

**2-Chlorophenol**

Data on the toxicity of 2-chlorophenol are limited. Therefore, no health-based guideline value has been derived.

**2,4-Dichlorophenol**

Data on the toxicity of 2,4-dichlorophenol are limited. Therefore, no health-based guideline value has been derived.

**2,4,6-Trichlorophenol**

2,4,6-Trichlorophenol has been reported to induce lymphomas and leukaemias in male rats and hepatic tumours in male and female mice. The compound has not been shown to be mutagenic in the Ames test but has shown weak mutagenic activity in other in vitro and in vivo studies. IARC has classified 2,4,6-trichlorophenol in Group 2B (possibly carcinogenic to humans).

**Chloropicrin**

Chloropicrin, or trichloronitromethane, is formed by the reaction of chlorine with humic and amino acids and with nitrophenols. Its formation is increased in the presence of nitrates. Limited data from the USA indicate that concentrations in drinking-water are usually less than 5 µg/l.

Reason for not establishing a guideline value	Available data inadequate to permit derivation of health-based guideline value
Assessment date	1993
Principal reference	WHO (2003) <i>Chloropicrin in drinking-water</i>

Decreased survival and body weights have been reported following long-term oral exposure in laboratory animals. Chloropicrin has been shown to be mutagenic in bacterial tests and in in vitro assays in lymphocytes. Because of the high mortality in a carcinogenesis bioassay and the limited number of end-points examined in the 78-week toxicity study, the available data were considered inadequate to permit the establishment of a guideline value for chloropicrin.

**Chlorotoluron**

Chlorotoluron (CAS No. 15545-48-9) is a pre-emergence or early post-emergence herbicide that is slowly biodegradable and mobile in soil. There is only very limited exposure to this compound from food.

Guideline value	0.03 mg/l (30 µg/l)
Occurrence	Detected in drinking-water at concentrations of less than 1 µg/l
TDI	11.3 µg/kg body weight, derived from a NOAEL of 11.3 mg/kg body weight per day for systemic effects in a 2-year feeding study in mice using an uncertainty factor of 1000 (100 for interspecies and intraspecies variation and 10 for evidence of carcinogenicity)

## 12. CHEMICAL FACT SHEETS

Limit of detection	0.1 µg/l by separation by reversed-phase HPLC followed by UV and electrochemical detection
Treatment performance	0.1 µg/l should be achievable using GAC
Guideline value derivation	<ul style="list-style-type: none"> <li>● allocation to water 10% of TDI</li> <li>● weight 60 kg adult</li> <li>● consumption 2 litres/day</li> </ul>
Assessment date	1993
Principal reference	WHO (2003) <i>Chlorotoluron in drinking-water</i>

Chlorotoluron is of low toxicity following single, short-term and long-term exposures in experimental animals, but it has been shown to cause an increase in adenomas and carcinomas of the kidneys of male mice given high doses for 2 years. As no carcinogenic effects were reported in a 2-year study in rats, it has been suggested that chlorotoluron has a carcinogenic potential that is both species and sex specific. Chlorotoluron and its metabolites have shown no evidence of genotoxicity.

### **Chlorpyrifos**

Chlorpyrifos (CAS No. 2921-88-2) is a broad-spectrum organophosphorus insecticide used for the control of mosquitoes, flies, various crop pests in soil and on foliage, household pests and aquatic larvae. Although it is not recommended for addition to water for public health purposes by the WHO Pesticide Evaluation Scheme (WHOPES), it may be used in some countries as an aquatic larvicide for the control of mosquito larvae. Chlorpyrifos is strongly absorbed by soil and does not readily leach from it, degrading slowly by microbial action. It has a low solubility in water and great tendency to partition from aqueous phases into organic phases in the environment.

Guideline value	0.03 mg/l (30 µg/l)
Occurrence	Detected in surface waters in the USA, usually at concentrations below 0.1 µg/l; also detected in groundwater in less than 1% of the wells tested, usually at concentrations below 0.01 µg/l
ADI	0–0.01 mg/kg body weight on the basis of a NOAEL of 1 mg/kg body weight per day for inhibition of brain acetylcholinesterase activity in studies in mice, rats and dogs, using a 100-fold uncertainty factor, and on the basis of a NOAEL of 0.1 mg/kg body weight per day for inhibition of erythrocyte acetylcholinesterase activity in a study of human subjects exposed for 9 days, using a 10-fold uncertainty factor
Limit of detection	1 µg/l by GC using ECD or flame photometric detection
Treatment performance	No data available; should be amenable to treatment by coagulation (10–20% removal), activated carbon adsorption and ozonation
Guideline value derivation	<ul style="list-style-type: none"> <li>● allocation to water 10% of upper limit of ADI</li> <li>● weight 60 kg adult</li> <li>● consumption 2 litres/day</li> </ul>