

Airborne pollutants

Presence of 3g/L of ammonia in water is toxic for human.

Ammonia can be present in water in two forms, either ammonium hydroxide (NH_3) or as the ammonium ion (NH_4). When the pH of the water is less than 7 the ammonia is present as the ammonium ion. As pH increases above 7, more of the ammonia is present as ammonium hydroxide.

The ammonium ion is the result of very soluble gaseous ammonia (NH_3) being dissolved in water. Non-ionized ammonia ionizes in water to form the ammonium ion and hydroxide ion. The degree of ionization of ammonia to ammonium is dependent on pH, temperature, and the ionic strength of the solution. At higher pH the ammonia gas is prevalent, **and being a gas, will not be rejected by a RO** (similar to carbon dioxide gas). **At lower pH, the ammonium ion is prevalent and is rejected by a RO**. Ammonia and ammonium exists in an equilibrium at varying relative concentrations in the general pH range of 7.2 to 11.5.

RO units remove all hardness from the water, it also removes almost all dissolved gases, driving the Ph below 7.0. The ammonia turns to ammonium and 85%-95% of it is removed.

There are some ammonia air filters that offers 94-97% removal of ammonia from air.

Additional to this you can also use biological filtration techniques (biological ammonia treatment system) to remove ammonia, which is a commonly used method. This can be used after our filtration.