# PROCESS WATER

Products intended for use in industrial or municipal settings where water quality parameters are being monitored continuously (by in-line, on-line, or at-line instrumentation), or by frequent and routine collection of samples for laboratory analysis.

Products in this section include calibration, system suitability, and conductivity solutions and kits for TOC, Conductivity, and Turbidity devices for ultra-pure water analysis including pharmaceutical, power generation, and semiconductor manufacturing. We also offer reagents and other instrument consumables such as replacement lamps.



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## **ANATEL TOC**

All of our ANATEL Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation. CRMs for the ANATEL PAT700 are formulated specifically for the unique technology inherent in that instrument and are packaged in ready-to-use RFID tagged bottles.

#### **ANATEL PAT700**

System Suitability		
Sets - USP / EP	Cat.#	Availability
USP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 60 mL bottles. Replaces ANATEL FG7018402	18402	Ships in 1 business day

Calibration		
Kits	Cat.#	Availability
Calibration Standards Kit Includes (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, and (1) 0.75 mg/L C NIST Sucrose in 60 mL bottles.  Replaces 4NATEL FG7019202	19202	Ships in 1 business day

Conductivity		
Kits	Cat. #	Availability
Conductivity Solution Kit Includes (1) 100 µS/cm Potassium Chloride (KCI) Solution in a 60 mL bottle. Replaces ANATEL FG7002602	02602	Ships in 1 business day

Validation		
Kits	Cat.#	Availability
Validation Control Kit Includes (1) Blank, and (1) 0.50 mg/L C NIST Sucrose in 60 mL bottles. Replaces ANATEL FG7019222	19222	Ships in 1 business day
Validation Protocol Reagent Kit Includes (14) Blanks, (5) Conductivity Solutions, (1) Validation Control Kit, (2) Calibration Standards Kit, (1) System Suitability Set, (1) Excursion with Validation Kit, (1) 0.25 mg/L C NIST Sucrose, (1) 0.75 mg/L C NIST Sucrose, (1) USP Reagent Water Rw, (1) 0.50mg/L C USP 1,4-Benzoquinone, and (2) Excursion Bottles (all bottles are 60 mL). Does not include NIST Traceable Resistor. Replaces ANATEL FG7019232	19232	Ships in 5 business days

Consumables		
	Cat.#	Availability
Replacement UV Lamp	20037	Ships in 1 business day
60 mL Pre-cleaned HDPE Bottles – Natural (case of 50) Case of 50: 60 mL Low TOC HDPE bottles with septa cap and dust cover.	25056	
Pre-Cleaned Caps w/Septa (100/pack)	25011	Ships in 5 business days

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.





The following CRMs are used for calibration and validation of the ANATEL A643 on-line TOC analyzer.

### **ANATEL A643**

System Suitability		
Sets - USP / EP	Cat.#	Availability
USP Bulk Water System Suitability Set Includes (2) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 60 mL bottles.  Replaces Cat.# 18400	48400	Ships in 1 business day

Calibration		
Kits	Cat.#	Availability
Calibration Standards Kit Includes (2) Blanks, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, and (1) 0.75 mg/L C NIST Sucrose in 60 mL bottles. Replaces Cat.# 19200	49200	Ships in 1 business day

Conductivity		
Kits	Cat.#	Availability
Conductivity Solution Kit Includes (1) 100 μS/cm Potassium Chloride (KCI) Solution in a 60 mL bottle. Replaces ANATEL FG5010401	02610	Ships in 1 business day

Validation		
Kits	Cat.#	Availability
Validation Control Kit Includes (2) Blanks, and (1) 0.50 mg/L C NIST Sucrose in 60 mL bottles. Replaces Cat.# 19220	49220	Ships in 1 business day
Validation Protocol Reagent Kit Includes (10) Blanks, (3) 0.25 mg/L C NIST Sucrose, (5) 0.50 mg/L C NIST Sucrose, (3) 0.75 mg/L C NIST Sucrose, (1) 100 µS/cm Conductivity Solution Kit, and (4) USP System Suitability Sets (all bottles are 60 mL). Replaces reference materials portion of ANATEL FG5017701. Does not include NIST Traceable Resistor.	19230	Ships in 5 business days
Validation Kit Includes (2) Blanks, and (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, (1) 0.750 mg/L C NIST Sucrose, (1) 100 μS/cm Conductivity Solution Kit, and (1) USP System Suitability Set in 60 mL bottles. Replaces Cat.# 19210	49210	Ships in 1 business day

Consumables		
	Cat.#	Availability
Replacement UV Lamp Replaces ANATEL FG6002601	20036A	Ships in 1 business day
60 mL Pre-cleaned HDPE Bottles – Natural (case of 50) Case of 50: 60 mL Low TOC HDPE bottles with septa cap and dust cover.	25056	Ships in 1 business day
Pre-Cleaned Caps w/Septa (100/pack)	25011	Ships in 1 business day

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

## **ANATEL TOC**

### **ANATEL TOC600**

The following CRMs are used for calibration and validation of the ANATEL TOC600 TOC analyzer.

