

Ion-Selective Electrodes

WTW offers a complete range of ion selective electrodes and measuring instruments; you can choose between two types: Half cells of the 500 series which require a reference electrode from the R 503 type (an exception is the gas sensitive NH 500/2 which has a built-in reference electrode), or the combination electrodes from the 800 series.

These combination electrodes with built-in reference are excellent in handling and additionally offer the possibility to measure in small volumina. More over this they have an outstanding price performance ratio.



Applications for Ion-selective and Gas-sensitive Electrodes

Electrode type	Membrane [®]	Determinable ions	ISE Type 500 (Half cell, reference electrode necessary)	Reference electrode	combined ISE Type 800 (built-in reference electrode)	Measuring range	Bridge electrolyte	Ionic strength adjustment solution	Standard solution (conc. 10 g/l)	pH range
Ammonia (NH ₄ ⁺)		Ammonia	NH 500/2	—	—	0,02...900 mg/l 10 ⁻⁶ ...5 x 10 ⁻² mol/l	—	MZ/NH ₃ /CN	ES/NH ₄	4-12
Lead (Pb ²⁺)	S	Lead	Pb 500	For all ion selective electrodes from the 500 series:	Pb 800	0,2...20000 mg/l 10 ⁻⁶ ...10 ⁻¹ mol/l	ELY/BR/503	ISA/FK	ES/Pb	4-7
Bromide (Br ⁻)	S	Bromide	Br 500		Br 800	0,4...79000 mg/l 5 x 10 ⁻⁶ ...1 mol/l	ELY/BR/503	ISA/FK	ES/Br	1-12
Cadmium (Cd ²⁺)	S	Cadmium	Cd 500		Cd 800	0,01...11000 mg/l 10 ⁻⁷ ...10 ⁻¹ mol/l	ELY/BR/503	ISA/FK	—	2-8
Calcium (Ca ²⁺)	L	Calcium, Magnesium [®]	Ca 500 ^①		Ca 800 ^①	0,02...40000 mg/l 5 x 10 ⁻⁷ ...1 mol/l	ELY/BR/503	ISA/Ca	ES/Ca	2,5-11
Chloride (Cl ⁻)	S	Chloride	Cl 500		Cl 800	2...35000 mg/l 5 x 10 ⁻⁵ ...1 mol/l	ELY/BR/503	ISA/FK	ES/Cl	2-12
Cyanide (CN ⁻) ^②	S	Cyanide	CN 500	R 503/P (2 mm pin plug) or R 503 D (4 mm banana plug)	CN 800	0,2...260 mg/l 8 x 10 ⁻⁶ ...10 ⁻² mol/l	ELY/BR/503	MZ/NH ₃ /CN	—	0-14
Fluoride (F ⁻)	S	Fluoride, Aluminum Phosphate [®] , Lithium [®]	F 500		F 800	0,02...sat. mg/l 10 ⁻⁶ ...sat. mol/l	ELY/BR/503	TISAB	ES/F	5-7
Iodide (I ⁻)	S	Iodide, Thiosulfate Mercury	I 500	For all ion selective electrodes from the 500 series:	I 800	0,006...127000 mg/l 10 x 10 ⁻⁸ ...1 mol/l	ELY/BR/503	ISA/FK	ES/I	0-14
Potassium (K ⁺) ^③	L	Potassium	K 500 ^④		K 800 ^①	0,04...39000 mg/l 10 ⁻⁶ ...1 mol/l	ELY/BR/503/K	ISA/K	ES/K	2-12
Copper (Cu ²⁺)	S	Copper, Nickel [®]	Cu 500	For all ion selective electrodes from the 500 series:	Cu 800	0,0006...6400 mg/l 10 ⁻⁸ ...10 ⁻¹ mol/l	ELY/BR/503	ISA/FK	ES/Cu	2-6
Sodium (Na ⁺) ^⑤	G	Sodium	DX 223 NA			0,05...23000 mg/l 2 x 10 ⁻⁶ ...1 mol/l	—	ISA/Na	ES/Na	>10
Nitrate (NO ₃ ⁻) ^⑤	L	Nitrate	NO 500 ^①		NO 800 ^①	0,4...62000 mg/l 7 x 10 ⁻⁶ ...1 mol/l	ELY/BR/503/N	TISAB/NO ₃	ES/NO ₃	2,5-11
Silver (Ag ⁺) ^⑤	S	Silver	Ag/S 500		Ag/S 800	0,01...108000 mg/l 10 ⁻⁷ ...1 mol/l	ELY/BR/503	ISA/FK	—	2-12
Sulfide (S ²⁻) ^⑤	S	Sulfide	Ag/S 500		Ag/S 800	0,003...32000 mg/l 10 ⁻⁷ ...1 mol/l	ELY/BR/503	⑥	—	2-12

① Exchange measuring head

② S = solid state electrode, L = matrix electrode, G = glass electrode

③ Titration

④ Use according to operating instructions

⑤ Formulations for additionally required solutions are given in the application steps and operating instructions

Ordering Information for ISE electrodes and accessories see brochure "Product Details".