



pH FIELD & LAB ELECTRODES

Ion Selective Electrode Selection Guide

MOST POPULAR MODEL HIGHLIGHTED!

To Order (Specify Model Number)						
Electrode	Model No.	Price	Housing	Sensor Type	Direct Measurement Range	
					Molar	PPM
Ammonia (NH ₃)	ISE-8710	£188	Epoxy	Gas-sensing Combination	1.0 to 5x10 ⁻⁷	17000 to 0.01
Ammonium (NH ₄ ⁺)	ISE-8711 ISE-8712	147 184	PVC Glass	Polymer membrane mono Combination	1.0 to 5x10 ⁻⁶	18000 to 0.1
Bromide (Br ⁻)	ISE-8720 ISE-8722	127 147	Epoxy Glass	Solid-state mono Combination	1.0 to 5x10 ⁻⁶	79900 to 0.4
Cadmium (Cd ⁺²)	ISE-8730 ISE-8732	147 184	Epoxy Glass	Solid-state mono Combination	1x10 ⁻¹ to 1x10 ⁻⁷	11200 to 0.01
Calcium (Ca ⁺²)	ISE-8740 ISE-8742	147 184	PVC Glass	Polymer membrane mono Combination	1.0 to 5x10 ⁻⁶	40000 to 0.2
Carbon Dioxide (CO ₂) Carbonate (CO ₃ ⁻²)	ISE-8750	188	Epoxy	Gas-sensing Combination	1x10 ⁻² to 1x10 ⁻⁴	440 to 4.4
Chloride (Cl ⁻)	ISE-8760 ISE-8770	127 147	Epoxy Glass	Solid-state mono Combination	1.0-5 x 10 ⁻⁵	35500 to 1.8
Copper (Cu ⁺²)	ISE-8800 ISE-8802	147 184	Epoxy Glass	Solid-state mono Combination	1 x 10 ⁻¹ to 1 x 10 ⁻⁸	6350 to 6.4 x 10 ⁻⁴
Cyanide (CN ⁻)	ISE-8780 ISE-8782	127 147	Epoxy Glass	Solid-state mono Combination	1 x 10 ⁻² to 5 x 10 ⁻⁶	260 to 0.13
Fluoride (F ⁻)	ISE-8790 ISE-8795	147 184	Epoxy Glass	Solid-state mono Combination	Saturated to 1 x 10 ⁻⁶	Saturated to 0.02
Fluoroborate (BF ₄ ⁻)	ISE-8810 ISE-8812	147 184	PVC Glass	Polymer membrane mono Combination	1.0 to 7 x 10 ⁻⁶	10800-0.1 (as B)
Iodide (I ⁻)	ISE-8715 ISE-8716	127 147	Epoxy Glass	Solid-state mono Combination	1.0 to 5 x 10 ⁻⁸	127000 to 6 x 10 ⁻³
Lead (Pb ⁺²)	ISE-8725 ISE-8726	147 184	Epoxy Glass	Solid-state mono Combination	1 x 10 ⁻¹ to 1 x 10 ⁻⁶	20700 to 0.2
Lithium (Li ⁺)	ISE-8820 ISE-8822	205 184	PVC Glass	Polymer membrane mono Combination	1.0 to 1 x 10 ⁻⁵	6900 to 0.7
Nitrate (NO ₃ ⁻)	ISE-8735 ISE-8736	147 184	PVC Glass	Polymer membrane mono Combination	1.0 to 7 x 10 ⁻⁶	62000 to 0.5
Nitrogen Oxide (NO _x)	ISE-8830	188	Epoxy	Gas Sensing Combination	5 x 10 ⁻³ to 5 x 10 ⁻⁶	220 to 0.2
Perchlorate (ClO ₄ ⁻)	ISE-8840 ISE-8842	147 184	PVC Glass	Polymer membrane mono Combination	1.0 to 7 x 10 ⁻⁶	98000 to 0.7
pH (H ⁺)	ISE-8850	147	PVC	Polymer membrane mono	1 x 10 ⁻¹ to 1 x 10 ⁻⁷	pH 1 to 7
Potassium (K ⁺)	ISE-8745 ISE-8746	147 184	PVC Glass	Polymer membrane mono Combination	1.0 to 1 x 10 ⁻⁶	39000 to 0.04
Silver/Sulfide (Ag ⁺ /S ⁻²)	ISE-8755 ISE-8756	127 147	Epoxy Glass	Solid-state-mono Combination	Ag ⁺ = 1.0 to 1 x 10 ⁻⁷ S ⁻² = 1.0 to 1 x 10 ⁻⁷	Ag ⁺ = 107900 to 0.01 S ⁻² = 32100 to 0.003
Sodium (Na ⁺)	ISE-8775 ISE-8765	84 127	Glass Glass	Glass mono Combination	Saturated to 1 x 10 ⁻⁶	Saturated to 0.02
Sodium (Na ⁺)	ISE-8860 ISE-8862	147 184	PVC Glass	Polymer Membrane mono Combination	1.0 to 1 x 10 ⁻⁵	23000 to 0.2
Surfactant (X ⁻ ,X)	ISE-8880 ISE-8882	147 184	PVC Glass	Polymer membrane mono Combination	5 x 10 ⁻² to 1 x 10 ⁻⁵	12000 to 1.0
Water Hardness (Ca ⁺² /Mg ⁺²)	ISE-8900 ISE-8902	147 184	PVC Glass	Polymer membrane mono Combination	1.0 to 1 x 10 ⁻⁵	40000 to 0.4 (as Ca)

