

# International Chemical Safety Cards

## OZONE

**ICSC: 0068**

 $O_3$ 

Molecular mass: 48.0

(cylinder)

ICSC # 0068

CAS # 10028-15-6

 RTECS # [RS8225000](#)

April 26, 1993 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
<b>FIRE</b>	Not combustible but enhances combustion of other substances. Many reactions may cause fire or explosion.	NO open flames, NO sparks, and NO smoking. NO contact with combustibles.	In case of fire in the surroundings: use appropriate extinguishing media.
<b>EXPLOSION</b>	Risk of fire and explosion when heated or on contact with combustible substances (alkene, ethers).	Closed system, ventilation, explosion-proof electrical equipment and lighting.	In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position.
<b>EXPOSURE</b>		<b>STRICT HYGIENE!</b>	
<b>•INHALATION</b>	Cough. Headache. Shortness of breath. Sore throat.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
<b>•SKIN</b>	ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.

<b>•EYES</b>	Redness. Pain. Loss of vision.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
<b>•INGESTION</b>			

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Ventilation. If in liquid state: NEVER direct water jet on liquid. Personal protection: self-contained breathing apparatus.	Fireproof if in building. Separated from all substances. Cool. Ozone is frequently stored refrigerated in halons.	R: S:

**SEE IMPORTANT INFORMATION ON BACK**

<b>ICSC: 0068</b>	Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.
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I M P O R T A N T	<p><b>PHYSICAL STATE; APPEARANCE:</b> COLOURLESS OR BLUISH GAS , WITH CHARACTERISTIC ODOUR.</p> <p><b>PHYSICAL DANGERS:</b> The gas is heavier than air.</p> <p><b>CHEMICAL DANGERS:</b> The substance decomposes on warming producing oxygen , which increases fire hazard. The substance is a strong oxidant and reacts violently with combustible and reducing materials. Reacts with alkenes, aromatics such as aniline, and ethers, bromine, nitrogen compounds and rubber producing shock-sensitive compounds. Attacks metals except gold and platinum.</p> <p><b>OCCUPATIONAL EXPOSURE LIMITS:</b></p>	<p><b>ROUTES OF EXPOSURE:</b> The substance can be absorbed into the body by inhalation.</p> <p><b>INHALATION RISK:</b> A harmful concentration of this gas in the air will be reached very quickly on loss of containment.</p> <p><b>EFFECTS OF SHORT-TERM EXPOSURE:</b> The substance is irritating to the eyes and the respiratory tract . Inhalation of the gas may cause lung oedema (see Notes). Inhalation of the gas may cause asthma-like reactions. The liquid may cause frostbite. The substance may cause effects on the central nervous system , resulting in headache and impaired vigilance and performance.</p>
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<b>T D A T A</b>	<p>TLV: (light work) 0.1 ppm as TWA;                  TLV: (moderate work) 0.08 ppm as TWA;                  TLV: (heavy work) 0.05 ppm as TWA;                  A4 (not classifiable as a human carcinogen); (ACGIH 2004).                  MAK:                  Carcinogen category: 3B; (DFG 2004).                  OSHA PEL<sup>†</sup>: TWA 0.1 ppm (0.2 mg/m<sup>3</sup>)                  NIOSH REL: C 0.1 ppm (0.2 mg/m<sup>3</sup>)                  NIOSH IDLH: 5 ppm See: <a href="#">10028156</a></p>	<p><b>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:</b>                  Lungs may be affected by repeated or prolonged exposure to the gas.</p>
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<b>PHYSICAL PROPERTIES</b>	<p>Boiling point: -112°C                  Melting point: -193°C</p>	<p>Solubility in water, g/100 ml at 0°C: 0.1                  Relative vapour density (air = 1): 1.6</p>
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<b>ENVIRONMENTAL DATA</b>	<p>This substance may be hazardous to the environment; special attention should be given to plants.</p>	
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**NOTES**

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Immediate administration of an appropriate inhalation therapy by a doctor or a person authorized by him/her, should be considered. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. Card has been partly updated in October 2004 and April 2005. See section Occupational Exposure Limits.

**ADDITIONAL INFORMATION**

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<b>ICSC: 0068</b>	(C) IPCS, CEC, 1994	<b>OZONE</b>
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**IMPORTANT LEGAL  
NOTICE:**

Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.