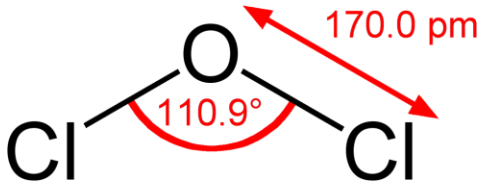
Question #75803, Chemistry / Inorganic Chemistry / Completed

Explain the tetrahedral structure of chlorine oxide with a bond angle of more than 109°28'

Answer:



The structure of dichlorine monoxide is similar to that of water and hypochlorous acid, with the molecule adopting a bent molecular geometry due to the lone pairs on the oxygen. The bond angle is slightly larger than normal, likely due to steric repulsion between the bulky chlorine atoms. n the solid state, it crystallises in the tetrahedral space group I41/amd, making it isostructural to the high pressure form of water*

* https://en.wikipedia.org/wiki/Dichlorine_monoxide