

Catch Them All

Combined Ion-Selective Electrode

As various as the range of different ions, as various is the selection of ion-selective electrodes (ISE). The special Click & Clear™ junction allows for an optimal contact of the electrolyte solution and the sample. With the dedicated solutions the sample can be optimally prepared for successful measurement of ion concentration.



perfection™ sensors



perfection™ comb Na⁺

Measuring ion	perfection™	Order number electrode	Cable and connections	Measuring range	Temperature range	Optimal pH range	Type of membrane	Reference electrolyte	Order no. membrane module	Order no. ISA solution
Ag ⁺ /S ²⁻	comb Ag ⁺ /S ²⁻	51344700	1.2 m; BNC	10 ⁻⁷ ...1 mol/L	0...80 °C	2...12	Solid state	Ion Electrolyte B 51344751		Ag ⁺ : 51344760
		51344800	1.2 m; Lemo	Ag ⁺ : 0.01...108000 mg/L S ²⁻ : 0.003...32000 mg/L						S ²⁻ : see manual
Ca ²⁺	comb Ca ²⁺	51344703	1.2 m; BNC	5 · 10 ⁻⁷ ...1 mol/L	0...40 °C	2.5...11	Polymer	Ion Electrolyte A 51344750	51344850	51344761
		51344803	1.2 m; Lemo	0.02...40100 mg/L						
Cl ⁻	comb Cl ⁻	51344706	1.2 m; BNC	5 · 10 ⁻⁶ ...1 mol/L	0...80 °C	2...12	Solid state	Ion Electrolyte B 51344751		51344760
		51344806	1.2 m; Lemo	1.8...35500 mg/L						
CN ⁻	comb CN ⁻	51344709	1.2 m; BNC	8 · 10 ⁻⁶ ...10 ⁻² mol/L	0...80 °C	10...14	Solid state	Ion Electrolyte B 51344751		10 mol/L NaOH
		51344809	1.2 m; Lemo	0.2...260 mg/L						
Cu ²⁺	comb Cu ²⁺	51344712	1.2 m; BNC	10 ⁻⁸ ...0.1 mol/L	0...80 °C	2...12	Solid state	Ion Electrolyte D 51344753		51344760
		51344812	1.2 m; Lemo	6.4 · 10 ⁻⁴ ...6354 mg/L						
F ⁻	comb F ⁻	51344715	1.2 m; BNC	10 ⁻⁶ mol/L...saturated	0...80 °C	4.5...5.5	Solid state	Ion Electrolyte A 51344750		51344765
		51344815	1.2 m; Lemo	0.02 mg/L...saturated						

The sodium chloride content of ketchup can be easily and cost-efficiently determined with the perfectION™ comb Cl⁻ electrode. The ingenious Click&Clear junction makes cleaning of the sensor fast and easy.



Measuring ion	perfectION™	Order number electrode	Cable and connections	Measuring range	Temperature range	Optimal pH range	Type of membrane	Reference electrolyte	Order no. membrane module	Order no. ISA solution
I ⁻	comb I ⁻	51344718	1.2 m; BNC	5 · 10 ⁻⁶ ...1 mol/L	0...80 °C	0...12	Solid state	Ion Electrolyte D 51344753		51344760
		51344818	1.2 m; Lemo	0.005...127000 mg/L						
K ⁺	comb K ⁺	51344721	1.2 m; BNC	10 ⁻⁶ ...1 mol/L	0...40 °C	2.5...11	Polymer	Ion Electrolyte E 51344754	51344851	51344762
		51344821	1.2 m; Lemo	0.04...39000 mg/L						
Na ⁺ ¹⁾	comb Na ⁺	51344724	S7	10 ⁻⁷ ...1 mol/L 0.002...23000 mg/L	0...80 °C	8...11	Na ⁺ -Glass	3 mol/L KCl 51350072		NH ₄ Cl / NH ₄ OH
NO ₃ ⁻	comb NO ₃ ⁻	51344727	1.2 m; BNC	7 · 10 ⁻⁶ ...1 mol/L NO ₃ ⁻ 0.1...14000 mg/L NO ₃ ⁻ as N	0...40 °C	2.5...11	Polymer	Ion Electrolyte F 51344755	51344852	51344763
		51344827	1.2 m; Lemo							
Pb ²⁺	comb Pb ²⁺	51344730	1.2 m; BNC	10 ⁻⁶ ...0.1 mol/L	0...80 °C	4...7	Solid state	Ion Electrolyte B 51344751		5 mol/L NaClO ₄
		51344830	1.2 m; Lemo	0.2...20700 mg/L						
Common specifications		ion-selective electrode (ISE) with built-in reference / Type of junction: Click & Clear™ / Shaft material: Epoxy ¹⁾ exception: perfectION™ comb Na ⁺ : S7 screw cap / ceramic diaphragm / ARGENTHAL™ / Shaft material: Glass								

Tried and Trusted Ion-Selective Half-Cells

Ion-selective half-cells are very flexible in application. They consist of a universal shaft and an ion-specific membrane module that can be exchanged to measure different kind of ions. Membrane modules are available in membrane kits, including the correct electrolyte solution. Half-cells require the use of a separate reference electrode.