System Suitability		
Sets - USP / EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 125 mL bottles. Replaces Cat.# 18036	48036	Ships in 1 business day

Calibration		
Kits	Cat.#	Availability
Calibration Standards Kit Includes (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, and (1) 0.75 mg/L C NIST Sucrose in 125 mL bottles. Replaces Cat.#19201	49201	Ships in 1 business day

Conductivity		
Kits	Cat.#	Availability
Conductivity Solution Kit Includes (1) 100 µS/cm Potassium Chloride (KCI) Solution in a 125 mL bottle. Replaces ANATEL FG5002601	02601	Ships in 1 business day

Validation		
Kits	Cat.#	Availability
Validation Control Kit Includes (1) Blank, and (1) 0.50 mg/L C NIST Sucrose in 125 mL bottles. Replaces Cat.#19221	49221	Ships in 1 business day
Validation Protocol Reagent Kit Includes (3) TOC600 Calibration Kits, (1) TOC600 100 µS/cm Conductivity Solution Kit, (2) TOC600 Validation Control Kits, and (4) TOC600 USP System Suitability Sets (all bottles are 125 mL). Replaces ANATEL FG5019231	19231	Ships in 5 business days

Consumables		
	Cat.#	Availability
Replacement UV Lamp Replaces ANATEL FG6002601	20036A	Ships in 1 business day

### ANATEL A-1000

The following CRMs are used for calibration and validation of the ANATEL A-1000 TOC analyzer.

System Suitability		
Sets - USP / EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 1000 mL HDPE bottles. Replaces Cat.# 19030	49030	Ships in 5 business days





**Learn more about Total Organic Carbon products** 

### **SIEVERS**

### Sievers 900, 5310 C, M9, and M5310 C



All of our Sievers Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

Contact Waters ERA at info@eraqc.com (USA) or ERA\_Europe\_Sales@waters.com (Europe) for availability of Sievers 800 and 400 consumables.

System Suitability		
Sets - USP / EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials.  Replaces Sievers CSTD 31004-01	18000	Ships in 1 business day
Sets - USP	Cat.#	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose, and (1) 8.0 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat.#	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials. Replaces Sievers CSTD 90039-01	18000J	Ships in 5 business days

Consumables		
	Cat.#	Availability
Replacement UV Lamp	20045	Ships in 1 business day
Replacement Pump Tubing	20060	Ships in 1 business day
Model 900/5310 C Resin Bed	20075	Ships in 1 business day
Service Kit for Sievers Model 900/5310C Annual Service Kit for Sievers Model 900/5310C includes Cat # 20075 (Replacement Resin Bed), Cat # 20045 (Relpacement UV Lamp), and Cat # 20060 (Replacement Pump Tubing).	20095	Ships in 1 business day
Phosphoric Acid Reagent Cartridge –150 mL*	21010	Ships in 5 business days
Phosphoric Acid Reagent Cartridge – 300 mL*	21001	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge – 150 mL	21015	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge – 300 mL	21006	Ships in 5 business days
40 mL Ultra-Low TOC Vials, 80/case	25025	Ships in 1 business day
60 Micron In-Line Stainless Filter	25035	Ships in 5 business days

<sup>\*</sup> Dangerous good. Requires special shipping.

Calibration & Validation		
Kits	Cat.#	Availability
Linearity Set Includes (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose and (1) 0.75 mg/L C NIST Sucrose in 40 mL vials.  Replaces CSTD 31012-01	19515	Ships in 5 business days
Calibration & Verification Set Includes (2) Blanks, (2) 1.0 mg/L IC NIST NaHCO <sub>3</sub> , (1) 1.0 mg/L C NIST KHP, and (1) 1.0 mg/L C NIST Sucrose in 40 mL vials. Replaces CSTD 90016-01	19600	Ships in 1 business day
Multi-Point Calibration Set Includes (1) Blank, (1) each of 1.0, 5.0, 10.0, 25.0 and 50.0 mg/L C NIST KHP, and (1) each of 1.0, 5.0, 10.0, 25.0 and 50.0 mg/L IC NIST NaHCO <sub>3</sub> in 40 mL vials. Replaces CSTD 90000-01	19610	Ships in 5 business days
Autoreagents Calibration Set Includes (1) Blank, (1) 25.0 mg/L C NIST KHP, (1) 25.0 mg/L IC NIST NaHCO <sub>3</sub> , and (1) 50.0 mg/L C from Nicotinamide in 40 mL vials  Replaces CSTD 90036-01	19611	Ships in 5 business days
Autoreagents Calibration & Verification Set Includes (2) Blanks, (1) 25.0 mg/L C NIST KHP, (1) 25.0 mg/L IC NIST NaHCO <sub>3</sub> , (1) 50.0 mg/L C from Nicotinamide, (1) 25.0 mg/L C NIST Sucrose, (1) 50.0 mg/L C NIST Sucrose, and (1) 50 mg/L IC NaHCO <sub>3</sub> in 40 mL vials.  Replaces CSTD 90028-01	19616	Ships in 5 business days
Specificity Verification Set Includes (1) Blank, (1) 0.50 mg/L C from Methanol, (1) 0.50 mg/L C from Nicotinamide, and (1) 0.50 mg/L C from KHP in 40 mL vials.	19615	Ships in 5 business days
Validation Set with Calibration & Verification Includes (28) 40 mL vials, (2) Blanks, (2) 1.0 mg/L C NIST KHP, (2) 1.0 mg/L IC NaHCO <sub>3</sub> ; (1) Blank, (1) 0.50 mg/L C NIST Sucrose, (1) 0.50 mg/L IC NaHCO <sub>3</sub> ; (2) Reagent Water Rw, (2) 0.50 mg/L C from USP Sucrose Rs and (2) 0.50 mg/L C from USP 1,4-Benzoquinone Rss; (1) Blank, (1) 0.25 mg/L C NIST Sucrose, (1) 0.50 mg/L C NIST Sucrose, (1) 0.75 mg/L C NIST Sucrose; (1) Reagent Water, (1) 0.50 mg/L C from USP Sucrose; (1) Blank; (1) 0.50 mg/L C from Methanol; (1) 0.50 mg/L C from Nicotinamide; (1) 0.50 mg/L C from NIST KHP; (1) Reagent Water Rw; (1) 0.50 mg/L C from USP Sucrose Rs; and (1) 0.50 mg/L C from USP 1,4-Benzoquinone Rss. Replaces Sievers CSTD90025	19617	Ships in 5 business days
Calibration Kit Includes (1) Blank, and (1) 1.0 mg/L IC NIST NaHCO <sub>3</sub> , (1) 1.0 mg/L C NIST KHP in 40 mL vials. Replaces CSTD 90001-01	19620	Ships in 1 business day

