



BioTector®

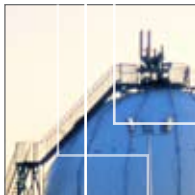
Series 4

ON-LINE TOC ANALYZER





■ Why Use The BIOTECTOR?



The BioTector® is a continuous on-line TOC (Total Organic Carbon) analyzer for environmental monitoring, process control, and waste minimization. The advanced technology of the BioTector revolutionizes traditional methods, providing the optimal solution for TOC analysis. While conventional TOC analytical methods were initially developed for laboratory applications and then later modified for on-line purposes, the BioTector was specifically developed for on-line TOC measurement in process applications. Through complete oxidation of the sample the BioTector eliminates buildup issues that lead to drift and high-maintenance costs.

INDUSTRIES

The BioTector has been used in applications worldwide, in such industries as:

- Dairy
- Chemical
- Refining
- Municipal Treatment
- Food and Beverage
- Pulp and Paper
- Airports
- Pharmaceutical
- Many more!



■ Principles of OPERATION

By exposing high pH reagents to a concentration of ozone, hydroxyl radicals—which are unstable and highly corrosive—are created. These hydroxyl radicals are then used in a very aggressive oxidation process known as Two-Stage Advanced Oxidation (TSAO).

The BioTector has five operational stages for analysis:

SAMPLING

Automatically selects the optimum sample volume

AUTOMATIC RANGE SELECTION

Selects the best range based on previous results

TIC PHASE

Inorganic carbons are removed and measured

BASE OXIDATION (TSAO)

Organic material is oxidized with hydroxyl radicals

TOC PHASE

Organic carbons are removed and measured

■ Features & BENEFITS



LOW MAINTENANCE

Complete oxidation of the representative sample is the key advantage of the BioTector. Drift, caused by buildup, has resulted in chronic recalibration in older technologies. The BioTector uses hydroxyl radicals to fully oxidize the sample, drastically minimizing drift. The patented self-cleaning technology of the BioTector also diminishes traditional maintenance requirements, so advanced that it virtually eliminates filtration. With six month (suggested) preventative maintenance intervals, no calibration is needed between services. The result is better than a 99% on-line time, which in turn reduces the time and costs associated with routine maintenance.

EASY, RELIABLE OUTPUT

The BioTector outputs up to 86,000 measurements per year with an accuracy of +/- 3% of reading. The analyzer has an automatic range selection and multi-streaming features, with capabilities of up to eight streams (six process streams). The analyzer makes direct measurements without dilution on ranges up to 15,000mg c/l in a 6 minute cycle and up 100,000 mg c/l in a 12-minute cycle.

HIGH CAPACITY

While other technologies fail with fats, greases, and oils, the BioTector can measure particulates up to 2 mm without filtering. This allows the BioTector to easily handle chlorides up to 25% and calcium sludge up to 12% by volume. The BioTector can also oxidize very large samples (up to 10ml); up to 1,000 times larger than standard technologies.

STRENGTH AND DURABILITY

The robust materials of construction—Stainless Steel, Hastelloy, Teflon, Neoprene, and Kalrez—withstand a wide variety of corrosive and toxic process fluids. Contrary to existing technologies, the BioTector was designed to overcome problems and limitations with contamination and drift.





■ ACCESSORIES

VACUUM SAMPLER

The Vacuum Sampling System is designed to bring water samples over a distance of 40 meters (131 feet), with a maximum lift of 6 meters (20 feet), and to present the sample to the BioTector at ambient pressure. In addition, the Vacuum Sampler can be used as a gravity filtration system, where sand and other hard particles can settle in the sampling chamber before the BioTector takes its sample.

SERVICE KITS

Ohmart/VEGA offers six and twelve month service kits.

OXYGEN GENERATORS

Oxygen generators are self-contained systems for the production of high concentration oxygen. Integrated air and stand-alone oxygen generators are available.

CONSUMABLES

Depending on the sample frequency—acid, base, and bottled oxygen should be replaced every three to six weeks.



■ BIOTECTOR At a Glance

Advantages	Two-Stage Advanced Oxidation
sample oxidation	complete oxidation using hydroxyl radicals
filtration	no
self-cleaning	yes
automatic range selection	yes
multi-streaming	up to 8 streams (6 process streams)
sample tube size	minimum 3 mm
particulate size	up to 2 mm
sample volume	up to 10 mL
measurements per year	86,000
on-line time	> 99%
accuracy	+/- 3%
preventative maintenance	6 months suggested intervals
results	6 minutes
interference from salts and calcium	handles chlorides up to 25% and calcium sludge up to 12% by volume
resistant to corrosive, toxic fluids	yes
programmable modes	TIC & TOC, TC, VOC
additional modes available	TN (total nitrogen)



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