DX sensors

DX223-Na⁺

Measuring ion	Designation	Order number electrode	Measuring range	Temperature range	Optimal pH range	Type of membrane	Shaft material	Order no. membrane kit	Order no. electrolyte	Electrolyte for reference electrode	ISA solution
Ba ²⁺	DX337-Ba ²⁺	51107674	1...4 · 10 ⁻⁷ mol/L	0...50 °C	2...12	Polymer	POM/PVC	51107688	51107892	3 mol/L KCl	1 mol/L Tris ₂ HCl
BF ₄ ⁻	DX287-BF ₄ ⁻	51107676	1...3 · 10 ⁻⁷ mol/L	0...50 °C	2...12	Polymer	POM/PVC	51107690	51107890	2 mol/L MgSO ₄	0.5 mol/L MgSO ₄
Br ⁻	DX280-Br ⁻	51340300	1...1 · 10 ⁻⁶ mol/L	0...80 °C	2...13	Solid state	POM	51340006	51340029	1 mol/L KNO ₃	1 mol/L KNO ₃
Ca ²⁺	DX240-Ca ²⁺	51340600	1...1 · 10 ⁻⁶ mol/L	0...50 °C	2...12	Polymer	POM/PVC	51340009	51340032	3 mol/L KCl	3 mol/L KCl
Cd ²⁺	DX312-Cd ²⁺	51107672	1...1 · 10 ⁻⁶ mol/L	0...50 °C	2...8	Polymer	POM/PVC	51107686	51107891	1 mol/L KNO ₃	1 mol/L KNO ₃
Cl ⁻	DX235-Cl ⁻	51340400	1...2 · 10 ⁻⁵ mol/L	0...80 °C	2...13	Solid state	POM	51340007	51340030	1 mol/L KNO ₃	1 mol/L KNO ₃
CN ⁻	DX226-CN ⁻	51107681	1...2 · 10 ⁻⁶ mol/L	0...80 °C	4...13	Solid state	POM	51107695	51107893	1 mol/L KNO ₃	10 mol/L NaOH
Cu ²⁺	DX264-Cu ²⁺	51107678	1...5 · 10 ⁻⁷ mol/L	0...80 °C	2...8	Solid state	POM	51107692	51107889	1 mol/L KNO ₃	1 mol/L KNO ₃
F ⁻	DX219-F ⁻	51340500	1...5 · 10 ⁻⁷ mol/L	0...80 °C	4...10	Solid state	POM	51340008	51340031	3 mol/L KCl	TISAB III

Fluoride is an essential ingredient in various oral hygiene products and the concentration must be controlled properly. Thanks to the DX219-F this is possible without expensive analytical equipment.



Measuring ion	Designation	Order number electrode	Measuring range	Temperature range	Optimal pH range	Type of membrane	Shaft material	Order no. membrane kit	Order no. electrolyte	Electrolyte for reference electrode	ISA solution
I ⁻	DX327-I ⁻	51107680	1...2 · 10 ⁻⁸ mol/L	0...80 °C	1...13	Solid state	POM	51107694	51107898	1 mol/L KNO ₃	1 mol/L KNO ₃
K ⁺	DX239-K ⁺	51340700	1...1 · 10 ⁻⁶ mol/L	0...50 °C	2...12	Polymer	POM/PVC	51340010	51340033	2 mol/L MgSO ₄	0.5 mol/L MgSO ₄
Li ⁺	DX207-Li ⁺	51107673	1...1 · 10 ⁻⁶ mol/L	0...50 °C	2...9	Polymer	POM/PVC	51107687	51107881	3 mol/L KCL	0.5 mol/L MgSO ₄
Na ⁺	DX223-Na ⁺	51340263	1...1 · 10 ⁻⁷ mol/L	0...80 °C	8...11	Na Glass	Glass			0.1 mol/L NH ₄ Cl / NH ₄ Cl	NH ₄ Cl / NH ₄ OH
NH ₄ ⁺	DX218-NH ₄ ⁺	51340900	1...4 · 10 ⁻⁷ mol/L	0...50 °C	2...9	Polymer	POM/PVC	51340012	51340035	2 mol/L MgSO ₄	0.5 mol/L MgSO ₄
NO ₂ ⁻	DX262-NO ₂ ⁻	51340800	1...3 · 10 ⁻⁵ mol/L	0...50 °C	2...12	Polymer	POM/PVC	51340011	51340034	2 mol/L MgSO ₄	0.5 mol/L MgSO ₄
Pb ²⁺	DX407-Pb ²⁺	51107873	1...3 · 10 ⁻⁶ mol/L	0...50 °C	2...8	Polymer	POM/PVC	51107874	51107875	1 mol/L KNO ₃	1 mol/L KNO ₃
S ²⁻ /Ag ⁺	DX232-S ²⁻	51107675	1...1 · 10 ⁻⁸ mol/L	0...80 °C	4...13	Solid state	POM	51107689	51107894	1 mol/L KNO ₃	10 mol/L NaOH
SCN ⁻	DX258-SCN ⁻	51107870	1...2 · 10 ⁻⁶ mol/L	0...80 °C	2...10	Solid state	POM	51107871	51107872	1 mol/L KNO ₃	1 mol/L KNO ₃
Common specifications		Type of electrode: ion-selective half-cell; Cable and connections: S7									