

## Thermo Scientific Orion AQ4000 Colorimeter

The most advanced microprocessor-based LED colorimeter on the market today!

The AQ4000 colorimeter stores up to 189 pre-programmed methods and can record 100 data points in the field with a time and date stamp. Download later to a printer or computer in the lab.

The AQ4000 colorimeter takes all the guesswork out of sample preparation with the Auto-Test™ ampoules and the exclusive Auto-ID™ feature.

Quality of the measurement is assured since the ampoules are only opened when a measurement is about to be taken.

- **Auto-ID:** Automatically identifies the species to be measured, selects the method and the wavelength plus initiates the method – no buttons to push!
- **Auto-Test Ampoules:** Pre-measured liquid reagent ampoules are specially designed to work with the AQ4000

### Selection of Display Units is Push-Button Easy

Choose from concentration, absorbance or percent transmittance. The AQ4000 accepts round vials with diameters of 13, 16 or 24 mm. Best of all, the AQ4000 carries a full two year warranty.

### Use the AQ4000 with Our Tablets or Powders

- **Tablets:** Quick dissolve tablets that are easy to add to the sample. Tablets can be used with the AQUAfast II series and AQ4000 colorimeters.
- **Powders:** Pre-measured and ready-to-use packets. Just add the packet to the sample, allow it to dissolve and then take your measurement. Many reagents meet regulatory requirements.
- **COD Reagents:** Available in three measurement ranges – low, mid and high range.

### Updating the AQ4000 with New Methods is Simple

The latest software updates are available at [www.thermoscientific.com/water](http://www.thermoscientific.com/water). A simple download procedure updates the colorimeter with the most current programs in a few quick, easy steps.

See pages 124 and 125 for reagent chemistries that you can use with the AQ4000 colorimeter.

### AQ4000 Colorimeter and Accessories

Cat. No.	Description
AQ4000	Orion IV colorimeter only (order reagents separately)
AQ40FK	Replacement field case to carry AQ4000 meter, accessories and reagents
AQ4CBL	RS232 cable for data download and software updates
AQ4ZER	AQUAfast zero kit
AC2V16	16 mm vials, 10 pack
AC2V24	24 mm vials, 12 pack

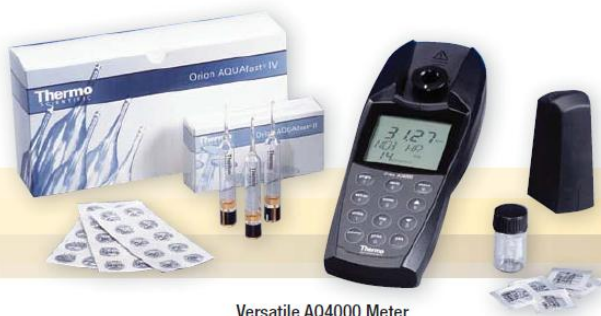
### AQII Series Accessories

Cat. No.	Description
AC2V16	16 mm replacement vials, 10 pack
AC2V24	24 mm replacement vials, 12 pack
AC2T24	24 mm replacement turbidity vials, 12 pack
AC2073	⚠ Chlorine secondary reference standards kit for AQ2070



Signifies a hazardous solution.  
See terms and conditions for important shipping information at [www.thermoscientific.com/water](http://www.thermoscientific.com/water)

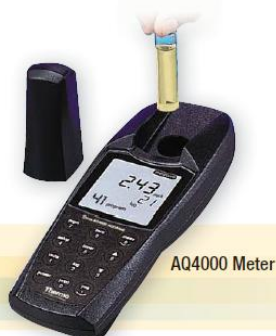
Easily create and store your own calibration curve for up to 10 new tests in the meter.



Versatile AQ4000 Meter

## Thermo Scientific Orion COD Test Systems

COD testing correlated to BOD readings can save time and money



AQ4000 Meter

The AQ4000 and AQ3700 colorimeters support additional tests, including chlorine, nitrite and ammonia (see pages 123-125).

- Ideal for environmental and wastewater monitoring with EPA accepted methods
- Three ranges of COD reagents
- COD reactor can digest up to 25 samples simultaneously in 2 hours or less and meet fast COD temperature requirements
- Works with the new AQ3700 multiparameter colorimeter or the AQ4000 advanced colorimeter

Just add the sample to the COD vial, digest sample in the reactor and read results with your Orion colorimeter.

### The AQ4000 and AQ3700 Colorimeters Offer:

- Pre-programmed methods for water quality testing
- Multiple wavelength and more test options
- Datalogging and GLP features
- Bidirectional RS232 interface on AQ4000
- IR Interface on AQ3700 (IRDA required)
- Compatibility with 13, 16 and 24 mm diameter vials
- IP67 waterproof housing
- 2 year warranty

Please visit [www.thermoscientific.com/water](http://www.thermoscientific.com/water) for more product, methods information and method approval letters from EPA.

