

## FluoroQuik™ Chlorophyll *a* Fluorometer Kit

### Description:

All plant life contains the primary photosynthetic pigment *chlorophyll a*. Microscopic, plank tonic 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 half of the planet's primary production while their total biomass comprises less than 1% of the total plant biomass. 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. Therefore, the determination of *chlorophyll* concentration is one of the key indices in monitoring the health of any water system. The quantization, through extracted (*in vitro*) analysis, or estimation (*in vivo*) analysis, of *chlorophyll a* concentration supplies information on the abundance of phytoplankton present in all aquatic environments. *Chlorophyll* measurements are also used to directly monitor phytoplankton populations. Examples include, but are not limited to, the monitoring of *chlorophyll* in natural marine and freshwater environments, reservoirs, water and sewage treatment plants, and aqua cultural systems.

### Fluorescence Detection:

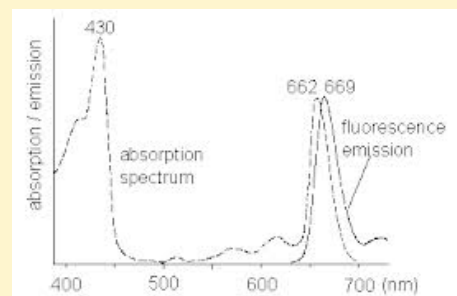
*In vivo Chlorophyll a* fluorescence is the most versatile, sensitive, and easy way to measure the concentrations of phytoplankton in water. *Chlorophyll a* naturally absorbs blue light and emits, or fluoresces, red light. A fluorometer detects *chlorophyll a* by transmitting an excitation beam of light in the blue range and by detecting the light fluoresced by cells or *chlorophyll* in a sample. Generally, this fluorescence is directly proportional to the concentration of *Chlorophyll a*.

*In vivo* fluorescence data supplies information on the relative distribution of *chlorophyll* concentrations and usually correlate well with extracted *chlorophyll a* samples. *In vivo* detection has several very useful applications. An example is the monitoring of general trends in *chlorophyll* concentrations in real time. It is very easy to obtain large amounts of data using *in vivo* instrumentation and is an excellent means of following trends and estimating *chlorophyll* concentration.

Amiscience's handheld fluorometer (model#: **FQ-CHL/IV-C**) has been proven to detect low level of *chlorophyll a*. Due to its high portability and low cost, it can be used anywhere in the field to conduct environmental study of natural water resources or man-made water systems.

### Performance:

- Linear Range: 0-500 µg/L
- Sensitivity: 0.25 µg/L (using extracted chlorophyll as sample)
- Stores 3x80 data points for computer analysis
- Use low cost standard 1-cm cuvette for easy sample collection
- Simple on-screen single-point calibration procedure
- Touch Screen LCD Display



### FluoroQuik™ Chlorophyll *a* field kit (FK-CHL/IV-C) includes:

P/N	Description
FQ-CHL/IV-C	Handheld fluorometer for Chlorophyll <i>a</i> , with USB, Power Supply, and Software CD
CC-1264	Carrying case
TPT-500UL-100	Disposable transfer pipette, 0.5mL, 100pcs/bag
CUV-1ML-100	1-cm plastic cuvette with cap, 100pcs/bag

