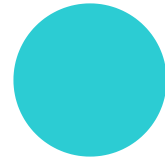


UNDERSTANDING THE SAFETY RISKS OF AN OXYGEN-DEFICIENT ENVIRONMENT

An environment in which O2 levels fall below 19.5% is an oxygen-deficient atmosphere, which should be treated as immediately dangerous to health or life.

Occupational Safety & Health
Administration
OSHA



OXYGEN DEFICIENCY

An oxygen-deficient environment may be created when oxygen is displaced by inert gases, such as nitrogen, helium, argon, or carbon dioxide. Oxygen deficiency monitors contribute to safe working environments in any scientific or industrial application utilizing oxygen-depleting gases and, therefore, requiring continuous monitoring of oxygen levels.

INDUSTRIES SERVED

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Oxygen Concentration (% vol)	Health Effects
20.9 - 19 %	Little to no effect in healthy adults
15 - 19 %	Increased breathing rate, accelerated heartbeat. Impaired attention, thinking & coordination without awareness.
12 - 15 %	Poor judgment. Faulty coordination. Abnormal fatigue upon exertion. Emotional upset.
10 - 12 %	Very poor judgment & coordination. Impaired respiration that may cause permanent heart damage. Possibility of fainting within a few minutes without warning. Nausea & vomiting.
< 10 %	Nausea, vomiting, lethargic movements or the inability to move. Fainting almost immediate. Loss of consciousness. Convulsions. Death



1140 Ensell Road
Lake Zurich, Illinois 60047
www.pureairemonitoring.com
(847)726-6000
(888)788-8050