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

## **SIEVERS**

### Sievers 500 RL

The following CRMs are designed to use on Sievers 500 RL TOC instruments for calibration, validation, and to satisfy regulatory requirements.

Contact Waters ERA at info@eraqc.com (USA) or ERA\_Europe\_Sales@waters.com (Europe) for availability of Sievers 800 and 400 consumables.

System Suitability		
Sets - USP / EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials. Replaces Sievers CSTD 74403	15105	Ships in 1 business day
Sets - USP	Cat.#	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat.#	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials. Replaces Sievers CSTD 90039-01	18000J	Ships in 5 business days

Consumables		
	Cat.#	Availability
Replacement UV Lamp	20045	Ships in 1 business day
40 mL Ultra-Low TOC Vials, 80/case	25025	Ships in 1 business day
60 Micron In-Line Stainless Filter	25035	Ships in 5 business days

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Calibration & Validation RL (Standard IOS) Single-Use CRMs		
Kits	Cat.#	Availability
Single-Point Calibration Set Includes (2) Blanks, (1) 1.5 mg/L C NIST KHP in 40 mL glass vials, and (1) 25.0 μS/cm Conductivity standard in 30 mL HDPE vial. Replaces CSTD 74401	15100	Ships in 5 business days
Single-Point Calibration/Verification Kit Includes (2) Blanks, (1) 1.5 mg/L C NIST KHP in 40 mL glass vials, (1) 25.0 µS/cm Conductivity standard in 30 mL HDPE vial, (1) Verification Blank, (1) 0.50 mg/L C NIST Sucrose in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL HDPE vial.  **Replaces CSTD 74612**	15101	Ships in 5 business days
Accuracy/Precision/Verification Set Includes (1) Verification Blank, (1) 0.5 mg/L C NIST Sucrose in 40 mL glass vials, and (1) 25.0 µS/cm Conductivity standard in 30 mL HDPE vial.  Replaces CSTD 74402	15104	Ships in 5 business days
Linearity Set Includes (1) Linearity Blank, (1) each 0.25 mg/L, 0.50 mg/L, and 0.75 mg/L C NIST KHP in 40 mL glass vials. Replaces CSTD 74406	15106	Ships in 5 business days
Single-Point Calibration Set – TOC Only Includes (2) Calibration Blanks and (1) 1.5 mg/L C NIST KHP in 40 mL glass vials. Replaces CSTD 74405	15109	Ships in 5 business days
Accuracy/Precision/Verification Set – TOC Only Includes (1) Verification Blank and (1) 0.5 mg/L C NIST Sucrose in 40 mL glass vials. Conductivity standard is not included in this set. Replaces CSTD 74407	15110	Ships in 5 business days
Single-Point Calibration/Verification Set – TOC Only Includes (2) Blanks, (1) 1.5 mg/L C NIST KHP, (1) Verification Blank, and (1) 0.50 mg/L C NIST Sucrose in 40 mL glass vials. Conductivity standards are not included in this set. Replaces CSTD 74622	15111	Ships in 5 business days

## ANALYTIK JENA

All of our Analytik Jena Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Analytik Jena TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability		
Sets - USP/EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials. For use with AJ multi N/C pharma HS and IL550	18000	Ships in 1 business day
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials. For use with AJ multi N/C UV HS and IL500	18004	Ships in 1 business day
Sets - USP	Cat.#	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP	18061	Ships in 5 business days
Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.		business days
Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone	Cat.#	Availability
Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	Cat. #	,
Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.  Sets - JP  JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from		Availability Ships in 5

