Executive Summary

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1. Following the UK's exit from the European Union, the Drinking Water Inspectorate (DWI) is reviewing the UK regulatory standards for some chemicals in drinking water, including boron. To support this review, the UK Health Security Agency (UKHSA) sought advice of the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT) with respect to an appropriate health-based guidance value (HBGV) for boron.

2. The toxicity studies on boron by Heindel et al. (1992), Price et al. (1996) and Weir and Fisher (1972) have been used by a number of authoritative bodies, including the COT in 1995, as the critical studies for their health-based guidance values (HBGVs). The differences in the HBGVs derived by these bodies are due to differences in the choice of the points of departure (POD) from these critical studies, and uncertainty factors applied.

3. The COT concluded that the most sensitive effect is reduced fetal body weight and skeletal effects. A dose of 10 mg B/kg bw/day is an appropriate POD, and should be used with the default uncertainty factor of 100 to give a tolerable daily intake (TDI) of 0.1 mg/kg bw/day.