



Capturing **MERCURY EMISSIONS**

CAPTURE • REGULATIONS • EMISSIONS • REMOVAL • SOLUTIONS

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VULCAN
DRYING SYSTEMS

CAPTURING MERCURY EMISSIONS

Mercury is an element which occurs naturally in the environment, existing in several forms, including elemental mercury and mercury compounds. Mercury is often found in rocks, soils, and mineral deposits, however, the element is most commonly in the environment as a result of human activity.

MERCURY REGULATIONS

To help combat the environmental threat of mercury exposure, the United States Environmental Protection Agency (EPA) has established and tightened regulations on mercury emissions over the past 20 years. Some of these regulations include:

- The Mercury Export Ban Act of 2008, prohibiting the export of elemental mercury from the United States.
- The Clean Air Mercury Rule (2008), designed to reduce utility emissions of mercury from 48 tons per year to 15 tons per year, resulting in a 70% reduction.
- The National Emission Standard for Hazardous Air Pollutants (2011), created to reduce toxic air pollutant emissions from coal and oil-fired electricity generating utilities.

MERCURY EMISSIONS FROM CEMENT

A major contributor to mercury emissions is the cement industry. Cement manufacturing is an energy-intensive process which grinds and heats raw materials such as limestone, clay, and iron ore. Pollutants, including mercury, are released from the burning of these fuels during this process.

The EPA is aiming to reduce the air pollution from the cement industry through regulations. These regulations depend on current technology to limit emissions. The most recent regulations from the EPA are designed to limit emissions to 55 pounds per million tons of clinker (the material used to make cement).

REMOVAL OF MERCURY

Fortunately, mercury can be cost-effectively removed from cement kiln dust before it has a chance to negatively impact the environment. Through the thermal desorption process, mercury can be removed from contaminated substances. Thermal desorption involves the application of intense heat to a material in order to volatilize mercury without damaging the material itself. In a thermal desorption unit (TDU), contaminated material is heated and mercury is vaporized. A gas or vacuum system then transports vaporized mercury and water to a gas reactor, which essentially is a modified particulate scrubber.

VULCAN DRYING SYSTEMS SOLUTION

Vulcan Drying Systems is uniquely positioned to aid in removing mercury and mercury products from contaminated materials. Vulcan Drying Systems has developed technology able to remove mercury from substrates on a continuous basis. This custom-designed and manufactured thermal equipment includes vapor recovery for the collection of vaporized mercury and has been demonstrated on both a pilot plant and on a commercial basis.

Vulcan Drying Systems designs systems to remove mercury from any industrial powders, including, but not limited to, activated carbon, fluorescent lamp powder, sludges, and soil.

Through the use of thermal desorption and vapor recovery, mercury can be captured, preventing substantial damage to the environment.

For more information on Vulcan Drying Systems email us at sales@vulcandryingsystems.com or call us at +1 (660) 263-7474.

