

Chlorophyll-*a* Calibration Standard

Description:

All plant life contains the primary photosynthetic pigment *chlorophyll-a*. Microscopic, planktonic plants, or phytoplankton, occupy the lit zone of all water bodies. With over 70% of the surface of the earth covered in water, phytoplankton and photosynthetic bacteria are responsible for almost ½ of the planet's primary production while their total biomass comprises less than 1% of the total plant biomass. *Chlorophyll a* fluorescence is the most versatile, sensitive and easy way to measure the concentrations of phytoplankton in water.

The quantitation, through extracted *in vitro* analysis, or estimation, through *in vivo* analysis, of *chlorophyll a* concentration supplies information on the abundance of phytoplankton present in all aquatic environments. Since *chlorophyll*-containing organisms are the first step in most food chains, the health and/or abundance of these primary producers will have cascading effects to all higher organisms.

Fluorescence Detection:

Chlorophyll-a naturally absorbs blue light and emits, or fluoresces, red light. A fluorometer detects *chlorophyll-a* by transmitting an excitation beam of light in the blue range (436nm for *in vitro* analysis and 460nm for *in vivo* analysis) and by detecting the light fluoresced by cells or *chlorophyll-a* in a sample at 680nm (red). Generally, this fluorescence is directly proportional to the concentration of the material in question.

Amiscience's low-cost *Chlorophyll-a* primary calibration standard (**P/N: STD-CHL-30ML**) is designed and formulated for Amiscience's handheld fluorometers or other manufacturer's equivalent, and is even suitable for submersible probes. Each calibration standard is stored in a 30mL bottle.

Features: (P/N: STD-CHL-30ML)

- Low cost and convenient.
 - Concentration: Approximately 250-ppb (shown on each kit) dissolved in 100% acetone.
 - Each batch is certified by colorimetric and fluorometric methods to determine the concentration.
 - Shipped overnight in room temperature and stored at -20°C.
 - Shelf-life 3 months if stored properly.
- * If using 1-cm cuvette, a glass or quartz cuvette with 1.2mm OD (P/N: CUV-GLASS) is required as acetone will dissolve the plastic cuvette.

