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# Coal Combustion Products



environment • water • strategy



## Range of Concentrations for Selected Trace Metals in CCPs and Soils

Under a microscope, CCPs are composed mostly of very small glassy silica particles that are spherical in shape. The main components of CCPs are oxides of silicon, aluminum, iron, and calcium, with lesser amounts magnesium, sulfur, sodium, and potassium. Of significant environmental concerns, trace quantities of the following metals may also be present in CCPs.

- In addition, polycyclic aromatic hydrocarbons (PAHs) are a group of chemicals formed during the incomplete burning of coal, or other organic materials. The following PAHs have also been reported in CCPs:

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- U.S. Coal Combustion Products (millions of tons)**
- % Recycled**
- CCP Produced**
- CCP Consumed**
- Percent CCPs Recycled**
- Source:

Source: **1960** **1970** **1980** **1990** **2000** **2010**  
U.S. Geological Survey. (2013). Historical Statistics for Mineral and Material Commodities in the United States.  
U.S. Geological Survey Data Series 140.

Sources:  
U.S. Geological Survey. (2011). Geochemical database of feed coal and coal combustion products (CCPs) from five power plants in the United States: U.S. Geological Survey Data Series 635 and pamphlet.  
U.S. Geological Survey. (1984). Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. Professional Paper 1270.

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💧 Structural Fill/Embankments	💧 Snow and Ice Control	💧 Agricultural/Soil Amendments
💧 Aggregate	💧 Blasting Grit	

As CCPs come into contact with water, whether due to infiltration from rainfall, runoff, or in direct contact with groundwater, components of the CCPs, including trace metals, can leach out of the stored waste and contaminate groundwater and surface water. Groundwater has been impacted at 16 of the 24 sites where the U.S. EPA has identified environmental damages from the stored waste CCPs.

There is no federal regulation for the storage and/or disposal of waste CCPs. The majority of states do not require adequate monitoring or liners to stop the migration of CCPs either in groundwater or surface waters. Of the 16 sites where impact to groundwater was identified by the U.S. EPA, the underlying causes were suspected to be from CCP wastes being stored in unlined landfills, unlined surface impoundments, and unlined sand and gravel pits.