Calibration & Cleaning Validation		
Kits	Cat.#	Availability
Cleaning Validation Kit Includes (1) Calibration Blank, (1) each 0.25 mg/L, 0.50 mg/L, 0.75 mg/L, and 1.0 mg/L C NIST Sucrose in 40 mL vials.	19901	Ships in 5 business days
Full TOC Calibration Kit Includes (1) Calibration Blank, (1) each 1.0 mg/L, 2.50 mg/L, 5.0 mg/L, 10.0 mg/L, 25.0 mg/L, 50.0 mg/L, and 100 mg/L C NIST KHP in 250 mL amber glass bottles.	19970	Ships in 5 business days
Limited TOC Calibration Kit Includes (1) Calibration Blank and (1) 0.6 mg/L C NIST Sucrose in 250 mL amber glass bottles.	19985	Ships in 5 business days

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Anne Lang Customer Service Representative





**Dale Shallenberger** Senior Buyer

## OI ANALYTICAL

The Certified Reference Materials (CRMs) listed below are commonly purchased for use with OI Analytical TOC instruments, including the very popular Aurora® model. All Waters ERA Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on OI Analytical TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability		
Sets - USP/EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18004	Ships in 1 business day
Sets - USP	Cat.#	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat.#	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	18000J	Ships in 5 business days

(	Calibration & Validation		
ı	Kits	Cat.#	Availability
) (	Ultra Low-Level CRMs Kit Includes (3) Calibration Blanks, (1) each 0.050 mg/L, 0.060 mg/L, 0.070 mg/L, 0.080 mg/L, 0.090 mg/L, 0.10 mg/L, 0.25 mg/L, 0.50 mg/L, and 1.0 mg/L C NIST KHP in 40 mL vials.	14203	Ships in 5 business days
) ) ) 1	Validation Set - Aurora Includes (6) Water Blanks, (1) 0.50 mg/L C NIST KHP, (3) 1.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP, (1) 10.0 mg/L C NIST KHP, (1) 25.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP/50.0 mg/L IC NIST NaHCO <sub>3</sub> , (4) 0.50 mg/L C USP Sucrose, and (1) 0.50 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	19007	Ships in 5 business days
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Aurora is a registered trademark of Xylem, Incorporated.

Consumables		
Kits	Cat.#	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)*	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)*	21019	Ships in 5 business days

<sup>\*</sup>Dangerous goods.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.



**Paul Fabrizio** Systems Engineer

## SHIMADZU

Certified Reference Materials (CRMs) listed are commonly purchased for use with Shimadzu TOC instruments. *Please specify at time of order whether you have a chemical or combustion Shimadzu TOC*. All of our Shimadzu Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Shimadzu TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability		
Sets - USP/EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18000	Ships in 1 business day
Sets - USP	Cat.#	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat.#	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	18000J	Ships in 5 business days
Sets - Low-Level System Suitability	Cat.#	Availability
Low-Level System Suitability Set Includes (1) Reagent Water, (1) 0.30 mg/L C USP Sucrose, and (1) 0.30 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	18040	Ships in 5 business days

Calibration & Validation		
Kits	Cat.#	Availability
TOC-V and TOC-L Validation Kit Includes (1) Water Blank, and (2) 100.0 mg/L C NIST KHP in 125 mL amber glass bottles.	11002	Ships in 5 business days
TOC-V and TOC-L HS Validation Kit Includes (1) Water Blank, and (2) 10.0 mg/L C NIST KHP in 125 mL amber glass bottles.	11003	Ships in 5 business days
TOC-V and TOC-L Wet Chem Validation Kit Includes (3) Water Blanks, (2) 0.50 mg/L C NIST KHP, and (4) 1.0 mg/L C NIST KHP in 40 mL vials.	11004	Ships in 5 business days
TOC-V and TOC-L Multi Calibration Kit Includes (2) Calibration Blanks, (2) each 0.10 mg/L, 0.25 mg/L, 0.50 mg/L C NIST KHP, and (1) each 0.75 mg/L and 1.0 mg/L C NIST KHP in 40 mL vials.	11005	Ships in 5 business days

Consumables		
Kits	Cat.#	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)*	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)*	21019	Ships in 5 business days

<sup>\*</sup>Dangerous goods.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.



**Loretta Baca** Customer Service Representative

### TELEDYNE TEKMAR

All of our Teledyne Tekmar Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on Teledyne Tekmar TOC instruments for calibration, validation, and to satisfy regulatory requirements.

