



Kinetico Water Treatment Systems with Reverse Osmosis Can Reduce Pharmaceuticals Most Commonly Found in United States Water Supplies

A recent CBS Evening News segment listed 26 trace pharmaceuticals found in United States drinking water supplies. While no water treatment system can claim to eliminate all trace pharmaceuticals in drinking water, Kinetico drinking water systems with Reverse Osmosis (RO) technology are capable of reducing compounds larger than 100 Molecular Weight.

The Science Behind the Solution

Molecular weight (MW) is calculated by adding the weight of the individual atoms which make up a molecule or compound. For example, pure water is composed of two hydrogen atoms each having a molecular weight of 1 g/mol, and one Oxygen atom weighing 16/g/mol. This gives the water molecule a combined weight of 18 g/mol. This relatively low molecular weight allows water to pass easily through the RO system. RO membranes such as those utilized in Kinetico’s home water treatment systems typically block molecular compounds having a molecular weight of 100 or greater. Caffeine for instance is a compound found in beverages and certain diet pills. It is composed of eight carbon atoms, ten hydrogen atoms, four nitrogen atoms and two oxygen atoms. When you add up the weights of the individual atoms the result is an atomic weight of roughly 194, well within the range of positive rejection. But the Kinetico system doesn’t stop there. By employing additional treatment technologies into the system, such as the MAC Guard® filter utilizing carbon adsorption technology, an additional barrier to passage is provided.

“For a treatment system to be truly effective it must combine multiple technologies” Says Shamus Hurley, president of Kinetico Incorporated.

Molecular Weight of Pharmaceutical Chemicals Commonly Found in Drinking Water

