

Chlorine (Sodium Hypochlorite)

Source Protection	Safe Transportation	Sedimentation	Filtration	Disinfection	Safe Storage
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What is it?

Chlorine is a popular chemical used to disinfect drinking water. It forms hypochlorous acid when added to water. This acid reacts with microorganisms, inactivating them. There are many different brands of liquid chlorine products that can be used for household water treatment.

Performance

Microbiological Effectiveness:

Parameter	Effectiveness
Bacteria	Very Effective (>99%)
Viruses	Very Effective (>99%)
Cryptosporidium (Protozoa)	Not Effective
Giardia (Protozoa)	Depends on temperature, pH, and contact time
Ascaris (Helminth)	Not Effective



Other Parameters

Not effective for chemical contaminants or turbidity.

Source Water Requirements

Turbidity, organic matter, pH, and temperature affect how well chlorine works and how much chlorine is required. When possible, sediment or filter turbid water before using chlorine. Disinfection is less reliable if the water's a pH is below 5.5 or above 7.5.

Capacity

Depends on container size and dosing instructions. Treatment time of at least 30 minutes. Follow manufacturer's instructions.

Lifespan

Typical shelf life for liquid chlorine products is between six weeks and one year. Refer to packaging.

Ease of Use & Acceptability

Operation & Maintenance

User adds an appropriate dose (determined by manufacturer's instructions or careful dosing calculations), stirs gently, and waits for at least 30 minutes.

Repair & Replacement

New solution must be purchased regularly (often every six months or when solution runs out).

User Considerations & Preferences

Determining appropriate doses can be challenging if products lack dosing instructions. Chlorine products degrade over time. Some users do not like the taste or smell of chlorine.

Feasibility

Availability

Many chlorine products are produced and manufactured locally for water treatment. It is possible to make chlorine with salt, water, and electricity—but the resulting solution must be stabilized or used immediately.

Cost

Varies, often around US\$0.45–3.29 per 1,000 L.

Size & Weight

Bottles of chlorine solution vary in size and weight but are typically easy to transport.

More Information

Details and references: www.hwts.info/products-technologies/4c1aeb66/Chlorine-Sodium-Hypochlorite

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