

- Why is helium instead of nitrogen mixed with oxygen in deep sea diving? Explain the origin of any differences in relevant properties.

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**Increased pressure in lungs during deep sea diving causes an increased solubility of all gases in the blood. On ascending too quickly, these gases can bubble out of the blood. This is a serious problem with nitrogen as the bubbles can rupture blood vessels causing "the bends". The He atom is much smaller than the N<sub>2</sub> molecule, has a smaller electron cloud and is less polarisable. It therefore is less soluble in blood than nitrogen and is preferred as the above dangers are reduced.**