

# Ion-Selective Electrodes and Solution Kits

## Ion-Selective Electrodes

Oakton has a large selection of ion-selective electrodes (ISEs) to suit a wide variety of applications. Each electrode has a typical response time of 20 to 30 seconds but will vary with solution concentration. Oakton offers four electrode types: membrane, solid-state, gas sensing, and glass bulb. Gas sensing electrodes also include replacement membranes.

Choose from single- or double-junction electrodes. Single-junction electrodes are ideal for clean water applications. Use double-junction electrodes for testing dirty water and solutions with heavy metals or organics. All electrodes are refillable and include 15 mL of electrolyte and a filling pipette. Solid-state electrodes also include polishing strips.

Epoxy-body,  
double-junction  
fluoride electrode  
35812-18



Use these  
ion-selective  
electrodes (ISEs)  
with:

Ion 700 benchtop meter  
(see page 20)

Ion 2700 benchtop  
meter (see page 21)

PC 2700 benchtop  
meter (see page 62)

Ion 6+ handheld  
meter (see page 12)

Or use with any other ion  
meter, or with any meter  
with 0.1 mV resolution.

## Ordering Information

Ion	Electrodes			Solution Kits†			
	Epoxy body, single junction	Epoxy body, double junction	Glass body, double junction	Single-junction solution kit	Double-junction solution kit	Replacement calibration standard	Replacement ISA
<b>Ammonia NH<sub>3</sub></b> High-purity power station water, fish tanks, sea water, wastewater, plating baths, air/stack gases, and biological samples. <b>Range:</b> 17,000 to 0.01 ppm <b>Type:</b> gas sensing	WD-35802-00	—	—	WD-35802-50*	—	WD-35803-01	—
<b>Ammonium NH<sub>4</sub><sup>+</sup></b> Boiler feed water, natural water and fertilizers. User must supply calibration standard. <b>Range:</b> 18,000 to 0.1 ppm <b>Type:</b> polymer membrane	WD-35802-02	WD-35812-02	WD-35802-03	WD-35802-52	WD-35802-53	—	WD-35803-53
<b>Bromide Br<sup>-</sup></b> Water, wine, soil, plant tissue, blood electrolytes, and clinical analysis. <b>Range:</b> 79,000 to 0.4 ppm <b>Type:</b> solid-state	WD-35802-04	WD-35812-04	WD-35802-05	WD-35802-54	WD-35802-55	WD-35803-03	WD-35803-51
<b>Cadmium Cd<sup>+2</sup></b> Plating baths. User must supply calibration standard. <b>Range:</b> 11,200 to 0.01 ppm <b>Type:</b> solid-state	WD-35802-06	WD-35812-06	WD-35802-07	WD-35802-56	WD-35802-57	—	WD-35803-51
<b>Calcium Ca<sup>+2</sup></b> Water softening systems, boiler feed water, drinking/mineral water, blood electrolytes, clinical analysis, and food applications. <b>Range:</b> 40,000 to 0.2 ppm <b>Type:</b> polymer membrane	WD-35802-08	WD-35812-08	WD-35802-09	WD-35802-58	WD-35802-59	WD-35803-05	WD-35803-52
<b>Carbon Dioxide CO<sub>2</sub> and Carbonate CO<sub>3</sub><sup>-2</sup></b> Soft drinks/carbonated beverages, wine, beer, fermentation processes, bacterial cultures. <b>Range:</b> 440 to 4.4 ppm <b>Type:</b> gas sensing	WD-35802-10	—	—	WD-35802-60	—	WD-35803-07	WD-35803-55
<b>Chloride Cl<sup>-</sup></b> River/tap water, plant tissue, soils, boiler feed water, blood electrolytes, clinical analysis, sweat, urine, cement, plating baths, and food samples. <b>Range:</b> 35,500 to 1.8 ppm <b>Type:</b> solid-state	WD-35802-12	WD-35812-12	—	WD-35802-62	WD-35802-63	WD-35803-09	WD-35803-51
<b>Copper Cu<sup>+2</sup></b> Plating baths and water <b>Range:</b> 6350 to 6.4 x 10 <sup>-4</sup> ppm <b>Type:</b> solid-state	WD-35802-14	WD-35812-14	—	WD-35802-64	WD-35802-65	WD-35803-11	WD-35803-51
<b>Cyanide CN<sup>-</sup></b> Plating baths, wastewater and plant tissue. User must supply calibration standard. <b>Range:</b> 260 to 0.13 ppm <b>Type:</b> solid-state	WD-35802-16	WD-35812-16	WD-35802-17	—	—	—	WD-35803-50
<b>Fluoride F<sup>-</sup></b> Drinking/natural water, wastewater, air/stack gases, acids, sea water minerals, soils, food, biological fluids, toothpaste/mouthwash, coal, carbonated beverages, and bone. <b>Range:</b> saturated to 0.02 ppm <b>Type:</b> solid-state	WD-35802-18	WD-35812-18	WD-35802-19	WD-35802-68	WD-35802-69	WD-35803-13	WD-35803-58

\*Ammonia solution kit does not include ISA. †Contact your authorized Oakton Distributor for replacement electrolyte solutions.

