OIW-1000

UV PHOTOMETER FOR THE EXAMINATION OF ORGANIC SUBSTANCE IN WATER

SINEO新仪

Professional & Rapid Indicator of Organic Pollution

INTRODUCTION

Organic pollution is an important index of water body pollution, and a water body will be darkened with off odor if it contains too much organic matter. Traditional methods for test of organic matter, e.g. TOC, COD, BOD, take a long time and need expensive instruments, with high operating requirement and high cost of reagent. Especially, conclusions can't be made immediately after a test in one of these methods .What's more, some virulent waste liquids may be discharged from some tests, which can harm the environment. Therefore, people are longing for a simple and feasible method instead. UV254 method is an originative method that emerges as the times require.

It is based on the theory that most organic compounds commonly found in water and wastewater strongly absorb ultraviolet radiation. This instrument uses a bundle of ultraviolet lights (UV) to test the total absorption (organic matter and turbidity), and another bundle of visible lights (VIS) for testing the turbidity absorption. Then the influence of turbidity is deducted through automatic processing by computer, the accurate absorption of pure organic matter can be obtained, and the content of organic matter is deduced. The whole course takes one second only.

This instrument uses a microcomputer chip for its core, a keyboard for operating, a LCD with back light unit for display of measuring results, and a built-in mini-printer for printing the measuring results dated with test time. It can store the working curves of 80 kinds of different water samples for the use in future. It's portable, and suits to power supply for 100v, 110v, 220v, 240v and automobile power supply.

This method is recommended in Japan, some European countries and American Water Works Association (AWWA) , etc.

ADVANTAGES OF UV254

Extraction, heating, digestion and other treatments as well as any reagent are unnecessary for samples any longer. This instrument has high repeatability and conforms to relevant environmental protection requirements, free of interference by chloride ion and others, without any poisonous substances discharged. The instrument, at a quite low running cost, doesn't need routine maintenance or a professional operator, thus a one-off small investment for it can solve long-term problems.

APPLICATIONS

Many organic compounds commonly found in water and wastewater, such as lignin, tannin, humic substances, and various aromatic compounds, strongly absorb ultraviolet (UV) radiation. UV absorption is a useful surrogate measure of selected organic constituents in freshwater, salt waters, and wastewater. Strong correlations exist between UV absorption and organic carbon content, color, and precursors of trihalomethanes (THMs) and other disinfection byproducts. UV absorption also has been used to monitor industrial wastewater effluents and to evaluate organic removal by coagulation, carbon adsorption, and other water treatment processes. Specific absorption, the ratio of UV absorption to organic carbon concentration, has been used to characterize natural organic matter. It is intended to be used to provide an indication of the aggregate concentration of UV-absorbing organic constituents.

Strictly speaking, this instrument applies a method consistent with TOC, COD, BOD and other methods. In many countries, its reading, absorbance or specific absorption coefficient (SAC) - "UV254", is used for control of discharge capacity. In many situations, its reading is correlated with the readings obtained in TOC, COD and BOD methods, and the above index can be directly read after conversion. If there is not any national or regional standards for pollution discharge in this method, it's recommended to have a try of applying this method as an internal control method for monitoring the concentration change of organic matter in water (for specific absorption coefficient only), for cost cutting and time saving. This method can essentially complement traditional methods.

This instrument can be widely applied to surface water (rivers, lakes, reservoirs, seas and oceans), ground water, domestic sewage and industrial waste water discharged from urban sewage treatment plant, chemical plant, gas plant, cokeoven plant, paper factory, pharmaceutical factory, iron and steel plant, detergent factory, tannery, landfill percolate, dyeing plant, chemical fiber plant, agricultural products processing factory, beverage factory, milk plant, brewery, food factory, etc.

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Features

A Water quality monitoring of many sampling spots by single instrument

The instrument can be used for direct testing on site or concentrative testing of many samples from various sampling spots collected in a lab.

B Quick indication of any reaction extent in the industrial technologic process

There is a specific absorption coefficient corresponding to every reaction degree, and the particular reaction degree can be reckoned according to relevant specific absorption coefficient during production flow.

C Able to deduct the influence of turbidity to make sample treatment unnecessary

SPECIFICATIONS AND PARAMETERS

Reading format:
Abs, SAC (UV254), COD, TOC, BOD, turbidity

Measurement Range:
0-300m^{-1}, or 0-3Abs.
effect of turbidity deducted simultaneously.
(0-60 m^{-1} & 0-1500 m^{-1}, Optional)

Accuracy:
10%

Repeatability :
2%

Stability:
better than 0.005A/20min

Display:
4x20 characters LCD display with backlight

Output:
Printer (built-in)
RS232c interface (can be connected with PC, Optional)

Power supply:
AC100v-240v, 1A

Size:
346x280x125 mm

Weight:
approx. 4kg (net weight), portable

APPLICATION REFERENCE

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