

Health Facts on Fly Ash Constituents

Constituent	Maximum recommended level in water - parts per billion	Recommended level in water based on:	What are possible health effects?	Can it Cause Cancer?
Aluminum	50 – 200 ppb	High levels can cause cloudy water and a metallic taste	Not harmful for most people since less than 1% is absorbed into the body. Extremely large amounts can affect the brain, bone and other organs in some people (those on dialysis and those who cannot eat and receive nutrition directly in the vein).	No
Arsenic	10 ppb	High levels may be harmful to health	Extremely large amounts (like 300 – 30,000 ppb) can cause nausea, diarrhea, anemia, bruising and a “pins and needles” feeling. Smaller amounts over many years can affect the nervous system, skin (dark patches, thick corns), blood vessels and cause anemia.	Yes Skin, liver, bladder kidney, and prostate cancer Lung cancer if inhaled
Beryllium	4 ppb	High levels may be harmful to health	No human effects reported from swallowing beryllium. Lung disease and allergy possible if beryllium is in the air.	Lung cancer possible if breathed in large amounts.
Cadmium	5 ppb	High levels may be harmful to health	Cadmium can build up in the kidneys and cause kidney damage and fragile bones. Lung damage is also possible if it is breathed in air.	Probably
Lead	15 ppb	High levels may be harmful to health	Lead can affect the brain and nervous system, especially in infants and children, resulting in delayed physical and mental development. It can also cause kidney damage and anemia.	Probably
Manganese	50 ppb	High levels can cause black-brown water color, staining, and a bitter metallic taste	Some manganese is necessary for a healthy body. Extremely high amounts can affect the brain and nervous system, as well as the reproductive system.	Probably not
Nickel	100 ppb	High levels may be harmful to health	People who are allergic can have a skin rash from skin contact or swallowing nickel. Swallowing large amounts can upset the stomach. Lung disease is possible if breathed in large amounts	Lung and sinus cancer possible if breathed in large amounts.
Sulfate	250,000 ppb	High levels can cause salty taste	Sulfates can have a temporary laxative effect (increase bowel movements) and in high amounts they may cause diarrhea.	No
Thallium	2 ppb	High levels may be harmful to health	Extremely large amounts of thallium can cause temporary hair loss, vomiting, diarrhea, and affect the nervous system and other organs. No human effects reported from smaller amounts over time.	Unknown

References

EPA. Drinking Water Contaminants. Updated Oct 19 2006. Available at <http://www.epa.gov/safewater/mcl.html>.
 ATSDR. Public Health Statements. Updated Nov 11 2006. Available at <http://www.atsdr.cdc.gov/phshome.html>.