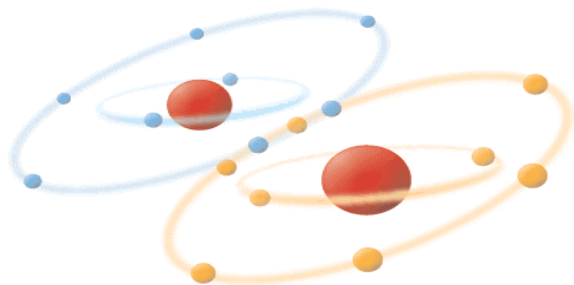


Advanced Oxygen Control Options For Your Critical Culture Studies



Why do I need O₂ Control?

Stem Cell, Oncology, and IVF research are moving towards more closely mimicking *in-vivo* environmental conditions for optimal results. It has been shown that by creating the hypoxic conditions that cells are subjected to *in-vivo*, the expression profile and behavior in most cases are radically different than under CO₂ control alone. This makes controlling the O₂ environment critical for assessing the feasibility of many therapies and experiments for clinical applications.

This is why NBS offers three levels of O₂ control. This, combined with our sophisticated and intelligent display design, enables you to put *in-vivo* conditions *in-vitro*, with a touch of a button.



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Option # 1 1-19% O₂ Control

Customers seeking a hypoxic condition may choose our most popular option. By displacing the Oxygen with Nitrogen, we are able to accurately maintain the low O₂ conditions your cells may require.

- 1. IVF** - Studies have shown the critical importance of low-oxygen tension on development through the maturation, fertilization, and culture stages. (Combine O₂ control with the CO-14 for a personal size dedicated IVF Incubator)
- 2. Aging Studies/Hypoxic Stress** - Hypoxia is related to many pathological conditions: aging, heart and respiratory failure, chronic obstructive pulmonary disease (COPD), diabetes, hypertension and arteriosclerosis. In addition, the human body becomes more susceptible to hypoxia as it ages resulting in tissue degradation.
- 3. Anaerobic Bacterial Growth** - Utilize this option to create an anaerobic chamber without the need for a gas pack. *Yersinia*, *Neisseria*, *Campylobacter*, *Helicobacter*, and other Enterics are all example of cultures which thrive in our incubators. Expand your capacity by not being limited to anaerobic jars.

Option # 2 0.1-19% O₂ Control

Customers seeking <1% O₂ control may choose this option.

- 1. Stem Cells** - Early-stage stem cells differentiate spontaneously in an ambient O₂ environment. A stringent low O₂ environment allows the researcher to control the stem cell differentiation and maintain full pluripotency of their lines.

Option # 3 1-95% O₂ Control

Customers seeking the utmost versatility and require hyperoxic conditions may choose this option.

Example Applications:

1. Alveolar epithelial and macrophage studies
2. O₂ toxicity studies
3. Mitochondrial ROS production
4. Blood-gas transfer
5. High oxygen tension
6. Fibroblast control