



## **Nitrate in Drinking Water – Frequently Asked Questions**

WQA proudly serves as an educator of water treatment professionals, certifier of water treatment product, public information resources and voice of water quality improvement industry. This document addresses frequently asked questions about nitrates in drinking water, developed by the staff at WQA.

### **1. What are nitrates and how do they get into my drinking water?**

Nitrates are not naturally occurring in ground water. They are formed at the surface when oxygen and nitrogen come into contact with each other. These then find their way to local wells.

### **2. What are the health effects of nitrates?**

Infants less than six months old have a condition in their digestive systems which allows for the chemical reduction of nitrate to nitrite. The nitrite absorbs through the stomach and reacts with hemoglobin to form methemoglobin, which does not have the oxygen carrying capacity of hemoglobin. Thus, the oxygen deficiency in the infant's blood results in the "blue baby" syndrome. When the nitrate-contaminating source is removed, the effects are reversible. In severe, untreated cases, brain damage and eventually death can result from suffocation due to lack of oxygen. Early symptoms of methemoglobinemia can include irritability, lack of energy, headache, dizziness, vomiting, diarrhea, labored breathing, and a blue-gray or pale purple coloration to areas around the eyes, mouth, lips, hands and feet. Nitrates and nitrites are sometimes a problem in drinking water for humans older than six months of age; extreme levels can be associated with central nervous disorders in adults.

### **3. What is the US Environmental Protection Agency (EPA) maximum contaminant level for Nitrates?**

The USEPA Primary drinking water limit for nitrates is 10 ppm, when measured as the concentration of nitrogen.

### **4. Can nitrates be removed from drinking water?**

Yes.

Point of Entry (POE) and Point of Use (POU) technologies can be used to treat contaminants such as nitrates. You will need to make sure that the POU treatment system has been certified to remove nitrates. The concentration of nitrates in the untreated water must be measured to determine if the RO can be sufficiently protective. POE treatment may be anion exchange systems or Reverse Osmosis. Anion exchange systems must be properly selected and sized to provide sufficient protection in the presence of other naturally occurring substances such as sulfates. POE systems provide protection at every tap where water may be consumed, while POU systems treat only a specific tap, usually at the kitchen sink. Proper maintenance of treatment equipment, including changing pre-filters and maintaining brine levels, is critical to performance.

**5. Does EPA certify these product?**

No.

The American National Standards Institute (ANSI) accredits certification bodies such as the WQA Gold Seal program to test and certify products to the material safety requirements and contaminant reduction claims, as specified by the standards.

Products that display the certification body's seal provide assurance that they have been rigorously tested and meet the requirements of the standard, program policies and plant inspection policies. Visit [WQA.org](http://WQA.org) for a full list of WQA certified products.

**6. Is the Water Quality Association the only organization that can certify products?**

No.

The NSF International, UL and IAMPO are some of the other certifying bodies.