* Double Junction Reference Electrode, PHE-3211, £41.50
Single Junction Reference Electrode, PHE-3111, £35.50



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Slope mV per Decade	pH Range	Temp. Range °C	Resp Time Secs	Interferences	Reference Electrode*	Reference Electrolyte
56 ±3	above 11	0 to 50	30	Volatile amines	N/A	NH ₄ Cl
56 ±2	4 to 10	0 to 50	30	K ⁺	Double Junction	NaCl
57 ±2	2 to 14	0 to 80	20	S ²⁻ , I ⁻ , CN ⁻ , high levels of Cl and NH ₃	Double Junction	KNO ₃ KNO ₃
27 ±2	2 to 12	0 to 80	20	Ag ⁺ , Hg ⁺² , Cu ⁺² , high levels of Pb ⁺² & Fe ⁺²	Double Junction	KNO ₃
27 ±2	3 to 10	0 to 50	30	Pb ⁺² , Hg ⁺² , Cu ⁺² , Ni ⁺²	Single Junction	KCl
56 ±3	4.8 to 5.2	0 to 50	30	Volatile weak acids	N/A	NaHCO ₃
56 ±2	2 to 12	0 to 80	20	S ²⁻ , I ⁻ , CN ⁻ , Br ⁻	Double Junction	KNO ₃
27 ±2	2 to 12	0 to 80	20	Ag ⁺ , Hg ⁺² , high levels of Cl ⁻ , Br ⁻ , Fe ⁺² , Cd ⁺²	Double Junction	KNO ₃
57 ±2	11 to 13	0 to 80	20	S ²⁻ , I ⁻ , Br ⁻ , Cl ⁻	Double Junction	KNO ₃
57±2	5 to 8	0 to 80	20	OH ⁻	Single Junction	KCl
56 ±2	2.5 to 11	0 to 50	30	ClO ₄ ⁻ , I ⁻ , CN ⁻	Double Junction	(NH ₄) ₂ SO ₄
57 ±2	0 to 14	0 to 80	20	S ²⁻ , CN ⁻ , Br ⁻ , Cl ⁻ , S ₂ O ₃ ⁻² , NH ₃	Double Junction	KNO ₃
25 ±2	3 to 8	0 to 80	20	Ag ⁺ , Hg ⁺² , Cu ⁺² , high levels of Cd ⁺² and Fe ⁺²	Double Junction	KNO ₃
56 ±2	5 to 10	0 to 50	30	Na ⁺ , K ⁺ , Ca ⁺²	Double Junction	(NH ₄) ₂ SO ₄
57 ±2	2.5 to 11	0 to 50	30	ClO ₄ ⁻ , I ⁻ , CN ⁻ , BF ₄ ⁻	Double Junction	(NH ₄) ₂ SO ₄
56 ±3	1.1 to 1.7	0 to 50	30	SO ₂ , HF, acetic acid	N/A	NaNO ₂
56 ±2	2.5 to 11	0 to 50	30	no significant interference	Double Junction	(NH ₄) ₂ SO ₄
53 ±2	1 to 7	0 to 50	30	no significant interference	Single Junction	KCl
56 ±2	2 to 12	0 to 50	30	Cs ⁺ , NH ₄ ⁺	Double Junction	NaCl
Ag ⁺ =57±2 S ²⁻ =27±2	2 to 12	0 to 80	20	Hg ²⁺ , Hg ⁺	Double Junction	KNO ₃
56 ±2	5 to 12	0 to 80	20	H ⁺ , K ⁺ , Li ⁺ , Ag ⁺ , Cs ⁺ , Tl ⁺	Double Junction	NH ₄ Cl
55±2	5 to 10	0 to 50	30	K ⁺ , Li ⁺	Double Junction	NH ₄ Cl
for titration	2 to 12	0 to 50	30	similar types of surfactants	Single Junction	KCl
26 ±3	5 to 10	0 to 50 (as Ca)	30	Cu ⁺² , Zn ⁺² , Ni ⁺² , Fe ⁺²	Single Junction	KCl

Comes with complete operator's manual.

