

## Silver

Silver is an effective water disinfectant that controls bacterial contamination especially in swimming pools and spas. In the context of water disinfection, silver is not the familiar shiny metal but rather silver salts or peroxides. Silver kills all forms of bacteria including *E. coli* (the bug responsible for the Walkerton tragedy), coliform, staphylococcus and pseudomonas

Compared to chlorine, silver is more effective in controlling various strains of microbes. In addition, it does not alter the acidity or alkalinity of water like other chemicals, therefore there is no need for additional chemicals to adjust the chemicals of the water. When added in prescribed dosages, silver is non-toxic to humans and has no detrimental health effects. Ingestion of minute amount of silver may, however, cause a cosmetic discoloration of skin tissues that does not impair body functions.

An interesting application of silver-based biocides is in icemakers. Bacteria might grow in evaporators and water troughs, especially in old stainless steel machines. Modern units use plastic components, and biocidal silver is incorporated into the molded plastic part or applied onto a coating. Silver is safe for human and does not leave any by-products.

Bacteria and slime may grow in home plumbing systems and water filters where moist and warm conditions exist. However, this is not considered a major health concern. Silver is added to some type of water filters to avoid microbial build up, especially in activated carbon (charcoal) filters. Usually silver is combined with copper ions to enhance protection against fungal growth in and prevent fatal diseases like Legionnaires' disease (a type of pneumonia) from spreading in water supplies.



**Silver is used to disinfect swimming pools**



**Modern ice machines incorporate biocidal silver to avoid the growth of bacteria**