

FACT SHEET

Nitrate

What is it?

Nitrates are nitrogen-oxygen chemical units that combine with various organic and inorganic compounds. They are essential nutrients for plants.

Are there other names for it?

Nitrate is sometimes called saltpeter, niter, or salt of nitric acid.

Where does it come from?

Nitrates are very soluble and do not bind with the soil so the possibility is high for them to migrate to ground water. The greatest source of nitrate in water is from fertilizer. There are many more sources to consider. Septic tank discharge and feedlot runoff can be significant sources. Nitrates are also the byproduct of plant and animal decomposition. Naturally occurring nitrate ores are present in some locations. In areas where cyanide has been used in mining processes, nitrate occurs as a degradation product of the cyanide. Nitrate may also be present as a result of use of explosives.

Why should I be concerned about it?

Nitrates are colorless and odorless. The only sure way to know how much nitrate is present in your water is to have it tested.

The USEPA has set a maximum contaminant level of 10 mg/L of nitrate in drinking water. The primary concern with nitrate is that high levels of nitrate can cause "blue baby syndrome". In blue baby syndrome the nitrate is reduced to nitrite in the infants stomach and as the nitrite enters the bloodstream it interferes with the blood's ability to carry oxygen to the body. Symptoms include shortness of breath and blueness of the skin. Healthy adults are not as susceptible to the effects of nitrate due to stronger stomach acid and larger blood volume.

Long term exposure to levels of nitrate above 10 mg/L have potential to cause diuresis (excessive discharge of urine), increased starchy deposits, hemorrhaging of the spleen and gastrointestinal cancer.

What effect will boiling have on it?

Nitrates do not evaporate. Boiling water will not remove the nitrates, but will concentrate them.

How do I remove it?

The most common methods of removal of nitrate from water are reverse osmosis and ion exchange.