

Online Organics Analysis in the Food Industry

Problem

Food processing plants struggle to maximize raw materials and reclaim lost product, impacting a plant's gross margin and creating compliance risks. Further, undetected product can foul mechanical equipment, leading to production issues and equipment downtime.

Solution

The BioTector B3500 and B7000 Total Organic Carbon (TOC) Analyzers offer reliable, accurate organic measurement to help facilities effectively measure organics in their water streams.

Benefit

BioTector's TOC measurement provides a clear picture of organics throughout a plant to reduce product loss, improve process control, minimize equipment damage, ensure permit compliance, and maximize profits.



Importance of Monitoring Organics

All food sources have an organic component. Monitoring organics in water and drain lines helps production facilities quickly and accurately measure the carbon content in their water streams so they can:

Maximize production yield by quickly detecting product loss events to take corrective actions and improve production management processes to prevent future product loss.

Mitigate compliance risks by addressing biological treatment overload, irregularities in operations, and inefficient chemical feed in the wastewater treatment process. Food production facilities can save energy, reduce chemical consumption, and generate less solid waste while consistently meeting regulation requirements.

Protect capital equipment by reducing corrosion, leaks, fouling, maintenance, and downtime. Organics in condensate will cause organic acid formation, leading to corrosion of the boiler and damage to valuable assets.

The BioTector TOC Analyzers help facilities run more efficiently by measuring organics in minutes to diagnose product loss, optimize treatments, improve process control, protect capital equipment, and most of all ensure compliance.

Organics Measurement Methods

Biological oxygen demand (BOD) and chemical oxygen demand (COD) are commonly used to indirectly measure organics, but it takes five days to test BOD and several hours for COD. Lab TOC analysis directly measures organics but without continuous readings, it is difficult for facilities to optimize treatments or detect product loss.

Only online TOC analysis provides quantifiable product loss detection and helps protect capital equipment. Many TOC analyzers won't hold up in the harsh conditions of food and dairy processing. However, the B7000 uses patented two-stage advanced oxidation (TSAO) technology and larger internal diameter tubing (with self-cleaning), giving the B7000 the ability to measure organics reliably in food processing conditions with 99.86% uptime and required preventative maintenance only twice per year.

With the ability to monitor two streams, the B3500c is ideal for clean water, such as condensate applications. Facilities can continuously monitor condensate return lines for organics to facilitate water reuse. When TOC is high, systems can divert the condensate to protect equipment, alarm staff to look for leaks, and track TOC data for process improvement.

What are you doing to monitor organics? Find the right solution for your facility.



	B7000i	B3500e	B3500c
Typical Application	<ul style="list-style-type: none"> Industry Process Control Wastewater Treatment Plant Influent & Effluent Dairy 	<ul style="list-style-type: none"> Industrial Wastewater Treatment Plant Effluent Municipal Wastewater Effluent 	<ul style="list-style-type: none"> Condensate Return Cooling Water Demineralized Water
TOC Range	0-100 up to 0-20,000 ppm	0-250 or 1000 ppm	0-25 or 100 ppm
TOC Mode	TIC/TOC, TC, VOC BOD/COD after correlation TN & TP available in B7000	TIC/TOC, TC BOD/COD after correlation	TIC/TOC, TC, VOC BOD/COD after correlation
Two-Stage Advanced Oxidation	Yes	Yes	Yes
Self Cleaning	Reactor & Sample Tubing	Reactor & Sample Tubing	Reactor
Sample Characteristic	< 2 mm particles Dirty Fat, oil, greases, sludge and salts pH swings	< 100 µm particles Semi-Dirty Some fat, oil, greases, sludge Some pH swings	< 100 µm particles Clean Free of fat, oil, greases, Stable pH
Number of Streams	6	1	2
Dimensions	1250 mm x 750 mm x 320 mm (49.21 in x 29.53 in x 12.60 in)	750 mm x 500 mm x 320 mm (29.52 in x 19.68 in x 12.59 in)	750 mm x 500 mm x 320 mm (29.5 in x 19.7 in x 12.6 in)

Certification



BioTector TOC is designed to handle tough industrial wastewater applications, having proven 99.86% Certified Uptime (certificate MCERTS MC120199/00) by the independent environmental agency after testing BioTector TOC in an industrial wastewater treatment plant for more than 3 months!

Hach Service and Support

Hach provides a number of service offerings, including: instrument start-up, basic instrument and user training, dedicated technical support, preventative maintenance, and repair. Please speak with your sales representative to learn more about what service options are available for you.

To learn more about the BioTector B7000 and B3500 TOC Analyzers, visit: hach.com

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