

REFERENCE CHART • WATER CHEMISTRY

Free Chlorine: ORP/mV vs. pH

A quick reference for estimating any one of ORP, free available chlorine (FAC), or pH when the other two are known.

This chart provides a simple method to calculate ORP, free available chlorine (FAC, as HOCl), or pH when you know two of the three variables. Note that FAC as HOCl equals total chlorine minus chlorine demand minus hypochlorite (OCl^-); the balance of HOCl versus OCl^- depends on the pH of the system.

FREE AVAILABLE CHLORINE (PPM) — ORP (mV) × pH															
pH		6.9	7	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	8	8.1	8.2	ppm Cl
ORP/mV	mV	507	505	502	500	499	497	496	494	493	491	490	488	487	0.2
	mV	561	558	553	550	548	546	544	541	539	536	534	532	529	0.3
	mV	599	596	590	586	583	580	577	574	571	568	565	562	559	0.4
	mV	629	625	618	615	611	607	604	600	597	593	590	586	583	0.5
	mV	652	648	640	637	632	629	625	621	617	613	610	605	602	0.6
	mV	663	658	650	646	642	638	634	630	626	622	618	614	610	0.65
	mV	673	669	660	656	651	647	643	639	635	630	626	622	618	0.67
	mV	682	677	668	664	660	655	651	647	642	638	634	629	625	0.75
	mV	690	686	677	672	668	663	659	654	650	645	641	636	632	0.8
	mV	698	694	684	680	675	670	666	661	657	652	647	643	638	0.85
	mV	706	702	692	687	682	677	673	668	663	658	654	649	644	0.9
	mV	713	708	698	694	689	684	679	674	669	664	659	654	650	0.95
	mV	720	715	705	700	695	690	685	680	675	670	665	660	655	1
	mV	733	727	717	712	707	701	696	691	686	680	675	670	665	1.1
	mV	744	739	728	722	717	712	706	701	695	690	685	679	674	1.2
	mV	755	749	738	732	727	721	716	710	705	699	694	688	682	1.3
	mV	765	759	747	742	736	730	724	719	713	707	702	696	690	1.4
	mV	774	768	756	750	744	738	732	727	721	715	709	703	697	1.5
	mV	790	784	771	765	759	753	747	741	735	728	722	716	710	1.7
	mV	798	792	779	773	766	760	754	748	741	735	729	722	716	1.8
	mV	812	805	792	785	779	773	766	760	753	747	740	734	727	2
	mV	824	818	804	797	791	784	777	771	764	757	751	744	737	2.2
	mV	841	834	826	813	806	800	792	785	778	771	764	757	751	2.5

Read the table by locating your known ORP row and pH column; the intersecting value is the corresponding free available chlorine.