

Alachlor

Alachlor (Chemical Abstracts Service [CAS] No. 15972-60-8) is a pre-emergence and post-emergence herbicide used to control annual grasses and many broad-leaved weeds in maize and a number of other crops. It is lost from soil mainly through volatilization, photodegradation and biodegradation. Many alachlor degradation products have been identified in soil. Alachlor was included in the Prior Informed Consent procedure of the Rotterdam Convention on the basis of the final regulatory actions taken by the European Community and by Canada to ban alachlor as a pesticide.

Guideline value	0.02 mg/l (20 µg/l)
Occurrence	Has been detected in groundwater and surface water; has also been detected in drinking-water at levels below 0.002 mg/l
Basis of guideline value derivation	Calculated by applying the linearized multistage model to data on the incidence of nasal tumours in rats
Limit of detection	0.1 µg/l by gas-liquid chromatography with electrolytic conductivity detection in the nitrogen mode or by capillary column GC with a nitrogen-phosphorus detector
Treatment performance	0.001 mg/l should be achievable using granular activated carbon (GAC)
Assessment date	1993
Principal reference	WHO (2003) <i>Alachlor in drinking-water</i>

On the basis of available experimental data, evidence for the genotoxicity of alachlor is considered to be equivocal. However, a metabolite of alachlor, 2,6-diethylaniline, has been shown to be mutagenic. Available data from two studies in rats clearly indicate that alachlor is carcinogenic, causing benign and malignant tumours of the nasal turbinate, malignant stomach tumours and benign thyroid tumours.

Aldicarb

Aldicarb (CAS No. 116-06-3) is a systemic pesticide used to control nematodes in soil and insects and mites on a variety of crops. It is very soluble in water and highly mobile in soil. It degrades mainly by biodegradation and hydrolysis, persisting for weeks to months.

Guideline value	0.01 mg/l (10 µg/l)
Occurrence	Frequently found as a contaminant in groundwater in the vicinity of application areas, particularly when associated with sandy soil; concentrations in well water as high as 500 µg/l have been measured; aldicarb sulfoxide and aldicarb sulfone residues are found in an approximately 1:1 ratio in groundwater
Acceptable daily intake (ADI)	0–0.003 mg/kg body weight based on cholinesterase depression in a single oral dose study in human volunteers
Limit of detection	0.001 mg/l by reversed-phase HPLC with fluorescence detection
Treatment performance	0.001 mg/l should be achievable using GAC or ozonation