



DHI LAB PRODUCTS

## DHI $^{14}\text{C}$ AMPOULES

Ready-to-use measurement for phytoplankton primary production

Ampoules containing an aqueous solution of  $\text{NaH}^{14}\text{CO}_3$  are offered as 'ready-to-use' measurements for phytoplankton primary production.  $\text{NaH}^{14}\text{CO}_3$  is purified in our laboratories by distillation in order to remove metals that can affect the primary production. The sterile ampoules are distributed with a certificate specifying the activity.

### PHYTOPLANKTON PRIMARY PRODUCTION

Primary production is a fundamental ecological variable. It is a measure of the primary energy input into the aquatic environment because of its significance in indicating and characterising the condition of a particular water body. Primary production can be measured conveniently using the so-called  $^{14}\text{C}$  method. By adding a known amount of the radioactive isotope  $^{14}\text{C}$  to a water sample, the algae will take up  $^{14}\text{C}$  along with native  $^{12}\text{C}$  present in water. After a short incubation period (hours), the  $^{14}\text{C}$  incorporated in the algal cells can be measured by liquid scintillation counting. The total carbon uptake can thus be calculated.

The method is very sensitive and the primary production is widely used in assessing water quality (for instance, in relation to eutrophication in water environments). Primary production is also used as a vital parameter when modelling how changes in nutrient loads affect the environment.



**Carbon 14 Centralen**  
The International Agency  
for  $^{14}\text{C}$  Determination

The international Agency for  $^{14}\text{C}$  Determination is a part of DHI and has more than 50 years of experience in primary production measurements

### LIQUID SCINTILLATION COUNTING

Samples such as dry filters with radioactive material can be shipped to the DHI laboratories for liquid scintillation counting. This includes measurements of particulate primary production, as well as water and sediment samples. DHI is accredited by The Danish Accreditation and Metrology Fund (DANAK) to carry out measurements of  $^{14}\text{C}$  radioactivity in samples by liquid scintillation counting.

### DHI $^{14}\text{C}$ AMPOULES

#### BENEFITS

- $^{14}\text{C}$  solution in ampoules or sealed vials
- Ready-to-use
- Free of toxic substances
- Molarity corresponding to natural levels



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#### FEATURES

- Calibrated for specific activity
- Delivered with a Certificate of Analysis
- Stock solutions of 4, 10 and 20  $\mu\text{Ci mL}^{-1}$
- Special volume and activity on request



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#### DHI LAB Products

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