -15-6
Air	Remainder	-	-

HAZARDS IDENTIFICATION

Irritating to eyes and respiratory tract.

FIRST AID MEASURES

Inhalation:

Remove victim to fresh air; if breathing is difficult a trained person should administer oxygen. If respiration stops, give mouth-to-mouth resuscitation. Get medical attention.

Ingestion:

Not an expected route of exposure.

Skin Contact:

Wash skin thoroughly with soap and water.

Eye Contact:

Immediately flush eyes with large amounts of water for at least 15 minutes while forcibly holding eyelids apart to ensure flushing of the entire eye surface. If irritation, pain, or other symptoms persist, seek medical attention.

FIRE – FIGHTING METHODS

Suitable extinguishing media

- Use extinguishing media suitable for the type of fire being dealt with.

Extinguishing media which must not be used for safety reasons

- Not known

Special exposure hazards arising from the use of substances or the process where the substance is being used, reparation itself, combustion products, resulting gases

- The substance decomposes on heated to produce oxygen which increases fire hazard.
- The substance is a strong oxidant and reacts violently with certain materials.

Special protective equipment for fire-fighters

- None

ACCIDENTAL RELEASE MEASURES

Personal Precautions:

- Evacuate area
- Wear respiratory protection

Environmental Precautions:

- None allow decaying naturally to oxygen.

HANDLING AND STORAGE

Handling:

- Ensure generating equipment is correctly set up.
- Keep away from materials, which degrade or oxidise in the presence of Ozone.

Storage:

- Cannot be stored, as it will revert back to Oxygen in a few hours.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value:

- 0.2ppm(v/v) 15 minutes TWA
- Ensure adequate ventilation.
- Wear respiratory protection if continually exposed to levels above 0.3ppm

PHYSICAL AND CHEMICAL PROPERTIES

Composition	Ozone in oxygen or air
Physical state	gaseous
Molecular Weight:	48
Melting Point:	-196°C
Boiling Point:	-110°C
Density gas (NTP):	2.144g/litre
Solubility in water:	0.24mg/l water/(mg/dm ^{3}) gas @20°C and 1atm.
Odour:	Bleach' smell at concentrations above 0.03ppm (v/v) pungent
Other Data:	Gas is heavier than air
Oxidising properties	strong oxidant
Colour	colourless (in high concentration bluish)
Flash point	not applicable
Flammability	not applicable
Explosive properties	> 25% vol. (gaseous)

STABILITY AND REACTIVITY

- Thermal decomposition occurs rapidly above 200°C, (in a few hours at room temperature). The half-life time in the gas phase at room temperature is 30 minutes to 2 hours.
- When dissolved in pure water the half-life time is between 10 minutes and 30 minutes.
- Avoid certain textiles, fabrics, organic dyes, plastics, rubbers and plants.

TOXICOLOGICAL INFORMATION

- Ozone is extremely irritating to the respiratory tract. The characteristic odour is readily detectable at low concentrations (0.01 ppm to 0.05 ppm). Ozone produces local irritation of the eyes and mucous membranes and may cause pulmonary oedema at high exposure. Systematically, ozone has been reported to mimic the effects of ionizing radiation, and may cause damage to chromosomal structures. A partial tolerance appears to develop with repeated exposures. Although most effects are acute, the possibility of chronic lung impairment should be considered.

ECOLOGICAL INFORMATION

- When discharged in large quantities may contribute to industrial air pollution.
- LC50 / rat = 4.8 ppm / 4 hours

DISPOSAL CONSIDERATIONS

- Discharge to atmosphere in a well-ventilated place

REGULATORY INFORMATION

- Guidance Note EH38 ‘Ozone:
  Health Hazards And Precautionary Methods
- Labelling Phrases:
- Irritant (label at the Generator Outlet).Use only in well ventilated areas.

OTHER INFORMATION

- Ozone is unstable and cannot be stored
- Ozone is made at or close to the point of use.
- It is used as a deodoriser, fungicide, bactericide, and algaecide.
- It is frequently made as a side effect in machinery, for example photocopiers.

SECTION REVISION AND DATES N/A

Notes: NTP Normal temperature and pressure 0oC and 1 atm.
TWA Time Weighted Average

OTHER INFORMATION

Ensure all national/local regulations are observed. Ensure the operators understand the hazard of ozone

- No entry for unauthorized persons
- Fire, open flames and smoking prohibited
- Very toxic
- Oxidising