

# Oxygen percent in a room

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I need some help in trying to calculate the percentage of oxygen existing in a closed room. This is partly just for my interest, but there is a practical side to my question also.

I live in a recently built house that is one of these "super-insulated" structures with little outside air exchange except what is forced via fans. During the winter months I live primarily in a couple of rooms closed off from the main house to save on heating bills.

I have equipment that very accurately measures the carbon dioxide level in real time, that is located in my main living area. I live at 3000 feet elevation, and the house is all electric; no oxygen consuming heating, not even a wood burning stove. I don't have any way of directly measuring o2 in the house.

The measured co2 in my living area ranges from approximately 500 ppm to over 2000 ppm. The higher concentrations generally occur during the winter months when I am spending more of my time indoors, and am preserving the heat by running the forced air intake fans less. (This will be changing in the future, as I will be forcing air from a solar heated porch into the house during some winter daylight hours)

My question is, from knowing the co2 concentration (and humidity percent also) in a closed space, how can I calculate the oxygen concentration? I know that the o2 concentration of normal dry air is around 20.95 percent, but suspect that the relationship is not perfectly direct between the increase in co2 and the decrease of o2.

Any help on this math problem would be appreciated.

Thanks  
Jim