Treatment performance	Conventional treatment (coagulation, sedimentation, filtration) and lime softening are effective for removing ionic silver; conventional treatment is also expected to be effective for removing coated silver nanoparticles
Guideline value derivation	
• allocation to water	80%
• allocation to water	60 kg adult
• consumption	2 litres/day
Additional comments	The provisional reference value is applicable particularly where silver is used in point-of-use water treatment devices. However, silver is not recommended for disinfection of drinking-water including in point-of-use water treatment devices (see Part III of the supporting document *Alternative drinking-water disinfectants: Bromine, iodine and silver*; Annex 1). It is also noted that silver with copper may be necessary to control *Legionella* in the distribution systems of buildings, and the risks of legionellosis outweigh the risks from low levels of silver ions (usually in the low µg/l range) that may be detected in drinking-water as a result of such use. See *Silver in drinking-water*, Annex 2, for further information, including on *Legionella* control measures.
Assessment date	2021
Principal reference	WHO (2021) *Silver in drinking-water*

* Although a formal guideline value cannot be established, the provisional reference value was derived based on limited available studies, recognizing that a "bounding value" may be useful, to provide guidance to Member States in the event of need. Reference values are too uncertain to be used for developing regulations or standards.

The only obvious sign of silver overload is argyria, a condition in which skin and hair are heavily discoloured by silver in the tissues. In argyria, silver is deposited in various organs (e.g. skin, kidney, liver) after oral ingestion of silver in its ionic form or as silver nanoparticles, oxidizing to insoluble silver sulfide, which is responsible for the discolouring effects. It is difficult to determine the lowest dose that may lead to development of argyria, and the toxicological database on silver is not adequate to support derivation of a formal guideline value. Furthermore, a formal guideline value is considered unnecessary since silver usually occurs naturally in drinking-water at concentrations well below those of health concern. Nevertheless, a bounding value (provisional reference value) may provide a useful benchmark where elevated concentrations of silver in drinking-water may be expected. The provisional reference value of 0.1 mg/l is supported by the prior assessments that concluded that 10 g of ingested silver can be considered a human NOAEL (WHO, 1984a, b, 1993; US EPA 1992). Over a 70-year period, assuming a drinking-water intake of 2 litres/day, 0.1 mg/l is a concentration in drinking-water that would give a total dose of half this NOAEL.

Simazine

Simazine (CAS No. 122-34-9) is a pre-emergence herbicide used on a number of crops as well as in non-crop areas. It is fairly resistant to physical and chemical dissipation processes in the soil. It is persistent and mobile in the environment.

Guideline value	0.002 mg/l (2 µg/l)
Occurrence	Frequently detected in groundwater and surface water at concentrations of up to a few micrograms per litre
TDI	0.52 µg/kg body weight, based on a NOAEL of 0.52 mg/kg body weight from a long-term study in the rat (based on weight changes, effects on haematological parameters and an increase in mammary tumours) and an uncertainty factor of 1000 (100 for interspecies and intraspecies variation and 10 for possible non-genotoxic carcinogenicity)
Limit of detection	0.01 µg/l by GC-MS; 0.1–0.2 µg/l by GC with flame thermionic detection
Treatment performance	0.1 µg/l should be achievable using GAC
Guideline value derivation	
• allocation to water	10% of TDI
• weight	60 kg adult
• consumption	2 litres/day
Assessment date	1993
Principal reference	WHO (2003) *Simazine in drinking-water*

Simazine does not appear to be genotoxic in mammalian systems. Recent studies have shown an increase in mammary tumours in the female rat but no effects in the mouse. IARC has classified simazine in Group 3 (not classifiable as to its carcinogenicity to humans).

Sodium

Sodium salts (e.g. sodium chloride) are found in virtually all food (the main source of daily exposure) and drinking-water. Although concentrations of sodium in potable water are typically less than 20 mg/l, they can greatly exceed this in some countries. The levels of sodium salts in air are normally low in relation to those in food or water. It should be noted that some water softeners can add significantly to the sodium content of drinking-water.

Reason for not establishing a guideline value	Not of health concern at levels found in drinking-water
Additional comments	May affect acceptability of drinking-water
Assessment date	1993
Principal reference	WHO (2003) *Sodium in drinking-water*

No firm conclusions can be drawn concerning the possible association between sodium in drinking-water and the occurrence of hypertension. Therefore, no health-based guideline value is proposed. However, concentrations in excess of 200 mg/l may give rise to unacceptable taste (see chapter 10).