Chlorinated Drinking Water

Introduction

Safe drinking water supplies are critical to our health and well being. Untreated sources of water such as streams, bores, dams and rainwater tanks can contain harmful micro-organisms that cause serious illness and in some cases, death.

For more than 100 years chlorine has been used around the world to disinfect drinking water supplies. As a result many water borne diseases such as cholera, dysentery, and typhoid have been effectively controlled.

Why is chlorine used so widely around the world?

Chlorine is a simple, reliable, effective, relatively inexpensive and, above all else, safe, way to protect drinking water supplies against contamination by micro-biological organisms. As it has been used for so many years the methods and equipment needed to use it safely are well designed, and its effectiveness is well understood.

One other important benefit of using chlorine in drinking water is that once treated a small residual amount of chlorine remains in the water distribution system to provide continuing protection from microbiological contamination while the water is delivered to your tap.

As chlorine is so effective and relatively easy to use it has become one of the most widely used disinfectants found in homes, industry and health care facilities. Chlorine based products are routinely used to sterilise baby feeding bottles, treat domestic and commercial swimming pools, spas and hydrotherapy pools.

Is Chlorine effective against all micro-organisms?

When used at levels that comply with the Australian Drinking Water Guidelines, chlorine is effective against virtually all micro-organisms that can pose a threat to your health, such as *Escherichia coli, Listeria, Salmonella and Naegleria spp.*

How much Chlorine is in our water?

The Australian Drinking Water Guidelines state that the level of chlorine in scheme (piped) drinking water should be no more than 5mg/L. Normal chlorine concentrations in scheme drinking water pipeline systems will range from 0.5mg/L to 1.5 mg/L. It is quite normal for chlorine in Western Australian drinking water to be at or below these levels. Chlorine levels may vary due to the flow rate of the water in the system, your proximity to the water treatment plant and during maintenance periods.

Are there any adverse health effects with chlorine?

No. Adverse health effects have not been seen in people drinking water chlorinated at levels as high as ten times the Australian Drinking Water Guidelines maximum recommended level of 5mg/L. Long term animal toxicity studies have revealed no carcinogenic effect from drinking chlorinated water.

Does chlorine produce by products?

When water is treated with chlorine it is possible that small amounts of chemical byproducts such as trihalomethanes (THMs) can be formed. Many scientific investigations have been conducted around the world over the past 35 years to determine if a health risk exists. To date no conclusive evidence has been found. Even so, as a precaution, the Australian Drinking Water Guidelines limit the amount of THMs in drinking water.

The Department of Health requires all drinking water providers to monitor and report the level of both chlorine and THMs in drinking water supplies. The Department also requires THM levels to not exceed the maximum recommended by the Australian Drinking Water Guidelines.

What if I can taste or smell chlorine in my water?

Drinking water which sometimes may taste or smell of chlorine is still safe to drink. The smell will evaporate simply by leaving a jug of uncovered water in the fridge for a short period of time. Alternatively you can use a simple jug filter fitted with an activated carbon filter cartridge, or just pour water from one jug to another several times.

Should I treat my water?

There is no need for householders to further chlorinate water from a licensed scheme drinking water supplier. However, if you obtain your drinking water from a rainwater tank, bore or other water source, it is possible that it could be microbiologically contaminated. The Department of Health recommends that any water supply that is not provided by a licensed drinking water service provider be professionally tested and treated (with chlorine) before it is used for domestic purposes. (e.g. drinking, bathing, cooking etc). The following table outlines the amount of chlorine that is required to safely treat water. Pool grade non stabilised chlorine can be used.

Treatment	Calcium hypochlorite 60-70%	Sodium hypochlorite 12.5%
Initial dose	7 grams / 1000 litres	40 mL / 1000 litres
Weekly	1 gram / 1000 litres	4mL / 1000 litres

Note:

- Do not use stabilised chlorine (containing cyanurate).
- Allow a minimum of two hours before drinking
- Mix the chlorine in a clean plastic bucket IN THE OPEN AIR before adding it to the tank.
- **Do not pour water onto chlorine. Always add chlorine to water.**

How can I get my water tested?

Water testing can be done by any National Association of Testing Authorities (NATA) laboratory. The Department of Health has arranged with a number of Western Australian NATA laboratories a uniform testing process called a “Standard Drinking Water Assay” that will test all the common microbiological and chemical contaminants. For more information about the Standard Drinking Water Assay go to the Drinking Water Testing page of the Public Health website. (www.public.health.wa.gov.au)

Who makes sure that your scheme drinking water is safe?

The Department of Health continually monitors the microbiological and chemical quality of drinking water supplied by all licensed scheme drinking water providers to ensure that it is safe to consume. If you are concerned about the quality of your drinking water please contact us.

Summary:

- Chlorinated water is safe to drink as long as the levels comply with the Australian Drinking Water Guidelines (no more than 5mg/L).
- You can reduce chlorine smell or odour by placing a jug of water in the fridge uncovered.
- It is not necessary to treat scheme water as it is continually monitored by the Department of Health.
- Bore, rain water tank and other water sources should be professionally tested and treated before the water is used for drinking purposes.

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