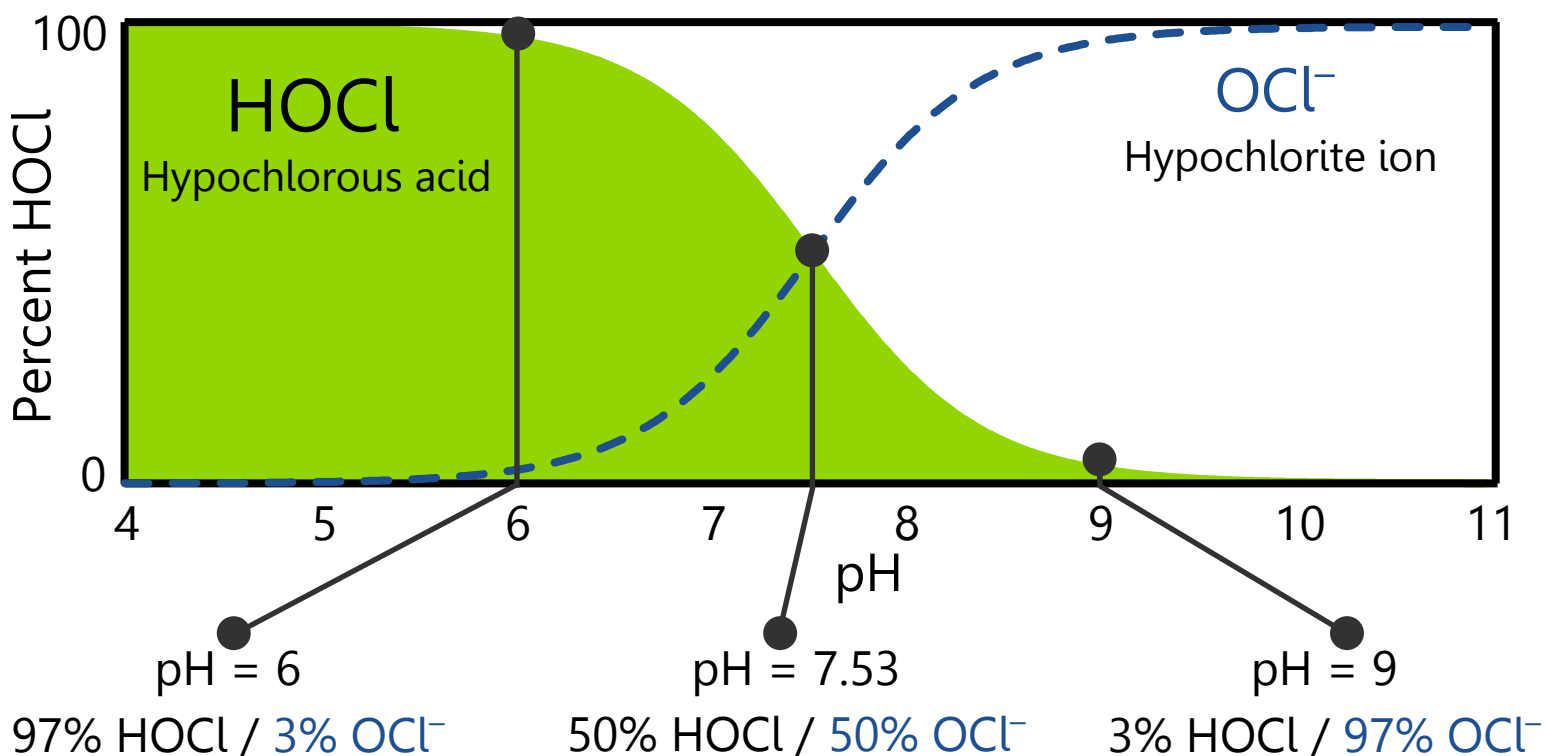


Why pH Matters In a Free Chlorine Measurement

Free Chlorine = HOCl

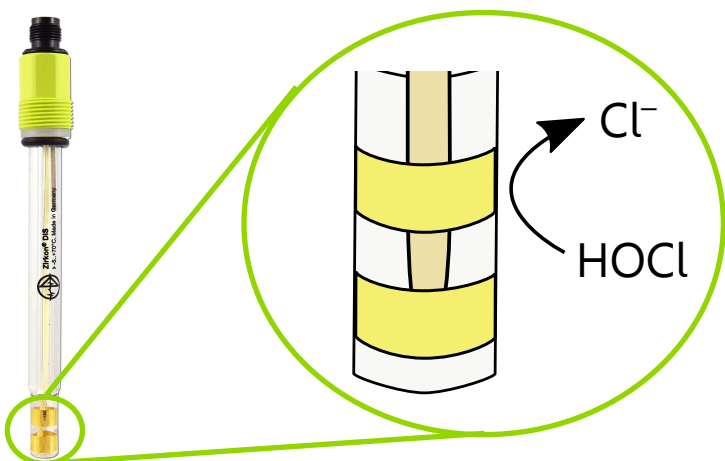
- When chlorine (Cl_2) is added to water, hypochlorous acid (HOCl) and the hypochlorite ion (OCl^-) are formed.
- The term "free chlorine" refers to the combination of Cl_2 , HOCl, and OCl^- that is present in solution.
- HOCl is the predominant biocidal agent, or what "kills" the pathogens that may be present.

Dissociation of HOCl



pH Determines Available HOCl

- The pH of the process determines the ratio of HOCl and OCl^- present.
- At $\text{pH} > 8$, there is a very small amount of HOCl present in solution, which makes amperometric detection of free chlorine a more challenging process.

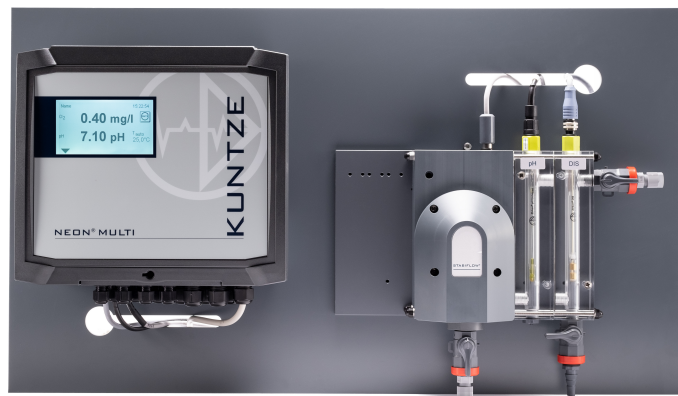


Zirkon® DIS Sensor Measures HOCl

- All amperometric sensors for free chlorine, including Kuntze's Zirkon® DIS sensor (left), measure HOCl.
- HOCl is reduced on the measuring electrode, resulting in a current.
- This current is then translated by the instrument to a free chlorine concentration.

KUNTZE BEST PRACTICES : Use a Krypton Multi® for free chlorine

- Kuntze's Krypton® Multi system (right) uses a Zirkon® DIS sensor and a Zirkon® pH sensor for a free chlorine measurement.
- The Neon® Multi features a pH Compensation function, which mathematically adjusts for pH fluctuations in the process.
- The Krypton® Multi system can measure free chlorine up to pH = 8.5.



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- Want more help on this topic? Scan this QR code to learn more.



CHEM 101:
Introduction to Free
Chlorine

Kuntze Support Center

- More questions? Check out the Kuntze Support Center.



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