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Non-Acidification Technique for Extracted Chlorophyll *a* Analysis

Accuracy

Use of the Non-Acidification Optical Kit (P/N 10-040R) will result in more accurate chlorophyll *a* concentration data in all environments. The optical kit is specifically designed to reduce errors due to the background fluorescence from interfering compounds such as chlorophylls *b* and *c*, pheophytin and dissolved organic matter. The improved accuracy is achieved by the following:

Lamps – The Blue Mercury Vapor Lamp has narrow lines of emission which optimally excite chlorophyll *a* at 436nm and minimally excite other interfering compounds (see Figure 1).

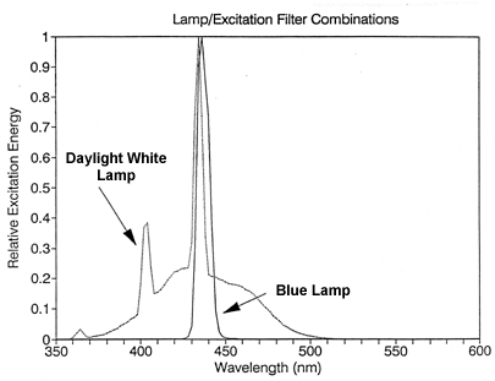

Figure 1

Filters – Narrow band interference filters are selected to only allow the specific excitation (436nm) and emission (680nm) wavelengths of chlorophyll *a* to pass (see Figure 2).

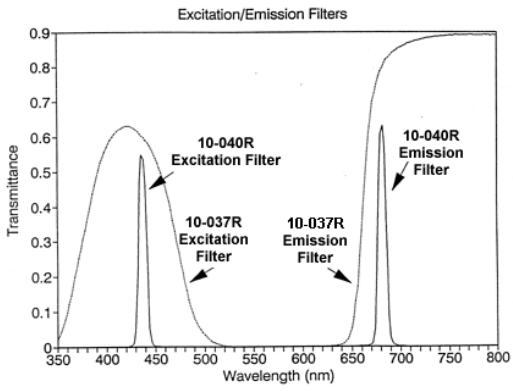

Figure 2

Approved by EPA

The Non-Acidification Kit is now EPA approved. For Method 445.0 rev.1.2 or go directly to the EPA webpage at http://www.epa.gov/nerlcwww/marinmet.htm
NOTE: the Non-acidification technique is referred to as the "modified fluorometric" technique in Method 445.0.

Easier

The fluorometric procedure and concentration calculations are simplified due to the absence of the pheophytin correction.
NOTE: Pheophytin concentration cannot be determined with the Non-Acidification technique.

Chlorophyll *b* Interference

The Non-Acidification Kit is not sensitive to high chlorophyll *b* concentrations and is well suited for freshwater and open ocean environments.

Recent Publications

Tittel, J., B. Zippel, W. Geller. 1998. Relationships between plankton community structure and plankton size distribution in lakes of Northern Germany. Limnol. Oceanogr. **43(6)**: 1119-1132.

Welschmeyer, N.A. 1994. Fluorometric analysis of chlorophyll *a* in the presence of chlorophyll *b* and pheopigments. Limnol. Oceanogr. **39(8)**: 1985-1992.

Yahel,G., A.F. Post, K. Fabricius, D. Marie, D. Vaulot, A. Genin. 1998. Phytoplankton distribution and grazing near coral reefs. Limnol. Oceanogr. **43(4)**: 551-563.