

Access 643a TOC Analyzer

Total Organic Carbon
Analysis Systems for
Pharmaceutical Waters

The Access 643a Total Organic Carbon (TOC) analyzer uses a unique patented technology to oxidize completely and determine accurately the organic levels in Purified Water and Water for Injection.

Access 643a: Flexible Compliance

It's important to choose a flexible TOC system to best fit your monitoring needs. The Access 643a-P can be conveniently moved throughout a high-purity water system for multi-point monitoring, troubleshooting and diagnostics.

Each Access 643a-S instrument can be located at a dedicated use point. Control and monitor up to eight instruments from a single location using the C80 controller.

Reagents

All necessary reagents required for instrument calibration, validation, system suitability, and cell constant testing are packaged in convenient 50-mL vials ready for use. Our in-house standards laboratory uses only USP Reference Standard (RS) and NIST traceable materials.

System Suitability

Access 643a allows convenient system suitability testing as required by TOC methods USP 26 <643> and EP 2.2.44. The results are automatically calculated and formatted into reports for display, printing and archival.

USP 26 <645> Conductivity Method Compliance

Access 643a allows accuracy verification of the meter electronics, to within the USP <645> specified $\pm 0.1 \mu\text{S}/\text{cm}$, using a special NIST traceable resistor. Using a pre-packaged NIST traceable calibration standard the cell constant is confirmed and calibrated to within the specified $\pm 2\%$. Conductivity is reported as non-temperature compensated, and alarm outputs are based on the Stage 1 parameters established in the USP conductivity method.



Model 643a-S

Model 643a-P

SAMPLE SYSTEM SUITABILITY REPORT

Analyte	Replicates			Average
rW	094	094	096	095 ppb
508 rS	533	547	553	544 ppb
511 rSS	545	563	565	558 ppb

Limit Response (rS - rW) = 449 ppb
 Suitability Response (rSS - rW) = 463 ppb
 Response Efficiency = 103%
 Efficiency Limit = 85% to 115%

SAMPLE TOC CALIBRATION REPORT

Analyte	Replicates			Average
Blank	011	012	013	012 ppb
250 std	251	252	253	252 ppb
500 std	501	502	503	502 ppb
750 std	751	752	753	752 ppb

Correlation Coefficient = 0.9999
 Calibration Accepted

ORDER INFORMATION

Model	Part Number
Access 643a-S	FG1002701
Access 643a-P	FG1002801
C80 Controller	FG5011601

Performance Specifications

TOC MODE

Operating Range:	1 to 1000 ppb as carbon
Resistivity:	0.2 to 18.2 M Ω -cm
Conductivity:	0.05 to 5 μ S/cm (@ 25 °C)
Display Resolution:	1 ppb
Online Repeatability:	1% or 1ppb, whichever is greater (repeatability of reading on an individual instrument)
Maximum Input Conductivity:	0.2 μ S/cm for all waters, 1.0 μ S/cm for all neutral waters, 5 μ S/cm for water with CO ₂ as the sole conductive species
Ambient Operating Temperature:	15 °C to 35 °C (59 °F to 95 °F)
Sample Water Temperature:	5 °C to 65 °C (41 °F to 189 °F)
Sample Inlet Flow Rate:	60 mL/min to 300 mL/min
Sample Inlet Pressure:	10 psi to 100 psi (69 to 690 kPa)

CONDUCTIVITY (PURGE) MODE

Conductivity Mode:	Temperature Compensated to 25 °C or Uncompensated
Conductivity Range:	0.05 to 150 μ S/cm (@ 25 °C)
Display Resolution:	0.01 μ S/cm over full range
Resistivity Range:	0.01 to 18 M Ω -cm (@ 25 °C)
Display Resolution:	0.01 to 14.9 M Ω -cm, 1.0 from 15 to 18.2 M Ω -cm
Conductivity Accuracy:	2% over Full range (Uncompensated)

CALIBRATION & VALIDATION

TOC	Three-Point Calibration:	0 ppb C (blank), 250 ppb C, 500 ppb C, 750 ppb C (all sucrose)
	One-Point Validation:	500 ppb C (sucrose)
	System Suitability:	500 ppb C (sucrose), 500 ppb C (1-4,benzoquinone), Reagent Blank
Conductivity	One-Point Calibration:	100 μ S/cm solution
	One-Point Validation of Meter:	61.9 k Ω resistor

PHYSICAL SPECIFICATIONS

General	Installation Category:	11, IEC 1010
	Pollution Degree:	2, IEC 664
Anet Network	Type:	RS-485
	Maximum Sensors:	8
	Maximum C80 Controllers:	8 (any configuration)
	Maximum Network Length:	1 km (3,000 ft)
	Network Cabling:	Shielded Twin-axial, Twist-Lock BNC
Display	Main:	4-line x 16-character Super-Twist LCD
	Backlighting (adjustable):	Yellow LED
	Character Height:	0.163"
Physical	Operating Temperature:	15 °C to 35 °C (59 °F to 95 °F), 100% RH maximum (non-condensing)
	Maximum Altitude:	4,000 m (13,125 ft)
	Size (w/ sample assembly):	193 mm H x 489 mm W x 119 mm D (7.6" H x 19.25" W x 4.7" D)
	Weight:	8.85 kg (19.5 lb)
I/O Connections	Analog:	Opto-isolated 4-20 mA output, Non-isolated 12 VDC output @ 1/2 Amp max.
	Digital I/O:	Two opto-isolated inputs, Two opto-isolated outputs
	Serial Interfaces:	RS485 opto-isolated Network, RS232 Data Acquisition, RS232 Printer, RS232 Diagnostics