### Solution Kits

Be sure to select both the electrode and solution kit to complete your measurement system. Solution kits contain the solutions and accessories needed for calibration, sample preparation, and measurement of ion concentration and activity. All solutions are supplied with MSDS (Material Safety Data Sheet) and have a value of 1000 ppm. Solution kits include replacement reference electrolyte, ISA (ionic strength adjustor)\*, calibration standard, and filling pipette. Kits for solid-state electrodes also include polishing strips. Kits for gas sensing electrodes also include replacement membranes.



### Ordering Information

Ion	Electrodes			Solution Kits <sup>†</sup>			
	Epoxy body, single junction	Epoxy body, double junction	Glass body, double junction	Single-junction solution kit	Double-junction solution kit	Replacement calibration standard	Replacement ISA
<b>Fluoroborate BF<sub>4</sub><sup>-</sup></b> Plating baths (boron analysis) Range: 10,800 to 0.1 ppm Type: polymer membrane	—	—	—	WD-35802-70	WD-35802-71	WD-35803-15	WD-35803-60
<b>Iodide I<sup>-</sup></b> Milk, feeds, plants and pharmaceuticals. Range: 127,000 to 6 x 10 <sup>-3</sup> ppm Type: solid-state	WD-35802-22	WD-35812-22	WD-35802-23	WD-35802-72	WD-35802-73	WD-35803-17	WD-35803-51
<b>Lead Pb<sup>+2</sup></b> Plating baths and organic compounds. Range: 20,700 to 0.2 ppm Type: solid-state	WD-35802-24	WD-35812-24	WD-35802-25	WD-35802-74	WD-35802-75	WD-35803-20	WD-35803-56
<b>Nitrate NO<sub>3</sub><sup>-</sup></b> Surface/drinking water, sewage effluent, soil extracts, fertilizers, plant tissue, meat, potatoes, spinach, beets, baby food. Range: 62,000 to 0.5 ppm Type: polymer membrane	WD-35802-30	WD-35812-30	WD-35802-31	WD-35802-78	WD-35802-79	WD-35803-24	WD-35803-60
<b>Nitrogen Oxide NO<sub>x</sub></b> Air and stack gases. Range: 220 to 0.2 ppm Type: gas sensing	WD-35802-32	—	—	WD-35802-82	—	WD-35803-26	WD-35803-57
<b>Perchlorate ClO<sub>4</sub><sup>-</sup></b> Explosives and solid propellants. Range: 98,000 to 0.7 ppm Type: polymer membrane	WD-35802-34	WD-35812-34	WD-35802-35	WD-35802-84	WD-35802-85	WD-35803-28	WD-35803-60
<b>Potassium K<sup>+</sup></b> Wastewater, river/tap water, blood electrolytes, clinical analysis, saliva, serum, fertilizers, soils, and wines. Range: 39,000 to 0.04 ppm Type: polymer membrane	WD-35802-38	WD-35812-38	WD-35802-39	WD-35802-88	WD-35802-89	WD-35803-30	WD-35803-53
<b>Silver/Sulfide Ag<sup>+</sup>/S<sup>-2</sup></b> Sewage effluent, soils, sediments, plating baths and photographic fixing solution. User must supply solutions for sulfide. Range: 107,900 to 0.01 ppm Type: solid-state	WD-35802-40	WD-35812-40	WD-35802-41	WD-35802-90	WD-35802-91	WD-35803-32	WD-35803-51
<b>Sodium Na<sup>+</sup></b> Steam condensates in power plants, blood electrolytes, clinical analysis, serum, foods, wine, glass, sea water, swimming pools, fish farms and aquariums. Range: 23,000 to 0.2 ppm Type: glass bulb	WD-35802-42	WD-35812-42	WD-35802-43	WD-35802-92	WD-35802-93	WD-35803-34	WD-35803-54
<b>Surfactant X<sup>+</sup>, X<sup>-</sup></b> Detergents, dishwashing liquids, cleaning supplies, and food products. For titration only. Range: 12,000 to 1.0 ppm Type: polymer membrane	WD-35802-44	WD-35812-44	WD-35802-45	WD-35802-94	WD-35802-95	WD-35803-35	WD-35803-59
<b>Water hardness Ca<sup>+2</sup>, Mg<sup>+2</sup></b> Water softening systems, boiler feed water, drinking/mineral water, blood electrolytes, clinical analysis, and food applications. Range: 40,000 to 0.4 ppm Type: polymer membrane	WD-35802-48	WD-35812-48	WD-35802-49	WD-35802-98	WD-35802-99	WD-35803-05	WD-35803-52

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