

WATER QUALITY GLOSSARY



Glossary of Terms

Ammonia

Ammonia is a colorless, pungent gaseous compound of hydrogen and nitrogen that is highly soluble in water. Ammonia has been used in municipal treatment systems for more than 70 years to prolong the effectiveness of disinfection chlorine added to drinking water.

Bacteria

Bacteria are microscopic living organisms, usually one-celled, that can be found everywhere. They can be dangerous, such as when they cause infection, or beneficial, as in the process of fermentation (such as in wine) and that of decomposition.

Blue Baby Syndrome (Infant Methemoglobinemia)

Methemoglobinemia, also known as "blue baby syndrome," can be inherited or acquired. The acquired form, such as from excessive nitrate exposure, is a serious medical emergency.

Boil Water Orders

A boil-water advisory or boil-water order is a public health advisory or directive given by government or health authorities to consumers when a community's drinking water is, or could be, contaminated by pathogens.

Bubbles (in water)

Bubbles are formed from the gases in the air: nitrogen and oxygen. The amount of air in water is dependent on the temperature of the water. Cold water can hold more dissolved air than warm water.

Calcium

Calcium is naturally present in water. It may dissolve from rocks such as limestone, marble, calcite, dolomite, gypsum, fluorite and apatite. Calcium is a determinant of water hardness.

Chemicals

The practice of making water safe to drink actually involves adding large amounts of chemicals to it. Water treatment facilities add enough chemicals to destroy contaminants and protect the safe delivery throughout the distribution system.

Chloroform

Chloroform is an organic compound part of the trihalomethanes. It is derived primarily from various industrial and chemical processes, or as a by-product of disinfecting water with chlorine.

Chromium 6 (Hexavalent Chromium)

Hexavalent chromium is one of the chemical forms of chromium, which can be present in different forms in the environment, changing from one form to another in water and soil. Hexavalent chromium is also commonly called chromium 6, chromium VI, chrome 6, Cr(VI), Cr+6 or hex chrome.

Cloudiness (water)

The cloudiness might be caused by the water in the pipes being under a bit more pressure than the water in the glass, but is more likely due to tiny air bubbles in the water (bubbles will rise and disappear). Another cause could come from calcium. In certain waters, the white calcium carbonate will precipitate when the water is cold. The water will appear white and the precipitates will settle to the bottom of the container within 30 minutes of standing. Water containing calcium carbonate precipitate is perfectly safe to drink and use for cooking, although unappealing to the eye.

Coliforms

A group of gram-negative bacteria (most common being the escherichia coli or E. coli which can grow at elevated temperatures) found in the intestinal tract (therefore in the feces) of humans and other animals. The presence of coliform bacteria in drinking water may indicate a possible presence of harmful, disease-causing organisms.

Copper

Copper is a naturally occurring metal found in rock, soil, water, and sediment.

Corrosion

Corrosion is the process by which something deteriorates because of oxidation, a chemical action that creates oxides that flake away from the base. Corrosion in drinking water pipes is caused by "aggressive water;" water that will dissolve materials it comes in contact with.

Disinfection By-Products (DBPs)

Disinfection by-products (DBPs) result from chemical reactions between organic and inorganic matter in water with chemical treatment agents during the water disinfection process.

Dissolved Solids

Dissolved solids, or also referred to as total dissolved solids, are any combination of minerals, salts, metals, cations or anions dissolved in water.

Do Not Use Orders

Depending on the threat, a "Boil Water Order," "Do Not Drink Order," or a "Do Not Use Order" may be issued. A Drinking Water Order Policy is in place to help the Drinking Water Program and public water systems make important decisions on when a drinking water order should be issued and when it can be removed.

Dysentery

Dysentery is an inflammatory disease of the intestine, especially of the colon, which always results in severe diarrhea and abdominal pains. Other symptoms may include fever and a feeling of incomplete defecation. The disease is caused by several types of infectious pathogens such as bacteria, viruses and parasites. Utilities treat the water to prevent these pathogens.

