

CHEMICALS

FROM A12

Arsenic

Public health goal: zero

Health impacts: Skin damage, problems with circulatory systems, may have increased cancer risk

Source: Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes; gas and oil well drilling

Barium

Public health goal: 2 mg/L

Health impacts: Increase in blood pressure

Source: Discharge of gas and oil drilling wastes; discharge from metal refineries; erosion of natural deposits

Haloacetic acids

Public health goal: varies from zero to 0.3 mg/L

Health impacts: Increased risk of cancer

Source: Byproduct of drinking water disinfection

Cadmium

Public health goal: 0.005 mg/L

Health impacts: Kidney damage

Source: Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints; coal mining

Total Trihalomethanes

Public health goal: varies from zero to 0.06 mg/L

Health impacts: Liver, kidney or central nervous system problems; increased risk of cancer

Source: Byproduct of drinking water disinfection

Copper

Public health goal: 1.3 mg/L

Health impacts: Short term exposure: Gastrointestinal distress; Long term exposure: Liver or kidney damage; People with Wilson's disease should consult their personal doctor if the amount of copper in their water exceeds the action level

Source: Corrosion of household plumbing systems; erosion of natural deposits

Thallium

Public health goal: 0.002 mg/L

Health impacts: Hair loss; changes in blood; kidney, intestine, or liver problems

Source: Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

Flouride

Public health goal: 2 mg/L (Pennsylvania)

Health impacts: Bone disease (pain and tenderness of the bones); Children may get mottled teeth

Source: Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories

Lead

Public health goal: zero

Health impacts: Infants and children: Developmental delays; children could show slight deficits in attention span and learning abilities; Adults: Kidney problems; high blood pressure

Source: Corrosion of household plumbing systems; erosion of natural deposits
Lead pipes were banned in America in 1986, although it continued to be used to create brass pipes and other fittings until 2014.

Nitrate

Public health goal: 10 mg/L

Health impacts: Infants below the age of 6 months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.
Source: Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits

Pesticides/Herbicides

Public health goal: varies by chemical

Health impacts: varies, although many are carcinogens

Source: Runoff from agriculture and residential neighborhoods.

Radionuclides

Public health goal: zero

Health impacts: Increased risk of cancer

Source: The EPA identifies four significant radio-

nuclides — alpha and beta particles, radium and uranium — for which there is no acceptable level in drinking water. Most of them exist in natural deposits while others could also enter the water supply via the decay of man-made deposits. All of them emit toxic radiation.

Selenium

Public health goal: 0.05 mg/L

Health impacts: Hair or fingernail loss; numbness in fingers or toes; circulatory problems
Source: Discharge from petroleum refineries; erosion of natural deposits; discharge from mines

Sulfate

Public health goal: n/a (guideline of 250 mg/L)

Health impacts: Minimal. Can cause stomach upset, diarrhea.

Source: Naturally occurring; can cause "rotten egg smell"

Cyanide

Public health goal: 0.2 mg/L

Health impacts: Nerve damage or thyroid problems

Source: Discharge from steel/metal factories; discharge from plastic and fertilizer factories