



Enhanced mercury removal with dry sorbent injection

THE CHALLENGE

The Reims Waste-to-Energy plant operated by Veolia has 2 kilns (6.5 t/h) and valorize household waste and ordinary industrial waste.

The site is equipped with a dry flue gas treatment consisting of an injection of Sorbacal® SPS for the abatement of acid gases and Sorbacal® Micro 4099 for micropollutants upstream of a baghouse filter with operating temperatures between 180 and 220°C

As part of the application of the BAT (Best Available Techniques) conclusions of the last BREF on waste incineration, the operator asked us to help him determine a reliable solution for compliance with future Emission Limit Values (ELVs) of dioxins/furans and mercury.

THE LHOIST SOLUTION

In order to meet Rémodal's expectations, Lhoist recommended the injection of Sorbacal® Micro 5099.

This non-ATEX reagent was developed by Lhoist for the reduction of dioxins/furans and enhanced mercury capture.

In order to evaluate the performance of the reagent, mercury analyzers were installed on-site for a month and made it possible to determine the:

- Concentration and speciation of mercury upstream of the injection of Sorbacal® Micro 5099
- Concentration of total mercury stack emissions

During these tests, the dosing rate, defined according to the operating conditions, was preserved and kept constant at a value of 0.9 kg of reagent per ton of waste.





THE BENEFITS

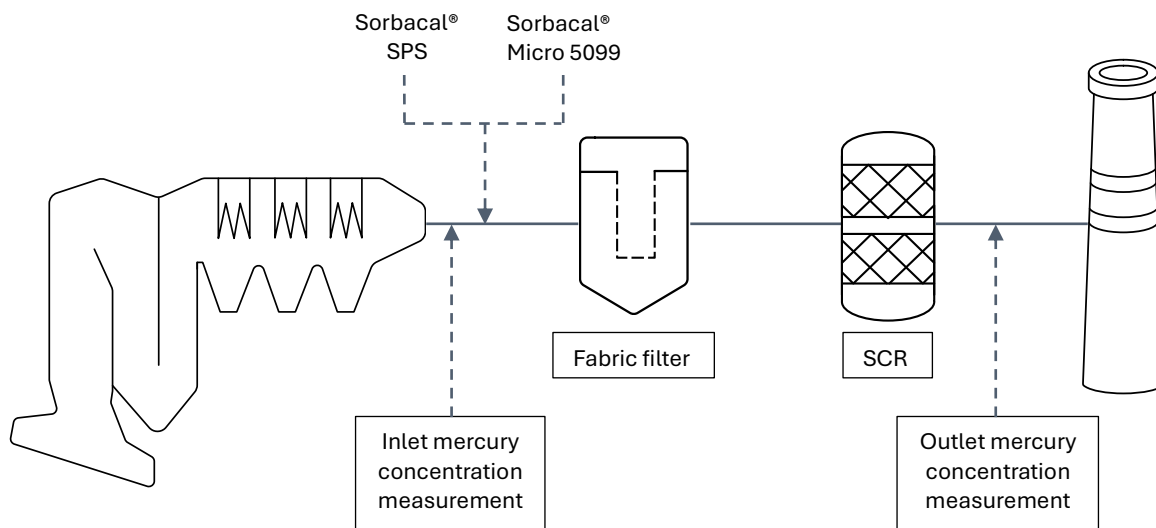
During the measurement period, the average mercury reduction rate was above 90% for an average concentration upstream of $153 \mu\text{g}/\text{Nm}^3$ (on dry gases at 11% O_2).

Higher daily averages (up to $450 \mu\text{g}/\text{Nm}^3$) and numerous mercury peaks (close to $1,000 \mu\text{g}/\text{Nm}^3$) were easily controlled by the dosage of Sorbacal[®] Micro 5099.

As expected, mercury in ionic form represented at least 85% of the total mercury. Monthly analysis of the sampling cartridges also confirmed compliance with dioxins & furans emissions.

Sorbacal[®] Micro 5099 meets the needs of the Rémival site operator.

Indeed, the use of this reagent not only makes it possible to maintain the downstream mercury concentration at a value of around $10 \mu\text{g}/\text{Nm}^3$ (at 11% O_2 on dry gases) but also to respect the ELVs for dioxins and furans.



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