Emergency Water Storage

A rule of thumb is to store one gallon of water per person per day. The recommendation is to store enough water for at least three days.

EPA (USEPA)

United State Environmental Protection Agency sets regulatory limits for the amounts of certain contaminants in water provided by public water systems.

Escherichia Coli (E. coli)

Escherichia coli (E. coli) is a bacteria that is found in the intestines of both humans and animals. In most cases, this bacteria is harmless, and helps in the digestion of food. However, certain strains of E. coli can cause infection and symptoms, including diarrhea.

Filters

Water filters are available from whole house systems to those that fit directly on your tap, to portable pitchers that fit on the shelf in your refrigerator. Filters can treat contaminants, or just improve taste. No single filter will remove all types of contaminants and most filters are very specific in what they will effectively remove. One note of caution regarding water filters: Make sure you follow the manufacturer's guidelines for replacing the filter. A neglected water filter system can compromise your health, through build-up of bacteria, more than not using a filter at all.

Fish Care and Potable Water

Chlorine and chloramine are found in city water and must be removed for fish. The chlorine in tap water is toxic to fish. Use a dechlorinator to clean any water before adding it to the aquarium.

Flavor

Pure water is colorless, odorless and tasteless. According to the source of the water, there could be a detectable level of rotten-egg (sulfur); earthy/musty (algae/fungi); metallic, chlorinous, minerals, etc. Potable water- what we drink everyday- has chloramine added to the supply as a means to destroy bacteria and other microbes.

Fluoride

Fluoride is a mixture of chemicals that is sometimes added to drinking water and toothpaste because it is considered to be good for people's teeth.

Flushing Water Mains

Water main flushing is a routine operation done to clean and maintain our water system. During this activity, water is forced through underground water mains at high speed and flushed out of fire hydrants to remove accumulated sediment. This flushing is done until the water coming through the main runs clear.

Fungi

Fungi are eukaryotic, heterotrophic organisms. Fungi include both single-celled yeasts and multi-cellular filamentous fungi. Fungi can enter drinking water distribution systems through several contamination pathways, including treatment breakthrough, deficiencies in stored water facilities cross-connections, mains breaks and intrusions, and during mains installation and maintenance.

GAC (Granular Activated Carbon)

A granular activated carbon (GAC) filter is a proven option to remove certain chemicals, particularly organic chemicals, from water. GAC filters also can be used to remove chemicals that give objectionable odors or tastes to water such as hydrogen sulfide (rotten eggs odor) or chlorine.

Hot Water Heaters

Drain your water heater annually. Sediment, bacteria and metals can build up in the water heater tank. This can impact household water quality and water pressure. Water from a heater is more likely to contain rust, copper and lead coming from household plumbing.

Hydrants

A fire hydrant, also called a fireplug, fire pump, jockey pump, johnny pump, or simply pump, is a critical piece of any emergency response system used to preserve lives and property. It is a connection point by which firefighters can tap into a water supply.

Hydrogen Sulfide

Hydrogen sulfide occurs both naturally and from human-made processes. It is in the gases from volcanoes, sulfur springs, wells, and stagnant bodies of water.

Hyponatremia

Hyponatremia occurs when the concentration of sodium in your blood is abnormally low. Sodium is an electrolyte, and it helps regulate the amount of water that's in and around your cells. This serious condition is also known as water intoxication (drinking too much water).

Iron

Iron is an element found in abundance in many rocks and soils. It usually takes the form of a hard, dark-grey metal. Iron is an essential mineral, but when it gets into your drinking water, it needs to be removed. Iron in water has many negative effects.

Larvae Infestation

Larvae is the active immature form of an insect, especially one that differs greatly from the adult and forms the stage between egg and pupa. Infestation of drinking water usually are from midge larvae, flatworms, roundworms (otherwise known as nematodes), and rotifers.

Lead

Lead is an element found in natural deposits that is used in various manufacturing processes. Plumbing products used for drinking water are only allowed to have up to 0.25% lead in the wetted surface material of that product. This is a federal regulation enforced by USEPA.