Ordering Examples: ISE-8711, ammonium electrode, £147. ISE-8756, silver/sulfide electrode, £147.




pH FIELD & LAB ELECTRODES

ISE Standards, ISA & Reference Outer-Fill Solutions

PHI-359, £845, bench top pH meter shown smaller than actual size, see page B-33.



Accessory

Model No.	Price	Description
ES-2208	£87	Reference Book: Hands on Water and Wastewater Equipment Maintenance 

MOST POPULAR MODELS HIGHLIGHTED!

To Order (Specify Model Number)										
Electrode	Standard (475 mL)			Price	ISA (475 mL)		Reference Outer-Fill (125 mL)			
	0.1 m	1000 PPM	100 PPM		Model No.	Price	Singe Junction	Price	Double Junction	Price
	Model No.	Model No.	Model No.		Model No.					
Ammonia	ISE-8710-S1	ISE-8710-S2	–	£20	ISE-8710-R2 ISE-8710-R1	£23.50 27	PHFS-8710	£16.75	–	–
Ammonium	ISE-8711-S1	ISE-8711-S2	ISE-8711-S3	20	ISE-8711-R1	23.50	PHFS-1042	16.75	PHFS-1043	£10
Bromide	ISE-8720-S1	ISE-8720-S2	–	20	ISE-8720-R1	23.50	PHFS-1048	16.75	PHFS-NO3	10
Cadmium	–	–	–	–	ISE-8730-R1	23.50	–	–	PHFS-NO3	10
Calcium	ISE-8740-S1	ISE-8740-S2	ISE-8740-S3	20	ISE-8740-R1	23.50	–	–	PHFS-4MKCL	10
Carbon Dioxide	ISE-8750-S1	ISE-8750-S2	ISE-8750-S3	20	ISE-8750-R1	23.50	PHFS-8750	16.75	–	–
Chloride (Solid State, PVC)	ISE-8770-S1	ISE-8770-S2	ISE-8770-S3	20	ISE-8770-R1	23.50	PHFS-1046 PHFS-1045	10 10	PHFS-NO3 PHFS-1044	10 10
Copper	ISE-8800-S1	ISE-8800-S2	–	20	ISE-8800-R1	23.50	PHFS-1046	10	PHFS-NO3	10
Cyanide	–	–	–	–	–	–	PHFS-1046	10	PHFS-NO3	10
Fluoride	ISE-8790-S1	ISE-8790-S2	–	20	ISE-8790-R2 ISE-8790-R1	40 40	PHFS-KCL	10	PHFS-4MKCL	10
Fluoroborate	ISE-8810-S1	ISE-8810-S2	–	20	ISE-8810-R1	23.50	PHFS-1045	10	PHFS-1044	10
Iodide	ISE-8715-S1	ISE-8715-S2	–	20	ISE-8715-R1	23.50	PHFS-1046	10	PHFS-NO3	10
Lead	ISE-8725-S1	–	–	20	ISE-8725-R1	40	PHFS-1046	10	PHFS-NO3	10
Lithium	ISE-8820-S1	ISE-8820-S2	–	20	ISE-8820-R1	23.50	PHFS-1041	10	PHFS-1044	10
Nitrate	ISE-8735-S1	ISE-8735-S2	ISE-8735-S3	20	ISE-8735-R1	23.50	PHFS-1045	10	PHFS-1044	10
Nitrogen Oxide	ISE-8830-S1	ISE-8830-S2	ISE-8830-S3	20	ISE-8830-R1	23.50	PHFS-NOX	16.75	–	–
Perchlorate	ISE-8840-S1	ISE-8840-S2	–	20	ISE-8840-R1	23.50	PHFS-1045	10	PHFS-1044	10
pH (PVC Membrane)	ISE-8850-S1	ISE-8850-S2	–	5.40	–	–	PHFS-KCL	10	–	–
Potassium	ISE-8745-S1	ISE-8745-S2	–	20	ISE-8745-R1	23.50	PHFS-1042	10	PHFS-1043	10
Silver/Sulfide	ISE-8755-S1	ISE-8755-S2	–	20	ISE-8755-R1	23.50	PHFS-1046	10	PHFS-NO3	10
Sodium (Glass)	ISE-8765-S1	ISE-8765-S2	ISE-8765-S3	20	ISE-8765-R1	23.50	PHFS-1041	10	PHFS-1047	10
Sodium (PVC)	ISE-8860-S1	ISE-8860-S2	ISE-8860-S3	20	ISE-8860-R1	23.50	PHFS-1041	10	PHFS-1047	10
Surfactant	ISE-8880-S1	ISE-8880-S2	–	20	ISE-8880-R1	23.50	PHFS-KCL	10	PHFS-4MKCL	10
Water Hardness	ISE-8900-S1	ISE-8900-S2	ISE-8900-S3	20	ISE-8900-R1	23.50	PHFS-KCL	10	PHFS-4MKCL	10

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