

## **Advantages of Amended Silicates for Control of Mercury Emissions from Coal-Fired Power Plants**

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Amended silicates work with existing pollution-control equipment for particulate and acid gases to effectively control mercury emissions, without causing any negative balance-of-plant issues. Unlike activated carbon and other competing technologies, Amended Silicates reactively capture both elemental and oxidized mercury, without the need for any added halogens in the product or flue gas. As a result, the cost of mercury control using Amended Silicates is very low. Among other things, Amended Silicates for mercury control: (1) improves the quality of fly ash for use in concrete, (2) helps improve ESP performance, (3) eliminates the need for halogen injection and consequently (3a) prevents scrubber water contamination and (3b) prevents corrosion of air heaters and ductwork, and (4) prevents leaching of other toxic metals (such as As, Se, Cd, Cr, and Pb) from the fly ash. Amended Silicates convert mercury into HgS when it is captured, which is the most stable form of mercury in the environment. Long-term leaching tests have shown that activated carbon will slowly leach adsorbed mercury over a long period of time, eventually releasing all of the mercury it captured from the flue gas into local water ways. Hence, the mercury emission problem is only changed from a global and regional problem to a local problem. Since Amended Silicates convert mercury to the HgS form, the mercury will never leach, thus protecting the environment permanently. Another advantage of Amended Silicates is that the capital cost for equipment to manufacture Amended Silicates is only about 1/20<sup>th</sup> that required for manufacturing activated carbon.