System Suitability		
Sets - USP/EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 40 mL vials.	18000	Ships in 1 business day
Sets - USP	Cat.#	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose Rs, and (1) 8.0 mg/L USP 1,4-Benzoquinone Rss in 40 mL vials.	18061	Ships in 5 business days
Sets - JP	Cat.#	Availability
JP System Suitability Set Includes (1) Reagent Water, and (1) 0.50 mg/L C from Sodium Dodecylbenzene Sulfonate in 40 mL vials.	18000J	Ships in 5 business days
Sets - Low-Level System Suitability	Cat.#	Availability
Low-Level System Suitability Set Includes (1) Reagent Water, (1) 0.30 mg/L C USP Sucrose, and (1) 0.30 mg/L C USP 1,4-Benzoquinone in 40 mL vials.	18040	Ships in 5 business days

Calibration & Validation		
Kits	Cat. #	Availability
Ultra Low-Level CRMs Kit Includes (3) Calibration Blanks, and (1) each 0.050 mg/L, 0.060 mg/L, 0.070 mg/L, 0.080 mg/L, 0.090 mg/L, 0.10 mg/L, 0.25 mg/L, 0.50 mg/L, and 1.0 mg/L C NIST KHP in 40 mL vials.	14203	Ships in 5 business days
Validation Set – Phoenix Includes (2) Water Blanks, (3) 0.50 mg/L C NIST KHP, (6) 1.0 mg/L C NIST KHP, (1) 2.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP, (1) 50.0 mg/L C NIST KHP, (1) 100 mg/L IC NIST NaHCO <sub>3</sub> , (1) Reagent Water Rw, (1) 0.50 mg/L C USP Sucrose Rs, and (1) 0.50 mg/L C USP 1,4-Benzoquinone Rss in 40 mL vials.	19002	Ships in 5 business days
Validation Set – Phoenix Includes (5) Water Blanks, (1) 0.50 mg/L C NIST KHP, (5) 1.0 mg/L C NIST KHP, (1) 5.0 mg/L C NIST KHP, (1) 50.0 mg/L C NIST KHP, (1) 1.0 mg/L IC NIST NaHCO <sub>3</sub> , (1) Reagent Water Rw, (1) 0.50 mg/L C USP Sucrose Rs, and (1) 0.50 mg/L C USP 1,4-Benzoquinone Rss in 40 mL vials.	19003	Ships in 5 business days
Validation Set – Fusion Includes 15 x 40 mL vials & 2 125 mL bottles: (4) TOC Blank, (3) 1.00 mg C/L NIST KHP, (1) 10.0 mg C/L NIST KHP, (1) 25.0 mg IC/L NaHCO <sub>3</sub> , (1) Reagent Water Rw, (1) 0.500 mg/L C from USP Sucrose Rs, (1) 0.500 mg/L C from USP 1,4-Benzoquinone Rss, (1) Reagent Water Rw, (1) 8.0 mg/L C from USP Sucrose Rs, (1) 8.0 mg/L C from USP 1,4-Benzoquinone Rss, (1) 10.0 mg C/L NIST KHP - 125 mL, (1) 5.00 mg C/L NIST KHP - 125 mL	19004	Ships in 5 business days

Consumables		
Reagents	Cat.#	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)	21019	Ships in 5 business days

<sup>\*</sup>Dangerous goods.

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

Waters ERA is making the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

Phoenix and Fusion are registered trademarks of Teledyne Technologies Incorporated.

## OTHER TOC INSTRUMENTS

All of our Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation.

The following CRMs are designed to use on various brands of TOC instruments for calibration and to satisfy regulatory requirements.

If you do not see your brand of TOC instrument listed below, please contact us for availability.

#### **Swan Analytical and Comet Analytics**

System Suitability		
Sets - USP/EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 250 mL HDPE containers.	18055	Ships in 5 business days
Sets - USP	Cat.#	Availability
USP Sterile Water System Suitability Set Includes (1) Reagent Water Rw, (1) 8.0 mg/L C USP Sucrose, and (1) 8.0 mg/L USP 1,4-Benzoquinone in 250 mL HDPE containers.	18056	Ships in 5 business days
Sets - Low-Level System Suitability	Cat.#	Availability
Low-Level System Suitability Set Includes (1) Reagent Water, (1) 0.30 mg/L C USP Sucrose, and (1) 0.30 mg/L C USP 1,4-Benzoquinone in 250 mL HDPE containers.	18059	Ships in 5 business days

Calibration & Other		
Kits	Cat.#	Availability
Swan Calibration Kit Includes (1) Calibration Blank and (1) 1.0 mg/L C NIST Sucrose in 250 mL HDPE containers.	10035S	Ships in 5 business days
Swan Function Test Kit Includes (1) 20.0 mg/L C Sucrose and (1) 20.0 mg/L C 1,4-Benzoquinone in 125 mL HDPE containers.	19700	Ships in 5 business days

Calibration		
Kits	Cat.#	Availability
Calibration Kit Includes (1) Calibration Blank and (1) each 0.25 mg/L, 0.50 mg/L, and 0.75 mg/L C NIST Sucrose in 60 mL HDPE containers.	19202	Ships in 1 business day

