

ARfD	0.8 mg/kg bw (expressed as the diquat ion), based on a NOAEL of 75 mg/kg bw for clinical signs and decreased body weight gain in the 1st week and decreased feed consumption in a neurotoxicity study in rats and application of a safety factor of 100
Limit of detection	1 µg/l using HPLC with UV absorbance detection after solid sorbent cartridge extraction; practical quantification limit of 1 µg/l using LC-MS analysis after solid-phase extraction
Treatment performance	Conventional treatment, including coagulation and filtration, not effective; activated carbon may be effective
Health-based value derivation	
• allocation to water	20% of upper bound of unrounded ADI (0.0058 mg/kg bw)
• weight	60 kg adult
• consumption	2 litres/day
Acute health-based value derivation	
• allocation to water	100% of unrounded ARfD (0.75 mg/kg bw)
• weight	60 kg adult
• consumption	2 litres/day
Additional comments	The default allocation factor of 20% has been used to account for the fact that the available food exposure data, , which suggest that exposure via this route is low, do not generally include information from developing countries, where exposure via this route may be higher
	As a general principle, the concentration of pesticides in water, including diquat, should be kept as low as possible and concentrations should not be allowed to increase up to the health-based value.
	Further guidance on interpreting the health-based value and deciding when to monitor can be found in <a href="#">section 8.5.3</a>
Assessment date	2016
Principal references	WHO (2014). <i>Pesticide residues in food – 2013 evaluations</i> WHO (2016). <i>Diquat in drinking-water</i>

\* When a formal guideline value is not established, a “health-based value” may be determined in order to provide guidance to Member States when there is reason for local concern. Establishing a formal guideline value for such substances may encourage Member States to incorporate a value into their national standards when this may be unnecessary.

\*\* For more information on acute health-based values, see [section 8.7.5](#).

The eye is the main target organ following short-term repeated exposure in rats and dogs. Effects on kidney, liver and haematological parameters are also observed. Diquat is not carcinogenic in mice or rats. In tests for genotoxicity, diquat gave equivocal or positive responses in the mammalian cell cytogenetic assay, but was negative in the in vivo mouse micronucleus assay and dominant lethal assay. No reproductive effects were observed in a two-generation reproductive toxicity study in rats, and diquat was not teratogenic in rats or rabbits.

### **Edetic acid**

Human exposure to edetic acid, also known as ethylenediaminetetraacetic acid or EDTA, arises directly from its use in food additives, medicines and personal care and

hygiene products. Exposure to EDTA from drinking-water will be mostly very low in comparison with that from other sources. Once EDTA is present in the aquatic environment, its speciation will depend on the water quality and the presence of trace metals with which it will combine. The removal of EDTA from communal wastewater by biodegradation in sewage purification plants is very limited.

Guideline value	EDTA (as the free acid): 0.6 mg/l (600 µg/l)
Occurrence	Present in surface waters generally at concentrations below 70 µg/l, although higher concentrations (900 µg/l) have been measured; detected in drinking-water prepared from surface waters at concentrations of 10–30 µg/l
ADI	0–1.9 mg/kg body weight as the free acid (ADI of 0–2.5 mg/kg body weight proposed by JECFA for calcium disodium edetate as a food additive)
Limit of detection	1 µg/l by potentiometric stripping analysis
Treatment performance	0.01 mg/l using GAC plus ozonation
Guideline value derivation	
• allocation to water	1% of upper limit of ADI
• weight	60 kg adult
• consumption	2 litres/day
Additional comments	Concern has been expressed over the ability of EDTA to complex and therefore reduce the availability of zinc. However, this is of significance only at elevated doses substantially in excess of those encountered in the environment.
Assessment date	1998
Principal reference	WHO (2003) <i>Edetic acid (EDTA) in drinking-water</i>

Calcium disodium edetate is poorly absorbed from the gut. The long-term toxicity of EDTA is complicated by its ability to chelate essential and toxic metals. Those toxicological studies that are available indicate that the apparent toxicological effects of EDTA have in fact been due to zinc deficiency as a consequence of complexation. EDTA does not appear to be teratogenic or carcinogenic in experimental animals. The vast clinical experience of the use of EDTA in the treatment of metal poisoning has demonstrated its safety in humans.

### Endosulfan

Endosulfan (CAS No. 115-29-7) is an insecticide used in countries throughout the world to control pests on fruit, vegetables and tea and on non-food crops such as tobacco and cotton. In addition to its agricultural use, it is used in the control of the tsetse fly, as a wood preservative and for the control of home garden pests. Endosulfan contamination does not appear to be widespread in the aquatic environment, but the chemical has been found in agricultural runoff and rivers in industrialized areas