Excess Oxygen In An Air Sample

- **Have you ever experienced too much oxygen in your compressed breathing air sample?**
- **Has your air sample failed quality testing based on excessive oxygen?**

A new or newly regenerated molecular sieve is probably to blame

What is a molecular sieve?

Many compressor systems have an in line molecular sieve cartridge to remove moisture from compressed air. A molecular sieve is designed to remove moisture from the compressed air stream by passing the air through a cartridge filled with molecular sieve pellets. Molecular sieves are crystalline, synthetic zeolites. The crystal lattice of the molecular sieves contain numerous hollow spaces that are interconnected by pores with a constant radius. Absorbents are activated by using heat to remove the water contained in the hollow spaces and pores. Since the hollow spaces in which the adsorption takes place are accessible only by the exactly dimensioned pores, only those molecules that have a diameter smaller than the pores can be adsorbed. [1] This is how a molecular sieve removes moisture from the compressed air.

Why is there too much oxygen present in my air?

Molecular sieves which are new or newly regenerated allow the oxygen to move through the pellets faster than the nitrogen in air. This oxygen will increase the percentage of oxygen in the air for a short period of compressor usage but within a matter of minutes the oxygen in the compressed air will be the same as the oxygen in the air entering the compressor.

Will this occur every time I regenerate my Molecular Sieve?

Yes, the increase in oxygen can recur each time a new cartridge of molecular sieve is installed or regenerated.

Will the oxygen level return to normal?

Yes, shortly after being put back into use, the oxygen level will return to normal. The length of time depends on the dimensions, use and flow rate of the cartridge.

What should I do about this problem?

In most cases oxygen levels are not at a dangerous level. If possible, allow the compressor system to operate with air flowing for fifteen minutes. If you are still having problems, contact the manufacturer for further details.

[1] http://www.epa.gov/ttn/catc/dir1/fzeolite.pdf

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