#### MembraPure

System Suitability		
Sets - USP/EP	Cat.#	Availability
USP/EP Bulk Water System Suitability Set Includes (1) Reagent Water Rw, (1) 0.5 mg/L C USP Sucrose, and (1) 0.5 mg/L USP 1,4-Benzoquinone in 500 mL HDPE containers.	18140	Ships in 5 business days
Individual - USP Sterile Water (500 mL HDPE Container)	Cat.#	Availability
USP Reagent Water (Rw)	18144	Ships in 5 business days
8.0 mg/L C USP Sucrose (Rs)	18147	Ships in 5 business days
8.0 mg/L C USP 1,4-Benzoquinone (Rss)	18148	Ships in 5 business days

Calibration		
Individual Standards (500 mL HDPE Container)	Cat.#	Availability
Calibration Blank	10110	Ships in 1 business day
0.5 mg/L C NIST Sucrose	10710	Ships in 1 business day

Individual set/kit components and/or bulk sizes may be available for the TOC and Conductivity standards. Please contact your Waters ERA sales representative if you have questions about any products that are not listed in this publication.

## **CONSUMABLES**

Ever wonder what the USP means by: "Use labware and containers that have been scrupulously cleaned of organic residues"?

Just like the USP, we demand scrupulously cleaned vials for our TOC standards. All of our vials, whether glass or polymer, represent the most consistently clean sample vials available anywhere. They are the perfect vial for your purified water (PW) or water for injection (WFI) sample analysis.

We offer consumable products for various TOC instruments as detailed below.

Vials and Bottles		
	Cat.#	Availability
40mL Ultra-Low TOC Glass Vials (80/case)	25025	Ships in 1 business day
60 mL Low TOC HDPE Bottle - Natural (50/case)	25056	Ships in 1 business day

#### **UV Lamps**

Replacement UV Lamps for ANATEL and Sievers models.

	Cat.#	Availability
ANATEL A643/TOC600	20036A	Ships in 1 business day
ANATEL PAT700	20037	Ships in 1 business day
Sievers 400/800	20040	Ships in 1 business day
Sievers 500/900	20045	Ships in 1 business day

Reagent Cartridges for Sievers		
	Cat.#	Availability
Phosphoric Acid Reagent Cartridge for Sievers 800/900 (150 mL)*	21000	Ships in 5 business days
Phosphoric Acid Reagent Cartridge for Sievers 800/900 (300 mL)*	21001	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge for Sievers 800/900 (150 mL)	21005	Ships in 5 business days
Persulfate Oxidizer Reagent Cartridge for Sievers 800/900 (300 mL)	21006	Ships in 5 business days
Sievers Ion Exchange Resin Bed	20075	Ships in 1 business day
Sievers 900 Service Kit Includes resin bed, UV lamp and replacement tubing.	20095	Ships in 1 business day

<sup>\*</sup>Dangerous goods.

Reagents		
	Cat.#	Availability
Phosphoric Acid Reagent (1 Liter)*	21016	Ships in 5 business days
Phosphoric Acid Reagent (2 Liter)*	21018	Ships in 5 business days
Persulfate Oxidizer Reagent (1 Liter)*	21017	Ships in 5 business days
Persulfate Oxidizer Reagent (2 Liter)*	21019	Ships in 5 business days

<sup>\*</sup>Dangerous goods.

#### **Tubing**

Replacement Pump Tubing for Sievers models.

	Cat.#	Availability
Sievers 400	20055	Ships in 1 business day
Sievers 800	20050	Ships in 1 business day
Sievers 900	20060	Ships in 1 business day

Filters		
	Cat.#	Availability
60 Micron In-Line Stainless Filter	25035	Ships in 5 business days
Fan Filter for Sievers 800	25040	Ships in 5 business days



Learn more about Consumables

## **CLEANING VALIDATION**

Waters ERA is the premier manufacturer of specialty cleaning validation products – coupons, certified clean sample vials and swabs for swab recovery studies as well as kits that can be customized to suit your laboratory, analyst and validation needs.

Sampling Kit with Vial and Swab		
	Cat.#	Availability
Vial and Swab Sampling Kit – Small Includes (20) certified clean swabs and (10) certified clean vials.	CV10000TX	Ships in 5 business days
Vial and Swab Sampling Kit – Large Includes (160) certified clean swabs and (80) certified clean vials.	CV10005TX	Ships in 5 business days

#### **Swabbing Templates**

Pre-cleaned Teflon\* square swabbing templates are a simple way to ensure accuracy and precision in your cleaning validation sampling. Each pack comes with a Certificate of Analysis for residual HPLC and TOC levels. Swabbing templates can be custom made to your needs. Stainless steel templates are available upon request. Call for pricing, availability, and custom sizing.

	Cat.#	Availability
16 cm² (25/pack)	30028	Call for delivery
25 cm² (25/pack)	30029	Call for delivery
100 cm² (25/pack)	30032	Call for delivery

#### **Swabs**

Large polyester swabs with snap-off head for ultra-low interference levels.

