



## ENHANCED AND SELECTIVE REMOVAL OF SO<sub>2</sub> BY MEANS OF UHT SORBACAL® SPS INJECTION

### THE CHALLENGE

A waste recovery organization in France has two incineration lines processing five metric tons/hour. These were equipped for semi-dry processes with a Sorbacal® SP feed.

Due to the evolution and diversification of waste the site saw a significant increase in sulfur dioxide (SO<sub>2</sub>) emissions, and consequently a rise in sorbent consumption. To address this, the Sorbacal® SP was replaced by Sorbacal® SPS, a high-porosity hydrated lime designed for enhanced uptake of SO<sub>2</sub>.

However, an increase in the volume of ordinary industrial waste (OIW) made the removal of SO<sub>2</sub> more challenging.

### THE LHOIST SOLUTION

In consultation with the customer, Lhoist proposed introducing upstream of the boiler an additional ultra-high temperature (UHT) injection of Sorbacal® SPS, also called furnace sorbent injection (FSI). This process had been proven effective at selectively enhancing the reduction of sulfur oxides in incineration applications of both household and hazardous industrial waste.

- First, an on-site audit defined the ideal processing, temperature and injection point conditions. This was – supported by a computational fluid dynamic simulation.
- Next, a feasibility test was conducted. We supplied a storage facility, a Big Bag Injecto-Matic® and a portable SO<sub>2</sub> concentration analyzer to take measurements up- and downstream of the proposed treatment.
- We monitored the testing, data interpretation and impact of the injection on the behavior of the factory boiler.

### THE BENEFITS

Once the trial was successfully completed the solution was fully implemented. The additional injection of Sorbacal® SPS did not interfere with the operation of the energy recovery boiler. It helped control SO<sub>2</sub> emissions while limiting consumption of sorbent upstream of the baghouse. As well as this direct economic benefit, the customer could easily accommodate more than 35% of OIW.

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