Leaks

Leaking water pipes can allow potentially harmful contaminants into our drinking water. The easiest way to determine if you have a leak is to shut off all water-using appliances, faucets and outside watering tools (do not shut off the main water line to your home), and then check to see if the flow indicator on your water meter has completely stopped moving. If it continues to move, you've probably got a leak somewhere.

Legionella

Legionella is a bacteria that can cause a serious type of pneumonia (lung infection) called Legionnaires' disease. Domestic hot-water systems are frequently implicated as the source of legionellosis (Legionnaires' disease) outbreaks. It is important to maintain hot water systems at 140°F degrees.

Magnesium

Magnesium makes up 2 percent of the Earth's crust. It is one of the main determinants of water hardness, next to calcium.

Manganese

Manganese is not found as a free element in nature; it is often found in minerals in combination with iron.

Maximum Contamination Level Goals

Maximum contaminant level goal: the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are non-enforceable public health goals.

Metals

Metals are a solid material that is typically hard, shiny, malleable, fusible, and ductile, with good electrical and thermal conductivity (e.g., iron, gold, silver, copper, and aluminum, and alloys such as brass and steel).

Meters (Water)

Water metering is the process of measuring water use. Meters are used to measure the volume of water used by residential and commercial buildings that are supplied with water by a public water supply system.

Minerals

Minerals are a solid inorganic substance of natural occurrence. Calcium, sodium, and magnesium are some of the most common minerals found in drinking water.

Nitrates

Nitrates (or nitrites) are natural chemicals that are found in the soil, air and water.

Odor (Drinking Water Complaints)

Typical complaints regarding the taste and odor of water are: chlorine smell or taste, rotten egg smell, petroleum smell or taste, metallic smell or taste; salty taste, and earthy or fishy smells and tastes. Odor described as sulfur or rotten egg is most likely from bacteria growing in your sink drain or hot water heater.

Ozone

Ozone is a colorless, odorless reactive gas comprised of three oxygen atoms. Ozone is one of the strongest disinfectants and oxidants available in drinking water treatment. Ozone must be generated onsite and used immediately.

Pathogens

Pathogen is a bacterium, virus, or other microorganism that can cause disease.

Perchlorate

Perchlorate is a naturally occurring and manufactured chemical anion that consists of one chlorine atom bonded to four oxygen atoms (ClO₄⁻).

Pharmaceuticals and Personal Care Products (PPCPs)

Pharmaceuticals and personal care products (PPCPs) comprise a diverse group of chemicals including, but not limited to, prescription and over-the-counter human drugs, veterinary drugs, diagnostic agents, nutritional supplements and other consumer products, such as fragrances, cosmetics, bug repellent and sun-screen agents.

Point of Use Systems (POU)

POU systems are installed at a single water connection typically under the counter of a kitchen or bathroom sink. These lower capacity, smaller systems will filter water at the actual "point" where it is being used.

Protozoa

Protozoa are microscopic, one-celled organisms that can be free-living or parasitic in nature.

Radioactivity of Water

Radiological contamination of water is due to the presence of natural radionuclides, which are defined as atoms with unstable nuclei.

Trihalomethanes (TTHMs)

Trihalomethanes are the result of a reaction between the chlorine used for disinfecting tap water and natural organic matter in the water. The trihalomethanes are chloroform, bromodichloromethane, dibromochloromethane, and bromoform.

Turbidity

Turbidity refers to cloudiness of water.

Unregulated Contaminant Monitoring Rule (UCMR)

The Safe Drinking Water Act (SDWA), as amended in 1996, requires the United States Environmental Protection Agency (EPA) to establish criteria for a program to monitor unregulated contaminants and to publish a list of contaminants to be monitored every five years.

World Health Organization (WHO)

The World Health Organization (WHO) is a specialized agency of the United Nations that is concerned with international public health.

Zinc

Zinc in its elemental form is a bluish-white metal. Zinc is found naturally at low concentrations in many rocks and soils principally as sulphide ores and to a lesser degree as carbonates.