	Cat.#	Availability
TOC Swabs (< 50.0 ppb TOC) Includes (20) swabs (1 total bag)	30033TX	Ships in 5 business days
TOC Swabs (< 50.0 ppb TOC) Includes (100) swabs (20/bag, 5 total bags)	30031TX	Ships in 5 business days
HPLC Swabs (Abs 254: 0.1 au max) Includes (100) swabs (50/bag, 2 total bags)	30030	Ships in 5 business days

#### **Custom Coupons**

Waters ERA can accommodate your custom requests for coupons of just about any size, shape or material. Please use the general catalog numbers below and provide the information at the bottom to your customer service representative.

	Cat.#	Availability
Polymer	30024	Call for delivery
Metal	30025	Call for delivery
Glass	30027	Call for delivery

Call 800.372.0122 or 303.431.8454 for a quote on your custom coupon needs in the U.S. Contact your sales partner or e-mail your inquiry to ERA\_Europe\_Sales@waters.com in Ireland. Please have the following information available:

Material Metal, plastic, rubber, or glass type (stainless steel, polyethylene, etc.).

Grade Specific grade of material (i.e., 316 stainless, HDPE or borosilicate glass).

Finish Arguably the most important factor for metals. The finish refers to the surface roughness

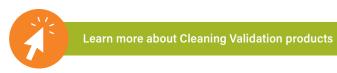
and is generally stated in units of "Ra". It is most often measured using a profilometer.

Coating Some materials can be coated to offer desirable surface properties.

Etching Some materials can be etched with serial numbers, swabbing areas or other information.

Dimensions Size and shape of the coupon.

Quantity The quantity of coupons needed.



### REFERENCE STANDARDS

### Inorganic Carbon

All of Waters ERA's Certified Reference Materials (CRMs) are prepared using carefully controlled processes that are scrutinized under Waters ERA's ISO 17034 accreditation. Inorganic Carbon (IC) is derived from non-living sources and it exists in pharmaceutical waters as carbonate, bicarbonate, and dissolved carbon dioxide (CO<sub>2</sub>). Whether your instrument quantifies IC as part of a differential calculation or removes it as part of a "non-purgeable" method of TOC determination, your instrument's ability to remove and/or measure IC must be validated. Below are the most commonly requested IC concentrations for calibration and validation of TOC instrumentation.

Individual CRMs for Inorganic Carbon			
	Volume	Cat.#	Availability
0.5 mg/L IC from NIST NaHCO <sub>3</sub>	40 mL	15990	Ships in 1 business day
1.0 mg/L IC from NIST NaHCO <sub>3</sub>	40 mL	16000	Ships in 1 business day
5.0 mg/L IC from NIST NaHCO <sub>3</sub>	40 mL	16300	Ships in 1 business day
10.0 mg/L IC from NIST NaHCO <sub>3</sub>	40 mL	16600	Ships in 1 business day
25.0 mg/L IC from NIST NaHCO <sub>3</sub>	40 mL	16900	Ships in 1 business day
50.0 mg/L IC from NIST NaHCO <sub>3</sub>	40 mL	17130	Ships in 1 business day

Bulk sizes may be available for the Inorganic Carbon standards. Please contact your sales representative if you have questions about any products that are not listed in this publication.

We make the most commonly requested products available within 24 hours of order receipt to consistently meet your product needs. Products that are less frequently requested will be shipped within five business days of order receipt. Please check your order confirmation for the specific ship date.

### **Turbidity**

Turbidity products are designed specifically for pharmaceutical turbidimetric validation, calibration and monitoring applications including performing particle content/concentration testing, monitoring for fermentation progress, or filter break monitoring.

Custom turbidity products are available if you need a standard. Please contact us to inquire about custom turbidity reference materials.

### REFERENCE STANDARDS

### High-Purity Water

Certified Low-TOC Water suitable for use with your TOC or liquid chromatography system. All of our waters are prepared with the highest level of care throughout the Ion-Exchange-Filtration-RO-UV purification process. Our water must pass a rigorous testing scheme and we guarantee the analysis of each bottle as well as your satisfaction.

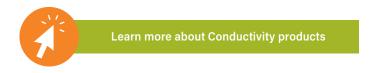
USP Purified - Certified Low-TOC Water		
	Cat.#	Availability
USP Purified Low-TOC Water – 4 Liter	PW10000	Ships in 5 business days
USP Purified Low-TOC Water – 4 x 4 Liter Case	PW10005	Ships in 5 business days

### pH Buffers

Three color-coded pH Buffers that are prepared under our ISO 17034 accreditation. The buffers are mercury free, guaranteed stable for one year, and they are analytically traceable to NIST Standard Reference Materials (SRMs). Waters ERA pH Buffers are designed for routine calibration and/or verification of pH meters and they are supplied with a full certificate of analysis.

pH Buffer Products in 500 mL HDPE Containers		
	Cat.#	Availability
pH 4 (Red) 1 Bottle	127	Ships in 1 business day
pH 4 (Red) Case of 6 Bottles	128	Ships in 1 business day
pH 7 (Yellow) 1 Bottle	131	Ships in 1 business day
pH 7 (Yellow) Case of 6 Bottles	132	Ships in 1 business day
pH 10 (Blue) 1 Bottle	135	Ships in 1 business day
pH 10 (Blue) Case of 6 Bottles	136	Ships in 1 business day
(2) Each of pH 4, pH 7, and pH 10	141	Ships in 1 business day

For other pH buffers please contact us at 800.372.0122 and inquire about our custom pH buffers or our line of environmental reagents.