### Select One Meter

Cat. No.	Description
AQ4000	Orion AQ4000 advanced colorimeter with COD
AQ3700	Orion AQ3700 colorimeter with COD, total nitrogen and total phosphate

### Order Digester

Cat. No.	Description
COD165	Orion thermoreactor for digestion methods to 165 °C

### Select Your Test Reagents by Range and Quantity

Cat. No.	Range	No. of Vials	EPA Approved
CODL00	0 to 150 ppm	25	Yes
CODH00	0 to 1500 ppm	25	Yes
CODHP0	0 to 15000 ppm	25	No requirement

### Select a Standard

Cat. No.	Description
CODS01	AQUAfast 1000 ppm COD standard, 475 mL
CODS10	AQUAfast 10000 ppm COD standard, 475 mL



COD Reactor,  
Test Reagents and Standards  
with AQ4000 Meter



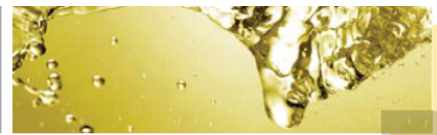
## Thermo Scientific Orion AQUAfast Colorimeter Reagent Chemistries



### Colour Codes

Tablet Liquid Powder Auto-Test Ampoule

Parameter	Reagent Type	Catalog Number	Description	Range	Method	Number of Tests	Meter Models	EPA Approved Methods
<b>Alkalinity-m</b>	Tablet	AC2002	AQUAfast II alkalinity-m	5.0 - 200 mg/L	Acid/Indicator	100	AQ4000, AQ3700, AQ2001	–
<b>Aluminum</b>	Auto-Test Ampoule	AC4027	AQUAfast IV aluminum	0.04 - 0.25 mg/L	Eriochrome cyanine R	30	AQ4000	WW equivalent
	Tablet	AC2027	AQUAfast II aluminum	0.05 - 0.30 mg/L	Eriochrome cyanine R	50	AQ4000, AQ3700, AQ2005, AQ2020	WW equivalent
<b>Ammonia (Nitrogen)</b>	Powder	AC4P12	AQUAfast ammonia-nitrogen, powder	0.1 - 0.50 mg/L	Salicylate	100	AQ4000, AQ3700	–
	Auto-Test Ampoule	AC4010	AQUAfast IV ammonia (ultra low range)	0.10 - 3.0 mg/L	Salicylate	30	AQ4000	–
	Auto-Test Ampoule	AC4012	AQUAfast IV ammonia (low range)	0.5 - 7.0 mg/L	Nesslerization	30	AQ4000	WW equivalent
	Auto-Test Ampoule	AC4011	AQUAfast IV ammonia (high range)	1.0 - 14 mg/L	Nesslerization	30	AQ4000	WW equivalent
	Tablet	AC2012	AQUAfast II ammonia, as nitrogen	0.05 - 1.0 mg/L; 0.5 - 10.0 mg/L	Indophenole/phenate	50	AQ4000, AQ3700, AQ2004	WW equivalent
<b>Bromine</b>	Tablet	AC2035	AQUAfast II bromine	0.1 - 13.5 mg/L	DDPD	100	AQ3700, AQ2005	No requirement
<b>Chloride</b>	Auto-Test Ampoule	AC4017	AQUAfast IV chloride	2.0 - 40 mg/L	Mercuric nitrate	30	AQ4000	–
	Tablet	AC2017	AQUAfast II chloride	0.5 - 25 mg/L	Silver nitrate/turbidity	50	AQ4000, AQ3700, AQ2005	–
