CHLORIDE ION SELECTIVE ELECTRODE ECI-01

The **ECI-01** polycrystalline chloride measuring electrode is designed for direct measurements of activity or concentration of chlorine (Cl-) ions in aqueous solutions and also in many water-organic mixtures. It may be used in laboratory measurements or continuous on-line measurements.
The measurements may be done in two ways, by direct measurement or using any of the techniques based on the growth of Cl ion concentration in the sample. This electrode may be specially useful in comprehensive potentiometric titration, used as a indicator of the end point of titration.
The typical applications of the Cl electrode are chloride measurements in surface water, deep water, well water, industrial sewage, all kinds of water in food products and biological samples etc. It may also be used in energetics, geological measurements, environment protection, medical diagnosis etc.
The **ECI-01** electrode has to cooperate with a reference electrode with it's potential undependant from the chemical composition of the measured solution. The proper reference electrode may be the **RL-100** electrode with the internal chamber filled with 1,0M potassium nitrate solution.
Electrodes after connecting with a Ion meter or a pH/mV meter create a measuring system which enables measurement of the chloride ions concentration. Using two separate electrodes (measuring and reference) requires using a meter which is equipped with 2 connectors, for the measuring electrode a BNC connector and for the reference electrode a "banana" connector. It is also possible to use a special adapter.
The electrode has a housing resistant to mechanical damages made of epoxy. It ends with a flat ion selective membrane.
The size of the electrode enables its installation in typical flow or immersion heads. Some limitations of using this electrode may be a result of presence, in the measured samples, substances which can cause noises or destroying the ion selective membrane. Important interference may be created by ions which are able to create, with the membrane material, a difficult to dissolve precipitates, this are: sulfides, bromides or substances which create soluble complex compounds like cyianides, thiosulphates or ammonia and reducing substances like for example compounds of photographic developers.

Technical data

Measuring range for stationary measurements	5 x 10^{-5} ÷ 1 mol/l Cl^-
	1.8 ÷ 35500 ppm Cl^-
Temperature range for periodic work	0 ÷ 80ºC
Temperature range for continuous work	0 ÷ 40ºC
pH acceptable range	2 ÷ 11 pH
Recommended pH range	3.0 ±7.0 pH
Characteristic slope	56 ±3 mV/pCl^+
Response time	30 to 60 s
Membrane resistance (in 20ºC)	below 50 kΩ
Selectivity coefficient	S^{2-} interference caused by trace
	I^- = 105
	$S_2O_3^{2-}$ =80
	OH^- = 0.03
	BR^- = 10
Type of ion selective membrane	polycrystalline
Body diameter	12.0 ± 0.5 mm
Body length (without cable cap)	120 ± 5 mm
Minimal immersion depth	5 mm
Maximal immersion depth	115 mm
Body material	epoxy
Cable length / Connector	about 1 m / BNC-50

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