## CONDUCTIVITY

Conductivity solutions and kits that support accurate, verifiable, and approved approaches to validating/verifying your conductivity sensors. Whether you are validating detection limits, determining accuracy and precision, or constructing a low-level linearity curve, Waters ERA has the conductivity products and services to support your efforts.

All Waters ERA Conductivity standards are manufactured in a water matrix , and are scrutinized under Waters ERA's ISO 17034 accreditation.

Conductivity Kits		
	Cat.#	Availability
Conductivity Validation Kit – Multiple Use Includes (1) 25 µS/cm, (1) 100 µS/cm, (1) 146.93 µS/cm (Solution D), and (1) Reagent Blank for use with Solution D in 500 mL HDPE bottles.	02900	Ships in 5 business days
Solution 25 Test Kit Includes (1) 25 µS/cm standard in a 500 mL HDPE bottle and (5) pre-cleaned 125 mL HDPE wide-mouth bottles.	01100	Ships in 1 business day
Solution 25 Test Kit Includes (1) 25 µS/cm standard in a 1 Liter HDPE bottle and (5) pre-cleaned 125 mL HDPE wide-mouth bottles.	01001	Ships in 1 business day

#### **Low-Level Conductivity (in HDPE bottles)**

Our Low-Level conductivity is an excellent verification solution once you have calibrated your system using our ASTM Solution D.

	Cat.#	Availability
25 μS/cm (500 mL)	01300	Ships in 5 business days
25 μS/cm (1 Liter)	01200	Ships in 5 business days

#### Mid-Level Conductivity (in HDPE bottles)

Manufactured using NIST traceable materials and certified. This potassium chloride (KCI) solution is an excellent calibration or calibration verification solution. This solution is certified by analysis and it does not require the use of a reference blank for accurate calibration or validation.

	Cat.#	Availability
100 μS/cm (125 mL)	02600	Ships in 5 business days
100 μS/cm (250 mL)	02250	Ships in 5 business days
100 μS/cm in (500 mL)	02500	Ships in 5 business days
100 μS/cm (1 Liter)	02400	Ships in 5 business days

### Mid-Level Conductivity ASTM Solution D (in HDPE bottles)

ASTM Solution D is the lowest level solution that can be made following a NIST protocol for conductivity solution preparations. This standard makes an excellent calibration or verification solution together with our 25  $\mu$ S/cm solution. All Solution D products include an associated Reference Blank.

	Cat.#	Availability
Solution D at 146.93 μS/cm (1 Liter)	01700	Ships in 5 business days
Solution D at 146.93 µS/cm (500 mL)	01800	Ships in 5 business days
Solution D at 146.93 μS/cm (125 mL)	01900	Ships in 5 business days
Solution D Test Kit (1 Liter) Includes (1) Solution D, (1) Reference Blank, and (20) pre-cleaned 125 mL wide-mouth HDPE containers.	01500	Ships in 5 business days
Solution D Test Kit (500 mL) Includes (1) Solution D, (1) Reference Blank, and (10) pre-cleaned 125 mL wide-mouth HDPE containers.	01600	Ships in 5 business days

# CONDUCTIVITY (continued)

#### **High-Level Conductivity (in HDPE bottles)**

ASTM Solutions C and D are prepared prescriptively from KCl and offer superior accuracy at mid- to high-levels for conductivity sensor validation and verification.

	Cat.#	Availability
ASTM Solution C at 1408.8 µS/cm (125 mL)	01610	Ships in 5 business days
ASTM Solution C at 1408.8 µS/cm (1 Liter)	01620	Ships in 5 business days
1000 μS/cm (125 mL)	01410	Ships in 5 business days
1000 μS/cm (500 mL)	01420	Ships in 5 business days
1000 μS/cm (1 Liter)	01430	Ships in 5 business days
10,000 μS/cm (125 mL)	01630	Ships in 5 business days
10,000 μS/cm (1 Liter)	01640	Ships in 5 business days
100,000 μS/cm (125 mL)	01650	Ships in 5 business days
100,000 μS/cm (500 mL)	01655	Ships in 5 business days
100,000 μS/cm (1 Liter)	01660	Ships in 5 business days
200,000 μS/cm (125 mL)	01661	Ships in 5 business days
200,000 μS/cm (500 mL)	01662	Ships in 5 business days
300,000 μS/cm (125 mL)*	01663	Ships in 5 business days
300,000 μS/cm (500 mL)*	01664	Ships in 5 business days
400,000 μS/cm (125 mL)*	01665	Ships in 5 business days
400,000 μS/cm (500 mL)*	01666	Ships in 5 business days
500,000 μS/cm (125 mL)*	01667	Ships in 5 business days
500,000 μS/cm (500 mL)*	01668	Ships in 5 business days

<sup>\*</sup>Dangerous goods.

