The Mercury Removal Challenge

Mercury (Hg) occurs naturally in varying forms and amounts within coal deposits. When coal is burned, mercury is emitted and enters the food chain, where it can impede fetal brain development. The EPA states that U.S. power plants emit nearly 50 tons of mercury every year and, to reduce mercury emissions, the EPA has issued stringent new mercury emissions standards. The EPA’s new MATS and Boiler MACT apply to every coal-fired power plant in the country. Power plants must comply with these new standards or face strict financial penalties and/or shutdown.

Traditional Mercury removal has relied on the injection of Powder Activated Carbon (PAC) in the flue gas stream, capturing gaseous mercury, but the use of PAC brings with it a host of additional limitations:

- PAC can render a plant’s fly ash unsalable for use in concrete and requires that it be shipped to a landfill for disposal;
- PAC often requires the use of halogens to optimize its performance, which are potentially corrosive to the balance of the plant and may adversely affect water discharge from wet scrubbers;
- PAC has an Explosibility Index (Kst) of 42 (vs. Novinda’s HgX Kst of 0.0) and as such can be a safety hazard;
- PAC is very sensitive to high sulfur coal environments with its performance degrading substantially due to the SO₃ contained in these flue gases; and,
- PAC can be very difficult for ESP’s to remove thoroughly for PM compliance.

Novinda’s award-winning and proprietary AS-HgX is a highly efficient, cost-effective alternative to PAC, removing 90+% of vapor phase mercury while preserving fly ash value, eliminating the corrosive impacts of PAC, and performing across a wide variety of plant configurations and fuels.

How It Works

An extremely fine powder, Novinda’s HgX is injected directly into a plant’s post-combustion flue gas stream where it reacts chemically with vapor-phase mercury to create a harmless, non-flammable, and non-corrosive solid compound that is effectively captured by the plant’s particulate control system.
Novinda’s AS-HgX

The HgX Advantage

Direct benefits include:

**Effective Mercury Capture** – HgX removes 90+% of vapor phase Hg, matching or exceeding PAC performance across various coal types and plant configurations.

**Cost Competitive** – HgX is price competitive with carbon-based sorbents and does not require additional chemicals — halogens, hydrated lime, re-emission agents, etc.— to obtain optimal performance.

**Concrete Compatible Fly Ash** – HgX preserves the value of fly ash for concrete.

**Non-Flammable & Non-corrosive** – HgX is non-corrosive, non-flammable, and easy to handle and store.

**Sustainability & Interdependence** — whether assessing leachability, impact on wet-scrubber discharges, balance of plant impact, particulate removal performance, etc.— HgX and its mineral-based design balances overall plant performance and environmental issues to ensure superior mercury removal, without damaging other critical operational criteria.

Indirect benefits:

**Natural mineral** – HgX uses a natural mineral compound as its base component.

**Smaller Carbon footprint** – Manufactured without excessive emissions and energy consumption (90% less than PAC).

**Integratable & Compatible** – HgX can be readily integrated with most existing sorbent injection systems.

**No additional chemicals** – HgX does not require halogens or other additives to be effective.

Start Being Smarter about Mercury Removal

AS-HgX has proven its effectiveness in over 50 full-scale power plant tests in the U.S. With Novinda’s AS-HgX you can readily meet MATS and Boiler MACT standards, spend less than you do for PAC, preserve your fly ash value while avoiding landfill disposal costs, and eliminate corrosive impacts to your plant. Let us prove its value to you.

Be smart, contact Novinda today.

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