

## HISTORY OF GUIDELINE DEVELOPMENT

### Chromium

The 1958 WHO *International Standards for Drinking-water* recommended a maximum allowable concentration of 0.05 mg/L for chromium (hexavalent), based on health concerns. This value was retained in the 1963 International Standards. Chromium was not evaluated in the 1971 International Standards. In the first edition of the *Guidelines for Drinking-water Quality*, published in 1984, the guideline value of 0.05 mg/L for total chromium was retained; total chromium was specified because of difficulties in analysing for the hexavalent form only. The 1993 Guidelines questioned the guideline value of 0.05 mg/L because of the carcinogenicity of hexavalent chromium by the inhalation route and its genotoxicity, although the available toxicological data did not support the derivation of a new value. As a practical measure, 0.05 mg/L, which is considered unlikely to give rise to significant health risks, was retained as the provisional guideline value for total chromium until additional information became available and chromium could be re-evaluated. This guideline value was brought forward to the third edition of the Guidelines, published in 2004, and the fourth edition of the Guidelines, published in 2011. In the fourth edition of the Guidelines incorporating the first and second addenda, published in March 2022, the guideline value for total chromium was also brought forward with the provisional designation removed. The guideline value was deemed adequately health-protective of both cancer (in the case of hexavalent chromium) and non-cancer (in the case of trivalent and hexavalent chromium) effects, and was informed by a background document to the Guidelines, published in 2020, where additional chronic drinking-water and mode-of-action studies were reviewed. The guideline value was retained considering the health effects data, as well as achievability by water treatment and measurability by analytical methods.