

available data, pendimethalin does not appear to have significant mutagenic activity. Long-term studies in mice and rats have not provided evidence of carcinogenicity; however, these studies have some important methodological limitations.

### **Pentachlorophenol**

Pentachlorophenol (CAS No. 87-86-5), or PCP, and other chlorophenols are used primarily for protecting wood from fungal growth. Food is usually the major source of exposure to PCP unless there is a specific local contamination of drinking-water by PCP or exposure from log homes treated with PCP.

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| Provisional guideline value         | 0.009 mg/l (9 µg/l)<br><br>The guideline value is considered provisional because of the variations in metabolism between experimental animals and humans.   |
| Occurrence                          | Concentrations in water samples are usually below 10 µg/l, although much higher concentrations in groundwater may be measured under certain conditions  |
| Basis of guideline value derivation | Multistage modelling of tumour incidence in an NTP bioassay without incorporation of a body surface area correction, recognizing that there are interspecies differences in metabolism between experimental animals and humans, with an important metabolite formed in rats being only a minor metabolite in humans |
| Limit of detection                  | 0.005–0.01 µg/l by GC with ECD  |
| Treatment performance               | 0.4 µg/l should be achievable using GAC   |
| Additional comments                 | The concentration of PCP associated with a 10 <sup>-5</sup> upper-bound excess lifetime cancer risk is similar to the guideline value established in the second edition, so that guideline value is retained.   |
| Assessment date                     | 1998  |
| Principal reference                 | WHO (2003) <i>Pentachlorophenol in drinking-water</i>   |

IARC classified PCP in Group 2B (possibly carcinogenic to humans) on the basis of inadequate evidence of carcinogenicity in humans but sufficient evidence in experimental animals. There is suggestive, although inconclusive, evidence of the carcinogenicity of PCP from epidemiological studies of populations exposed to mixtures that include PCP. Conclusive evidence of carcinogenicity has been obtained in one animal species (mice). Although there are notable variations in metabolism between experimental animals and humans, it was considered prudent to treat PCP as a potential carcinogen.

### **Perchlorate**

Perchlorate is a naturally occurring anion that is frequently detected in the environment. It is used primarily as an oxidizer for solid rocket fuels, automotive airbags, fireworks and road flares. Perchlorate is found in water due to contamination from perchlorate manufacturing or use, natural deposits of perchlorate, use of fertilizers containing natural deposits of perchlorate, and natural formation of perchlorate in the atmosphere and its deposition during rain or snow events. It also forms in hypochlo-