

MATERIAL  
SAFETY DATA  
SHEET

MATERIAL SAFETY DATA SHEET  
-OZONE -

**SECTION I: PRODUCT IDENTIFICATION:** OZONE

**CHEMICAL FORMULA:** O<sub>3</sub>

**SYNONYMS:** TRIATOMIC OXYGEN

**CHEMICAL FAMILY:** GASEOUS OXIDANT

**CAS NO.:** 10028-15-6

**NIOSH:** RTECS RS8225000

**MANUFACTURER:** HOWE-BAKER ENGINEERS, LTD., 3102 E. FIFTH ST., TYLER, TX 75701

**EMERGENCY PHONE NUMBER:** 903-597-0311

**SECTION II: COMPOSITION & PHYSICAL DATA:**

**MOLECULAR WEIGHT:** 48.0 g/mole

**SPECIFIC GRAVITY:** 2.144 g/L

**RELATIVE GAS DENSITY:** 1.66

**IONIZATION POTENTIAL:** 12.52eV

**MELTING POINT:** -192.5°C

**BOILING POINT:** -111.9°C

**VAPOR PRESSURE:** >1 atm

**WATER SOLUBILITY:** 0.001% (0°C)

**APPEARANCE AND ODOR:** CLEAR TO BLUISH GAS WITH SHARP, PUNGENT ODOR.  
OZONE IS HEAVIER THAN AIR.

**SECTION III: HEALTH HAZARD DATA:**

**THRESHOLD LIMIT VALUE (TLV)/TIME WEIGHTED AVERAGE (TWA):**

**OSHA PEL/NIOSH REL:** 0.1 ppm (0.2 mg/m<sup>3</sup>) 8-hr/day, 40hr/week

**OSHA/NIOSH STEL:** 0.3 ppm (0.6mg/m<sup>3</sup>) 15-min

**OSHA/NIOSH IDLH:** 5 ppm (10mg/m<sup>3</sup>)

**WARNING PROPERTIES:** ODOR THRESHOLD IS DETECTIBLE IN THE 0.01 TO 0.04 PPM RANGE, AND IS TREATED AS A MATERIAL WITH ADEQUATE WARNING PROPERTIES.

**EFFECTS OF OVER EXPOSURE:** IRRITATION OF NOSE AND THROAT AND MAY CAUSE, SHORTNESS OF BREATH AND/OR COUGHING, HEADACHES, FATIGUE, DROWSINESS, AND INFLAMMATION OF UPPER RESPIRATORY TRACT.

**SECTION IV: FIRST AID MEASURES:**

**INHALATION:** REMOVE FROM AIR CONTAINING OZONE, INTO AREA WITH FRESH AIR. IF BREATHING IS DIFFICULT, A TRAINED PERSON SHOULD ADMINISTER OXYGEN.

**SECTION V: FIRE AND EXPLOSION HAZARD DATA:**

OZONE IS MOST OFTEN GENERATED FROM AIR AT CONCENTRATIONS OF 1-2% BY WEIGHT. AT THESE CONCENTRATIONS OZONE IS NON- EXPLOSIVE.

**FLASH POINT:** N/D

**AUTO IGNITION TEMP:** N/D

**UPPER AND LOWER FLAMMABLE LIMITS IN AIR:** N/D

**SECTION VI: ACCIDENTAL RELEASE:**

EVACUATE AREA AND OPEN DOORS AND WINDOWS AND ALLOW AREA TO VENTILATE. OZONE IS UNSTABLE GAS AND DECOMPOSES TO OXYGEN WITHIN MINUTES TO HOURS.

**SECTION VII: REACTIVITY DATA:**

**STABILITY:** UNSTABLE. SLOWLY DECOMPOSES TO OXYGEN FROM WHICH IT WAS MADE.

**CONDITIONS TO AVOID:** CONCENTRATING OZONE TO LEVELS (>20%) WHERE ITS REACTIVITY AND RATE OF DECOMPOSITION ACCELERATES.

**INCOMPATIBILITY:** OZONE IS CHEMICALLY REACTIVE WITH ALL OXIDIZABLE MATERIALS, BOTH ORGANIC AND INORGANIC.

**SECTION VIII: PROTECTION & PRECAUTIONS:**

**VENTILATION:** GENERAL EXHAUST RECOMMENDED. INJECT FRESH AIR. AVOID WORK-ING IN OZONE GENERATING AREAS UNLESS OZONE LEVELS ARE BELOW PEL/TLV.

**RESPIRATORY:** RESPIRATORS MAY BE USED WHEN WORK PRACTICE CONTROLS ARE NOT TECHNICALLY FEASIBLE. USE NIOSH APPROVED RESPIRATOR.

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