

GORE Mercury and SO_2 Control System

SIMPLE, COST-EFFECTIVE MERCURY AND SO_2 CONTROL

Reduction of Mercury and SO_2 Emissions

Sewage sludge, municipal solid waste, and hazardous waste incinerators around the world are under continual regulatory pressure to reduce emissions of various pollutants. Activated carbon injection and fixed carbon beds are two commonly accepted technologies to control mercury. Each have their benefits and limitations and selecting the best solution will depend on the site-specific situation. Now there is a proven alternative that eliminates those limitations.

Multi-Pollutant Control System

The GORE Mercury & SO_2 Control System is a unique fixed catalyst and sorbent system for removing gas phase mercury and SO_2 from incineration flue gas. The system is based on stackable modules that utilize an open channel design which results in very low pressure drop. Operation is passive; the modules will continuously chemically adsorb mercury and convert SO_2 to liquid sulfuric acid without requiring any adjustment, regeneration, or replacement.



Illustration: EnviroCare International

Low Capital Cost vs. Carbon Beds
- Zero and small footprint installation approaches
- No gas conditioning required after scrubber

Low Operating Cost
- Long module lifetime
- No maintenance or adjustments needed
- Low pressure drop

Low Process Impact
- No injection of activated carbon or chemicals
- No impact on ash properties
- No impact on waste water treatment system

SO_2 Removal Co-Benefit
- Further savings by generating a valuable by-product

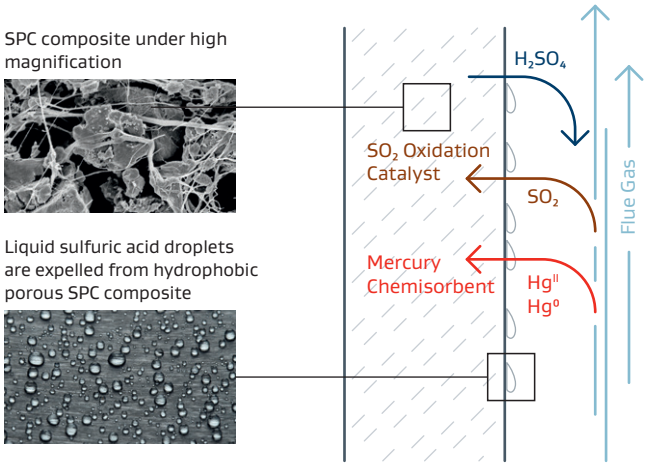
Together, improving life

GORE

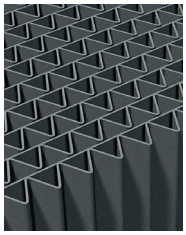
The Science Behind the Solution

At the heart of the technology is an innovative, fluoropolymer-based material developed W. L. Gore & Associates: Sorbent Polymer Catalyst (SPC) composite material. The sorbent in the SPC material efficiently captures both elemental and oxidized mercury. Since there are no injected sorbents or chemicals, there is no concern over ash contamination or creating additional particulate matter that needs to be collected.

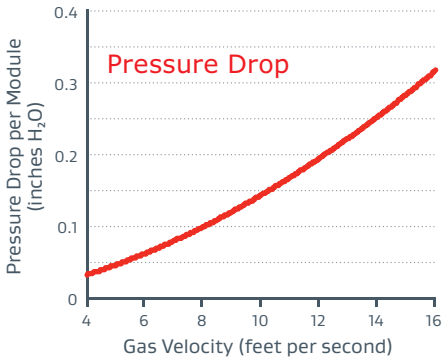
SO_2 in the flue gas is catalytically converted to liquid sulfuric acid which is expelled out of the hydrophobic SPC material as large droplets.



The SPC composite captures and sequesters elemental and oxidized mercury while converting SO_2 to liquid sulfuric acid.



The unique open channel structure of the GORE® Module provides extremely low pressure drop.



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