



SAFETY DATA SHEET FOR OZONE (O₃)



1. PRODUCT IDENTIFICATION	
Product Name: Ozone	
Common Names/Synonyms: Triatomic Oxygen, Trioxigen, O ₃	
Ozone Generator Manufacturer/Supplier: ClearWater Tech, Inc. website: www.cwtozone.com 850 Capitolio Way San Luis Obispo, CA 93401	
Emergency Contact: (805) 546-2323	
Product Use: Oxidation of organic compounds, odor abatement, or sanitation of surfaces utilizing an on-site ozone generator to produce gaseous ozone.	

2. HAZARD IDENTIFICATION		
GHS Classification:		
Physical	Health	Environmental
Oxidizing Gas	Skin Irritation – Category 3 Eye Irritation – Category 2B Respiratory System Toxicity – Category 1 (Single and Repeated)	Acute Aquatic Toxicity – Category 1
NOTE: Severe respiratory toxicity will develop before skin or eye irritation go beyond listed categories. Anyone with chronic pulmonary problems, especially asthma, should avoid exposure to ozone.		
WHMIS Classifications (Workplace Hazardous Materials Information System, Canada): C, D1A, D2A, D2B, F Source: CCOHS CHEMINFO Record Number 774		

3. COMPOSITION	
Chemical Name	Ozone
Common Names	Triatomic Oxygen, Trioxigen
Chemical Formula	O ₃
CAS Registry Number	10028-15-6

4. FIRST AID MEASURES			
Route of Entry		Symptoms	First Aid
Skin Contact	YES	Irritation	Rinse with water
Skin Absorption	NO	N/A	N/A
Eye Contact	YES	Irritation	Rinse with water, remove contacts
Ingestion	NO	N/A	N/A
Inhalation	YES	Headache, cough, heavy chest, shortness of breath	Remove to fresh air, provide oxygen therapy as needed
For severe cases, or if symptoms don't improve, seek medical help.			

5. FIRE FIGHTING MEASURES
Ozone itself is not flammable. As a strong oxidant it may accelerate, even initiate, combustion, or cause explosions. Use whatever extinguishing agents are indicated for the burning materials.

6. ACCIDENTAL RELEASE MEASURES
Turn off the ozone generator and ventilate the area. Evacuate until ozone levels subside to a safe level (<0.1 ppm).

7. HANDLING AND STORAGE
Ozone must be contained within ozone-resistant tubing and pipes from the generation point to the application point.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
OSHA Permissible Exposure Limit: 8 hour TWA 0.1 ppm
ANSI/ASTM: 8 hour TWA 0.1 ppm , STEL 0.3 ppm
ACGIH: 8 hour TWA 0.1 ppm ; STEL 0.3 ppm
NIOSH: ELCV 0.1 ppm light; 0.08 ppm moderate; 0.05 ppm , heavy Light, moderate, heavy work TWA <= 2 hours: 0.2 ppm Immediately Dangerous to Life or Health (IDLH) 5 ppm
Respiratory Protection: Use full face self-contained breathing apparatus for entering areas with a high concentration of ozone.
Engineering control: Use ozone destruct unit for off gassing of ozone.

9. PHYSICAL AND CHEMICAL PROPERTIES			
Physical State	Gas	pH	N/A
Molecular Weight	48.0	Decomposition Temperature	N/A
Appearance	Clear at low concentrations, blue at higher concentrations	Evaporation Rate	N/A
Odor	Distinct pungent odor	Flash Point	N/A
Odor Threshold	0.02 to 0.05 ppm; exposure desensitizes	Auto-ignition Temperature	N/A
Melting Point	-193°C/-315°F	Relative Density	N/A
Boiling Point	-112°C/-169°F	Partition Coefficient	N/A
Vapor Pressure	> 1 atm	Flammability	N/A
Vapor Density	1.6 (air = 1)	Explosive Limits	N/A
Solubility in Water	570 mg/L @ 20°C and 100% O ₃ ; 0.64@ 0°C	Viscosity	N/A

10. STABILITY AND REACTIVITY
Ozone is highly unstable and highly reactive. Avoid contact with oxidizable substances. Ozone will readily react and spontaneously decompose under normal ambient temperatures.

11. TOXICOLOGICAL INFORMATION	
Likely routes of exposure: inhalation, eyes, skin exposure.	
Effects of Acute Exposure: Discomfort, including headache, coughing, dry throat, shortness of breath, pulmonary edema; higher levels of exposure intensify symptoms. Possible irritation of skin and/or eyes	
Effects of Chronic Exposure: Similar to acute exposure effects, with possible development of chronic breathing disorders, including asthma.	
LC ₅₀ : mice, 12.6 ppm for 3 hours; hamsters, 35.5 ppm for 3 hours	
Irritancy of Ozone	YES
Sensitization to Ozone	NP
Carcinogenicity (NTP, IARC, OSHA)	NO
Reproductive Toxicity, Teratogenicity, Mutagenicity	Not Proven
Toxicologically Synergistic Products	Increased susceptibility to allergens, pathogens, irritants

12. ECOLOGICAL INFORMATION
The immediate surrounding area may be adversely affected by an ozone release, particularly plant life. Discharge of ozone in water solution may be harmful to aquatic life. Due to natural decomposition, bioaccumulation will not occur, and the area affected will be limited.

13. DISPOSAL CONSIDERATIONS
Off-gassing of ozone should be through an ozone destruct unit which breaks ozone down to oxygen before release into the atmosphere.

14. TRANSPORT INFORMATION
NOT APPLICABLE, as ozone is unstable and either reacts or decomposes, and must be generated at the location and time of use.

15. REGULATORY INFORMATION
SARA Title III Section 302 EHS TPQ: 100 lbs
SARA Title III Section 304, EHS RQ: 100 lbs
SARA Title III Section 313: > 10,000 lbs. used/year
Source: EPA List of Lists

16. OTHER INFORMATION
Half-life of ozone in water at 20oC = 20 min; in dry still air at 24oC = 25 hr; decreases significantly with increase in humidity, presence of contaminants, air movement, and/or increase in temperature.
Preparer: ClearWater Tech, LLC.
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