



## CHLORINE (Cl<sub>2</sub>)

### GENERAL

The water of public and private pools must be disinfected in order to kill bacteria and virus. For that reason mostly chlorine-containing preparations or chlorine-gas are used. There are following points to be noted:

The chlorine, which can be determined in water after sterilizing it with chlorine, is called 'total chlorine'. This is the sum of all the existing chlorine at the moment of analysis and its sterilizing compounds. The total chlorine consists of 'free chlorine' and 'bounded chlorine'. For pools the required and permitted values of free and bounded chlorine in the water are stipulated by the authorities and can be measured and controlled with the EASY or the MPLT/RWCl.

Chlorine is also in use in the drinking water treatment, where limits for the chlorine dosis are stipulated, as well.

### METHODS

#### PHOTOMETRICAL

After taking the sample (solenoid valve) a zero-adjusting is made. Afterwards the chlorine reagents 1 and 2 are added to the sample in the measuring-cylinder by means of hose pumps and mixed. Elementary chlorine, underchloric acids and hypochlorite form with N,N-Diethyl-1,4- phenylendiamin (DPD) a red colouring, which is an indicator for free chlorine. By adding iodine-ions (reagent 3) the total chlorine is determined. The bounded chlorine is the difference between these two results. The measuring cycle is finished by the sample draining away and the cleaning of the measuring cuvette. The whole process is done full automatically.

#### TECHNICAL DATA

	free chlorine	bounded chlorine	total chlorine
Measuring range	0,1 ... 2,5 mg/l Cl <sub>2</sub>	0,1 ... 2,5 mg/l Cl <sub>2</sub>	0,1 ... 2,5 mg/l Cl <sub>2</sub>
Resolution	0,01 mg/l Cl <sub>2</sub>	0,01 mg/l Cl <sub>2</sub>	0,01 mg/l Cl <sub>2</sub>
Repeatability	deviation < 3% full scale	deviation < 3% full scale	deviation < 3% full scale
Max. meas. frequ.	3 minutes	4 minutes	4 minutes
Measuring system	photometrical	photometrical	photometrical
Reagents	2	3	3
Reagents consumption	0,7 ml / measuring / reagent	0,7 ml / measuring / reagent	0,7 ml / measuring / reagent
Disturbances	MnOx, CrO <sub>4</sub> , Cu, Fe	MnOx, CrO <sub>4</sub> , Cu, Fe	MnOx, CrO <sub>4</sub> , Cu, Fe

#### ION SELECTIVE

The Chlorine Ion-Selective Elektrode sensitively responds to the changes in concentration of fluoroborate anions in aqueous solutions by the change of its electrode potential.

#### TECHNICAL DATA

	Chlorine
Measuring range	0,01 ... 20 mg/L Cl <sub>2</sub>
Resolution	3 digits
Repeatability	+/-3% measuring value
Max. meas. frequ.	6 minutes
Measuring System	ion selective

TECHNICAL MODIFICATIONS RESERVED