



Special Application Oxygen Sensors

Due to the many applications for which MSA oxygen sensors are used, several specialized sensor types have been developed, driven by demand as new markets are explored. These sensors are used with permanent gas detection instruments, as MSA continues to offer the best products using the latest technologies. Within a product group (Toxgard® II Gas Monitor, Ultima® X Gas Monitor), these sensors are interchangeable as they are physically identical.

Please see the next page for a sensor selection guide, including a cross-reference section listing part numbers (Toxgard II Gas Monitor) and gas codes (Ultima X Gas Monitor). Operation within enriched oxygen atmospheres will shorten oxygen sensor life in a linear fashion. Sensor operation at constant elevated pressures has the same negative effect upon sensor life as oxygen enrichment. Special sensors must be ordered by C-Code for the Toxgard II Gas Monitor.

Standard sensors

These sensors are typically used for oxygen deficiency air monitoring, are normally exposed to ambient conditions and are not operated below 2% oxygen concentration for extended time periods. Sensors also compensate for barometric pressure changes and can be used for oxygen purity monitoring.

P/N	Used on	Conditions
Code #13, 14 P/N 813723	Ultima X Gas Monitor (X), Toxgard II Gas Monitor (T)	Atmospheric conditions, 21% O ₂ 79% N ₂

CO₂-tolerant sensors

These sensors are buffered to operate within high acid gas atmospheres and are the best choice for combustion processes, landfills, waste treatment, and some heat treats where CO₂ ranges from 5% to 25%. Exceeding high limits shortens sensor life.

P/N 710809	T	High CO ₂ , balance air
Code #62 P/N 710891	X T	High CO ₂ , solvent vapors

Low oxygen sensors

These sensors are commonly used for inerting processes or for blanketing tank head spaces to eliminate potentially combustible gas hazards. These sensors can be used when oxygen concentrations are 1% or less.

Code #63 P/N 710814	X T	Nitrogen, natural gas, etc.
Code #64 P/N 710890	X T	Solvent vapors

Solvent-resistant sensors

These sensors are enclosed in a specific housing type that is unaffected by high solvent vapors. These sensors should be used for process control and blanketing operations where high levels of organic solvent vapors are expected.

Code #55 P/N 710889	X T	Solvent vapors in air
Code #64 P/N 710890	X T	Solvent vapors in nitrogen
Code #62 P/N 710891	X T	Solvent vapors, high CO ₂

Helium, argon and nitrogen monitoring

The presence of helium, argon and nitrogen in one location poses a special consideration for measurement of oxygen displacement, addressed here.

Nitrogen leaks	MSA recommends use of #14 0-25% O ₂ sensor within nitrogen environments. This sensor is pressure-compensated and provides optimum accuracy within pure nitrogen environments. Pure nitrogen gas density is very similar to air; placement consideration is typically at the breathing zone for single-point detection scenarios.	
Argon/helium leaks	MSA recommends use of #62 0-25% O ₂ (solvent & CO ₂ tolerant - stainless steel) sensor within argon or helium environments. This sensor is temperature-compensated and provides optimum accuracy within pure argon or helium environments. Use of #14 sensor is not recommended within argon or helium environments due to accuracy concerns, as argon or helium molecules are not compatible with this sensor's capillary size.	
Helium	Mount high	Use #62
Nitrogen	Mount 5' high	Use #14
Argon	Mount low	Use #62

Special notes

- For Toxgard II Gas Monitor MRI installations, specify P/N 10076408. For any Toxgard Gas Monitor applications requiring UL approval, specify any of the above sensors via C-Code and T-116.
- For applications where the background is composed of anything other than air, do not use gas codes #13 or #14; instead use one of the special sensors listed above, depending upon other conditions present. Contact MSA Customer Service at 1-800-MSA-INST with questions.
- Some category overlap is inevitable; choices must be made when evaluating customer requirements. Sensor misapplication adversely affects and shortens sensor service life. The best fit is achieved and the most reliable systems installed by operating within the parameters listed here.

Note: This bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.



Corporate Center
1000 Cranberry Woods Drive,
Cranberry Township, PA 16066 USA
Phone 724-776-8600
www.MSAafety.com

U.S. Customer Service Center
Phone 1-800-MSA-2222
Fax 1-800-967-0398

MSA Canada
Phone 1-800-672-2222
Fax 1-800-967-0398

MSA Mexico
Phone 01 800 672 7222
Fax 52-44 2227 3943

MSA International
Phone 724-776-8626
Toll Free: 1-800-672-7777
FAX 724-741-1559

Offices and representatives worldwide

For further information:

ID 07-02110-MC / May 2012

© MSA 2012 Printed in U.S.A.

MSA
The Safety Company