<b>Chlorine Dioxide</b>	Auto-Test Ampoule	AC4099	AQUAfast IV chlorine dioxide	0.80 - 12 mg/L	DPD	30	AQ4000	No requirement
	Tablet	AC2099	AQUAfast II chlorine dioxide	0.04 - 2.8 mg/L	DPD	100	AQ4000, AQ3070, AQ3700, AQ2020	No requirement
<b>Chlorine</b>	Powder	AC4P71	AQUAfast chlorine, free, DPD, powder packets, EPA-approved method	0.03 - 2.00 mg/L	DPD	100	AQ4000, AQ3070, AQ3700	DW
	Powder	AC4P71B	AQUAfast chlorine, free, powder packets bulk packaging, EPA-approved method	0.03 - 2.00 mg/L	DPD	1000	AQ4000, AQ3070, AQ3700	DW
	Tablet	AC2071	AQUAfast II chlorine, DPD, free only	0.05 - 6.0 mg/L	DPD	100	AQ4000, AQ3070, AQ3700	–
	Auto-Test Ampoule	AC4070	AQUAfast IV chlorine, free and total, EPA-approved method	0.05 - 6.0 mg/L	DPD	30	AQ4000	DW
	Tablet	AC2070	AQUAfast II chlorine, free and total	0.05 - 6.0 mg/L	DPD	50 each	AQ4000, AQ3700, AQ2070, AQ2020	–
	Powder	AC4P72	AQUAfast chlorine, total, DPD, powder packets, EPA-approved method	0.03 - 2.00 mg/L	DPD	100	AQ4000, AQ3070, AQ3700	DW & VWV
	Powder	AC4P72B	AQUAfast chlorine, total, powder packets bulk packaging, EPA-approved method	0.03 - 2.00 mg/L	DPD	1000	AQ4000, AQ3070, AQ3700	DW & VWV
	Tablet	AC2072	AQUAfast II chlorine, total, EPA-approved method	0.05 - 6.0 mg/L	DPD	50	AQ4000, AQ3700, AQ2070	DW & VWV
<b>Copper</b>	Powder	AC4P29	AQUAfast copper, bicinchoninate, powder	0.05 - 5.00 mg/L	Bicinchoninate	100	AQ4000, AQ3700	WW equivalent
	Auto-Test Ampoule	AC4029	AQUAfast IV copper (soluble)	0.5 - 12 mg/L	Bathocuproine	30	AQ4000	WW equivalent
	Tablet	AC2065	AQUAfast II zinc/copper	0.02 - 1.0 mg/L	Zincon	50	AQ4000, AQ3700, AQ2002	–
	Tablet	AC2029	AQUAfast II copper	0.05 - 5.0 mg/L	Biquinoline	50	AQ4000, AQ3700, AQ2005	–
<b>Cyanide</b>	Auto-Test Ampoule	AC4006	AQUAfast IV cyanide (free)	0.20 - 0.50 mg/L	Pyridine-barbituric acid	30	AQ4000, AQ3700	ETV verified, DW & VWV equivalent
<b>Cyanuric Acid</b>	Tablet	AC2098	AQUAfast II cyanuric acid	5 - 90 mg/L	Melamine	100	AQ3070, AQ3700, AQ2003	–
<b>Fluoride</b>	Liquid	AC2009	AQUAfast II fluoride SPADNS kit, EPA-approved method	0.05 - 2.0 mg/L	SPADNS	50	AQ4000, AQ3700, AQ2009, AQ2020	DW & VWV
<b>Hydrazine</b>	Tablet	AC2030	AQUAfast II hydrazine kit	0.05 - 0.50 mg/L	Dimethylamino-benzaldehyde	100	AQ4000, AQ3700, AQ2003	No requirement



