

**THE CANCER ASSOCIATION OF SOUTH AFRICA'S POSITION STATEMENT ON CANCER AND THE ENVIRONMENT**

**FACT SHEET ON DRINKING WATER**

**WHY SHOULD I CARE ABOUT DRINKING WATER?**

- Because it is possible that drinking water can be contaminated with carcinogens.

**WHICH CARCINOGENS CAN CONTAMINATE DRINKING WATER?**

**Information from Cornell University<sup>1</sup>:**

Selected list of carcinogens regulated by the EPA\*, their primary drinking water standard,\*\*and potential home treatment options\*\*\*

<b>Organic contaminant</b>	<b>Drinking water standard</b>	<b>Treatment</b>
acrylamide	n/a	AC
adipate	400 mcg/L	AC, aeration
alachlor	2 mcg/L	AC
atrazine	3 mcg/L	AC
benzene	5 mcg/L	AC
benzo(a)pyrene (PAH)	0.2 mcg/L	AC
carbon tetrachloride	5 mcg/L	AC
chlordane	40 mcg/L	AC
di(2-ethylhexyl)adipate	2 mcg/L	AC, aeration
dibromochloropropane (DBCP)	0.2 mcg/L	AC
1,2-dichloroethane	5 mcg/L	AC
1,1-dichloroethylene	7 mcg/L	AC
dichloromethane	5 mcg/L	aeration
1,2-dichloropropane	5 mcg/L	AC
dioxin (2,3,7,8-TCDD)	0.00003 mcg/L	AC
<b>Organic contaminant</b>	<b>Drinking water standard</b>	<b>Treatment</b>
di(2-ethylhexyl)phthalate (PAE)	6 mcg/L	AC

epichlorohydrin ethylene dibromide (EDB) heptachlor heptachlor epoxide hexachlorobenzene lindane pentachlorophenol (PCP) polychlorinated biphenyls (PCBs) simazine styrene tetrachloroethylene total trihalomethanes (TTHMs: bromodichloromethane, bromoform, chlorodibromomethane, chloroform) toxaphene 1,1,2-trichloroethane trichloroethylene (TCE) vinyl chloride	n/a 0.05 mcg/L 0.4 mcg/L 0.2 mcg/L 1 mcg/L 0.2 mcg/L 1 mcg/L 0.5 mcg/L 4 mcg/L 100 mcg/L 5 mcg/L 100 mcg/L (interim) 80 mcg/L (proposed) 3 mcg/L 5 mcg/L 5 mcg/L 2 mcg/L	AC AC AC AC AC AC AC AC AC AC AC AC, aeration, RO (20-90%) AC AC, aeration AC AC
<b>Inorganic contaminant</b>	<b>Drinking water standard</b>	<b>Treatment</b>
arsenic (interim) asbestos beryllium cadmium chromium (total) lead nickel	50 mcg/L 7 million fibers/L 4 mcg/L 5 mcg/L 100 mcg/L 15 mcg/L (action level) 100 mcg/L	distillation RO AC, WS, RO, distillation IE, RO, distillation IE, RO IE, RO, distillation, AC WS, RO, distillation
<b>Radioactive contaminant</b>	<b>Drinking water standard</b>	<b>Treatment</b>
Radium 226, 228 (proposed) Radon (proposed)	20 pCi/L 300 pCi/L	IE, RO, distillation RO, distillation,

		aeration
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\* All contaminants are classified as known, probable, or possible human carcinogens by the EPA (1996), except for tetrachloroethylene, cadmium, chromium, and nickel, which are classified as known, probable, or possible human carcinogens by the International Agency for Research on Cancer (1997).

\*\* The maximum contaminant level goal for acrylamide, epichlorohydrin, and lead is 0.0 mcg/L. For these contaminants, the EPA requires a treatment technique instead of a primary drinking water standard

\*\*\* Treatment abbreviations: RO = reverse osmosis, AC = activated carbon, IE = ion exchange, WS = water softener/cation exchange. Aeration devices and some ion exchange units are not listed by NSF International. Consult with a local water professional before making water treatment decisions.

#### **WHAT POSES THE GREATEST THREAT FOR CARCINOGENS IN DRINKING WATER?**

- The greatest threats are accidental spillages, industrial and agricultural pollution.

#### **HOW CAN THE POTENTIAL CANCER RISK OF CONTAMINATED DRINKING WATER BE REDUCED**

- By the State preventing contamination of source water with carcinogens.
- By periodic water testing by relevant authorities (and interested bodies) with state-of-the-art equipment and full transparency of measurements, i.e. made available to the public on the Internet.
- By using state-of-the-art water purification technology at source and if necessary, at end point.

#### **REFERENCES:**

1. **Reducing potential risks from drinking water Part 1: Contaminant sources and drinking water standards**, Program on Breast Cancer and Environmental risk factors, Cornell University.

<http://envirocancer.cornell.edu/FactSheet/Pesticide/fs7a.drnkwtr.cfm>