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Do You Need to Deaerate the EBC Sample Before Measuring pH?

No you do not have to. Indeed papers have been published in which the investigators performed the pH reading immediately after sample collection¹, with very interesting data resulting.

However, EBC pH will commonly increase over time as carbon dioxide (and therefore carbonic acid) evolves out of the sample. Therefore the pH assay is time sensitive when done without deaeration. The pH assay therefore should be performed immediately after or during collection if deaeration is not planned.

However, if you employ deaeration to remove CO₂, there is no time sensitivity of the assay. Both deaeration and pH measurement can be performed any time after collection. Up to years.

There is a complete discussion of the issues that surround EBC deaeration for pH measurement on this website, including "What pH Meter Should I Use?," "What pH Probe Should I Use?," "Deaeration for pH Assay — How?," and "Deaeration for pH Assay — Why?."

References

- 1 Tate, S., G. MacGregor, M. Davis, J. A. Innes, and A. P. Greening. 2002. Airways in cystic fibrosis are acidified: detection by Exhaled Breath Condensate. *Thorax* 57(11):926-9.