Parameter	Reagent Type	Catalog Number	Description	Range	Method	Number of Tests	Meter Models	EPA Approved Methods
Iron	Powder	AC4P79	AQUAfast iron total TPTZ, powder	0 - 1.80 mg/L	TPTZ	100	AQ4000, AQ3700	–
	Powder	AC4P78	AQUAfast iron total ferro, powder	0 - 3.00 mg/L	1,10 Phenanthroline	100	AQ4000, AQ3700	WW equivalent
	Auto-Test Ampoule	AC4078	AQUAfast IV iron 1 (total & soluble)	0.45 - 7.0 mg/L	1,10 Phenanthroline	30	AQ4000	WW equivalent
	Tablet	AC2078	AQUAfast II iron	0.02 - 1.0 mg/L; 0.2 - 10 mg/L	TPTZ	100	AQ4000, AQ3700, AQ2005	–
Manganese	Powder	AC4P55	AQUAfast manganese HR, powder	0.2 - 20.0 mg/L	Periodate oxidation	100	AQ4000, AQ3700	WW equivalent
	Auto-Test Ampoule	AC4055	AQUAfast IV manganese	1.0 - 30 mg/L	Periodate oxidation	30	AQ4000, AQ3700	WW equivalent
	Tablet	AC2055	AQUAfast II manganese	0.05 - 4 mg/L	Formaloxime	50	AQ4000, AQ3700, AQ2003	–
Molybdate	Powder	AC4P42	AQUAfast molybdenum, molybdate, HR, powder	0 - 40.0 mg/L	Mercaptoacetic acid	100	AQ4000, AQ3700	–
Nitrate	Auto-Test Ampoule	AC4007	AQUAfast IV nitrate 3 (as NO <sub>3</sub> )	5.0 - 50 mg/L	Cadmium reduction	30	AQ4000	DW & WW equivalent
	Auto-Test Ampoule	AC4005	AQUAfast IV nitrate 2 (as N)	0.40 - 3.0 mg/L	Cadmium reduction	30	AQ4000	DW & WW equivalent
	Auto-Test Ampoule	AC4004	AQUAfast IV nitrate (as N) LR	0.20 - 1.5 mg/L	Cadmium reduction	30	AQ4000	DW & WW equivalent
	Tablet	AC2007	AQUAfast II nitrate	1 - 40 mg/L	Zinc reduction	50	AQ4000, AQ3700, AQ2007	–
Nitrite	Powder	AC4P46	AQUAfast nitrite LR, powder	0 - 0.350 mg/L	Diazotization (Azo)	100	AQ4000, AQ3700	DW & WW equivalent
	Auto-Test Ampoule	AC4046	AQUAfast IV nitrite	0.080 - 0.80 mg/L	Diazotization (Azo)	30	AQ4000	DW & WW equivalent
	Tablet	AC2046	AQUAfast II nitrite, EPA-approved method	0.05 - 0.50 mg/L	Diazotization (Azo)	100	AQ4000, AQ3700, AQ2046	DW & WW
Oxygen	Auto-Test Ampoule	AC4008	AQUAfast IV oxygen	2.0 - 15 mg/L	Azo dye	30	AQ4000	–
Ozone	Auto-Test Ampoule	AC4048	AQUAfast IV ozone	0.20 - 2.5 mg/L	DDPD	30	AQ4000	–
	Tablet	AC2048	AQUAfast II ozone	0.05 - 0.5 mg/L	DDPD/glycine	100	AQ3700, AQ2001	–
pH	Liquid	AC3001	AQUAfast II pH, dropper bottle	5.9 - 8.2	Phenol red	30	AQ3070, AQ3700	–
	Tablet	AC2001	AQUAfast II pH	6.5 - 8.4	Phenol red	100	AQ4000, AQ3700, AQ2001	–
Phosphate	Powder	AC4P95	AQUAfast phosphorus 3, powder	0.07 - 2.5 mg/L	Phosphomolybdic blue/ascorbic acid	100	AQ4000, AQ3700	DW & WW equivalent
	Auto-Test Ampoule	AC4095	AQUAfast IV phosphate 2-LR	0.75 - 8.0 mg/L	Stannous chloride	30	AQ4000, AQ3700	–
	Tablet	AC2096	AQUAfast II phosphorus HR	10 - 100 mg/L	Phosphomolybdic blue/ascorbic acid	50	AQ4000, AQ3700, AQ2003	DW & WW equivalent
	Tablet	AC2095	AQUAfast II phosphorus LR, EPA approval method	0.05 - 4.0 mg/L	Vanado molybdate	50	AQ4000, AQ3700, AQ2004	DW & WW
Silica	Powder	AC4P60	AQUAfast silica HR, powder packets	1.0 - 75.0 mg/L	Silicomolybdate	100	AQ4000, AQ3700	DW & WW equivalent
	Auto-Test Ampoule	AC4060	AQUAfast IV silica	1.0 - 14 mg/L	Heteropoly blue	30	AQ4000	DW equivalent
	Powder	AC2061	AQUAfast II silica phosphate removal	NA	NA	100	AQ4000, AQ3700, AQ2002	–
	Tablet	AC2060	AQUAfast II silica	0.05 - 4.0 mg/L	Silicomolybdate	50	AQ4000, AQ3700, AQ2002	DW & WW equivalent
Sulfate	Powder	AC4P82	AQUAfast sulfate 4, powder packets	2 - 70 mg/L	Barium sulfate/turbidity	100	AQ4000, AQ3700	DW & WW equivalent
	Auto-Test Ampoule	AC4082	AQUAfast IV sulfate	8.0 - 100 mg/L	Barium sulfate/turbidity	30	AQ4000	DW & WW equivalent
	Tablet	AC2082	AQUAfast II sulfate	5 - 200 mg/L	Barium sulfate/turbidity	100	AQ4000, AQ3700, AQ2005	DW & WW equivalent
Sulfide	Auto-Test Ampoule	AC4016	AQUAfast IV sulfide (soluble)	0.3 - 3.0 mg/L	Methylene blue	30	AQ4000	WW equivalent
	Tablet	AC2016	AQUAfast II sulfide	0.05 - 0.50 mg/L	Methylene blue	50	AQ4000, AQ3700, AQ2004	WW equivalent
Zinc	Auto-Test Ampoule	AC4065	AQUAfast IV zinc	0.30 - 3.0 mg/L	Zincon	30	AQ4000	WW equivalent
	Tablet	AC2065	AQUAfast IV zinc/copper	0.02 - 1.0 mg/L	Zincon	50	AQ4000, AQ3700, AQ2002	WW equivalent