

OZONE SAFETY DATA SHEET [formerly MSDS]

1. PRODUCT IDENTIFICATION			
Product Name: OZONE			
Common Names/Synonyms: Triatomic Oxygen, Trioxygen			
Ozone Generator Manufacturer/Supplier			
O3Canada www.o3canada.com			
3505-42A Avenue. NW O3Canada@gmail.com			
Edmonton, Alberta T6L 4C6			
1-888-323-2847			
Product Use: Ozone is naturally formed in the environment from the interaction of UV light and lightning with atmospheric oxygen. Commercially produced by passing air or oxygen through high voltage. It is also created as a by-product of human activities such as welding, copy equipment, high voltage equipment, and UV radiation.			
As a gas, ozone is a powerful oxidizing agent and highly reactive. Ozone uses include air and water disinfection, microbial control (fungi, yeast, bacteria, etc.), bleaching, and as an oxidizing agent in manufacturing and waste disposal processes.			
Exposure to ozone gas can produce respiratory complications from minor irritation to pulmonary edema; eye irritation; and affect the blood and nervous system.			
Manufacturer/Supplier: O3Canada			
2. HAZARD IDENTIFICATION			
GHS Classifications:			
Physical:		Health:	
Environmental:			
Oxidizing Gas	Skin Irritation – Category 3 Eye Irritation – Category 2B Respiratory System Toxicity – Category 1 (Single & Repeated)	Acute Aquatic Toxicity – Category I	
NOTE: Severe respiratory toxicity will develop before skin or eye irritation go behind listed categories. Anyone with chronic pulmonary problems, especially asthma, should avoid exposure to ozone.			
WHMIS Classifications: C, D1A, D2A, D2B, F			
Source: CCOHS CHEMINFO Record Number 774			
3. COMPOSITION			
Chemical name	Ozone		
Common names	Triatomic oxygen, trioxygen		
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	NA	NA
Eye Contact	YES	Irritation	Rinse with water, remove contacts
Ingestion	NO	NA	NA
Inhalation	YES	Headache, cough, heavy chest, shortness of breath	Remove to fresh air, provide oxygen therapy as needed
<i>For severe cases, or if symptoms don't improve, seek medical help.</i>			
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 ozone generator, and ventilate the area. Evacuate until ozone levels subside to save 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. 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.			
9. DISPOSAL CONSIDERATIONS			
Off-gassing of ozone should be through an ozone destruct unit which breaks down to oxygen before release into the atmosphere.			
10. EXPOSURE CONTROLS/PERSONAL PROTECTION			

OSHA Permissible Exposure Limit: 8 hour TWA 0.1 ppm			
ANSI/ASTIM: 8 hour TWA 0.1 ppm , STEL 0.3 ppm			
AGCIH: 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) 10 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.			
11. PHYSICAL AND CHEMICAL PROPERTIES			
Physical state	Gas	pH	NA
Molecular Weight	48.0	Decomposition temperature	NA
Appearance	Clear at low concentration, blue at higher concentration	Evaporation rate	NA
Odour	Distinct pungent odour	Flash point	NA
Odour threshold	0.02 to 0.05 ppm; exposure desensitizes	Auto-ignition temperature	NA
Melting point	-193°C /-315°C F	Relative density	NA
Boiling point	-112°C /-169°C F	Partition coefficient	NA
Vapour density	1.6 (air=1)	Explosive limits	NA
Solubility in water	570 mg/L @20°C C & 100% O ₃ ; 0.6@0°C C	Viscosity	NA
12. 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	NO		
Carcinogenicity (NTP, IARC, OSHA)	NO		
Reproductive Toxicity, Teratogenicity, Mutagenicity	Not Proven		
Toxicologically Synergistic Products	Increased susceptibility to allergens, pathogens, irritants		
13. 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.			
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 20°C C = 20 min; in dry still air at 24°C C = 25 hr; decreases significantly with increase in humidity, presence of contaminants, air movement, and/or increase in temperature.			
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