



CataFlex™ catalytic filter bags

Remove pollutants and **trap** dust in one **single** step

Breakthrough catalytic filter bags trap dust,
while removing dioxins, NO_x and NH₃

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Are regulators putting the **squeeze** on your business?

Topsoe's CataFlex™ catalytic filter bags make compliance a whole lot more affordable

Authorities in many countries are tightening emissions standards by reducing permissible levels and adding new gases and particles to the list of regulated components. Compliance is costly, requiring substantial investments in new abatement technologies.

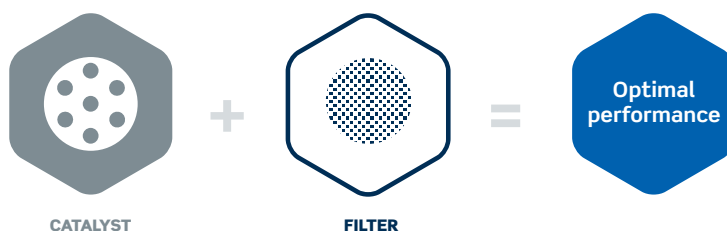
At Topsoe, we hear producers calling not just for new technologies, but for innovation that makes compliance affordable. That's what our CataFlex™ catalytic filter bags are all about.

Trap dust and remove pollutants

CataFlex™ are catalyst-coated filter bags designed to treat off-gases in high-dust environments found in a wide range of industries and activities, including:

- Waste incineration
- Biomass boilers
- Power plants
- Cement production
- Glass production
- Steel production

Built on decades of leadership in filtration and catalysis, these breakthrough solutions can transform the economics of meeting regulatory emissions.



The fact that we both master catalysts and process technology gives us the "big picture" view it takes to ensure optimal performance

Single step **removal** of dioxins, NO_x and NH₃

Upgrading is easy and affordable



Topsoe's catalytic filter systems are designed to give any facility the option of treating off-gases along with trapping dust. CataFlex™ is the ideal choice for facilities already using a filter bag solution.

Designed for use in most industries that require flue gas cleaning, the CataFlex™ catalytic filter bag consists of a catalytic fabric layer installed inside a standard filter bag. Both the catalyst formula and the fabric material for the catalytic inner layer and the dust filtration layer are optimized according to the process requirements.

Benefits include:

- Removes dust and multiple gaseous compounds in a single step
- No need for costly, space-demanding tail-end SCR equipment
- Low pressure drop means no need for costly new ID fans or compressed air
- Accommodates operating temperatures up to 260°C (500°F)
- Bags can be inserted into existing filter houses for an affordable drop-in upgrade
- Life time and pressure drop is comparable to conventional fabric filters
- No contact between catalyst and potentially harmful particles
- Exceptional resistance to catalyst poisoning
- Length up to 10 m (32 ft)
- Longer outer bag lifetime

CataFlex™ catalytic filter bag



A broad spectrum of **regulated pollutants**

While the filters trap dust, the catalyst removes
dioxins, NO_x and NH₃

Outer layer

Dust

CataFlex™ effectively block particulates and dust particles on the outer layer which consist of a traditional dust filter bag, ensuring full compliance with the stringent emission standards.

The outer layer of a CataFlex™ filter bag is a conventional filter bag which can be made by different fabrics and with and without PTFE membrane. CataFlex™ reduces dust emissions to below 1 mg/Nm³.

Inner layer

Dioxins destruction

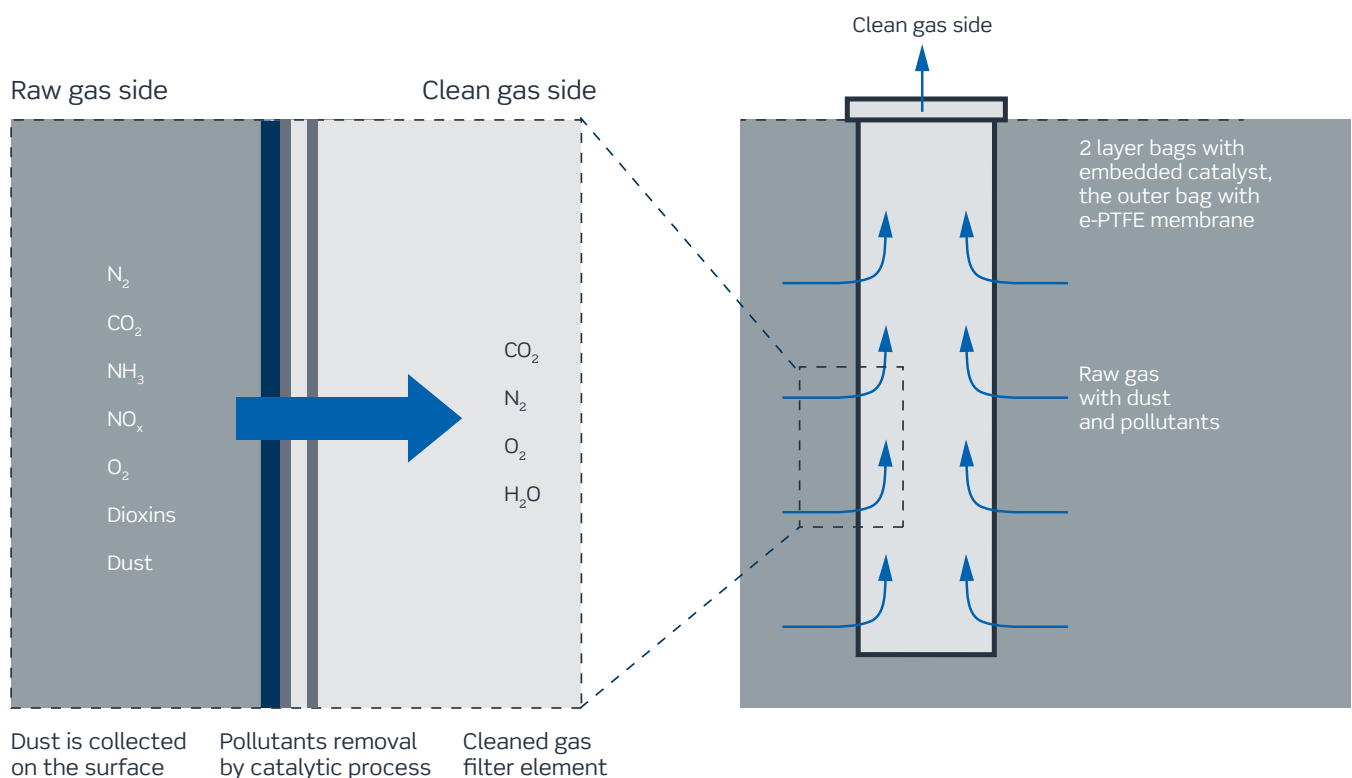
CataFlex™ ensure compliance with limits on dioxins and furans - destruction more than 99% of these by converting them into harmless compounds and reducing their concentrations to below 0.1 ng-TEQ/Nm³.

NO_x

CataFlex™ use selective catalytic reduction (SCR) to remove NO_x from off-gas, either by utilizing ammonia contained in the off-gas or via ammonia injection. The NO_x is converted to harmless nitrogen and water.

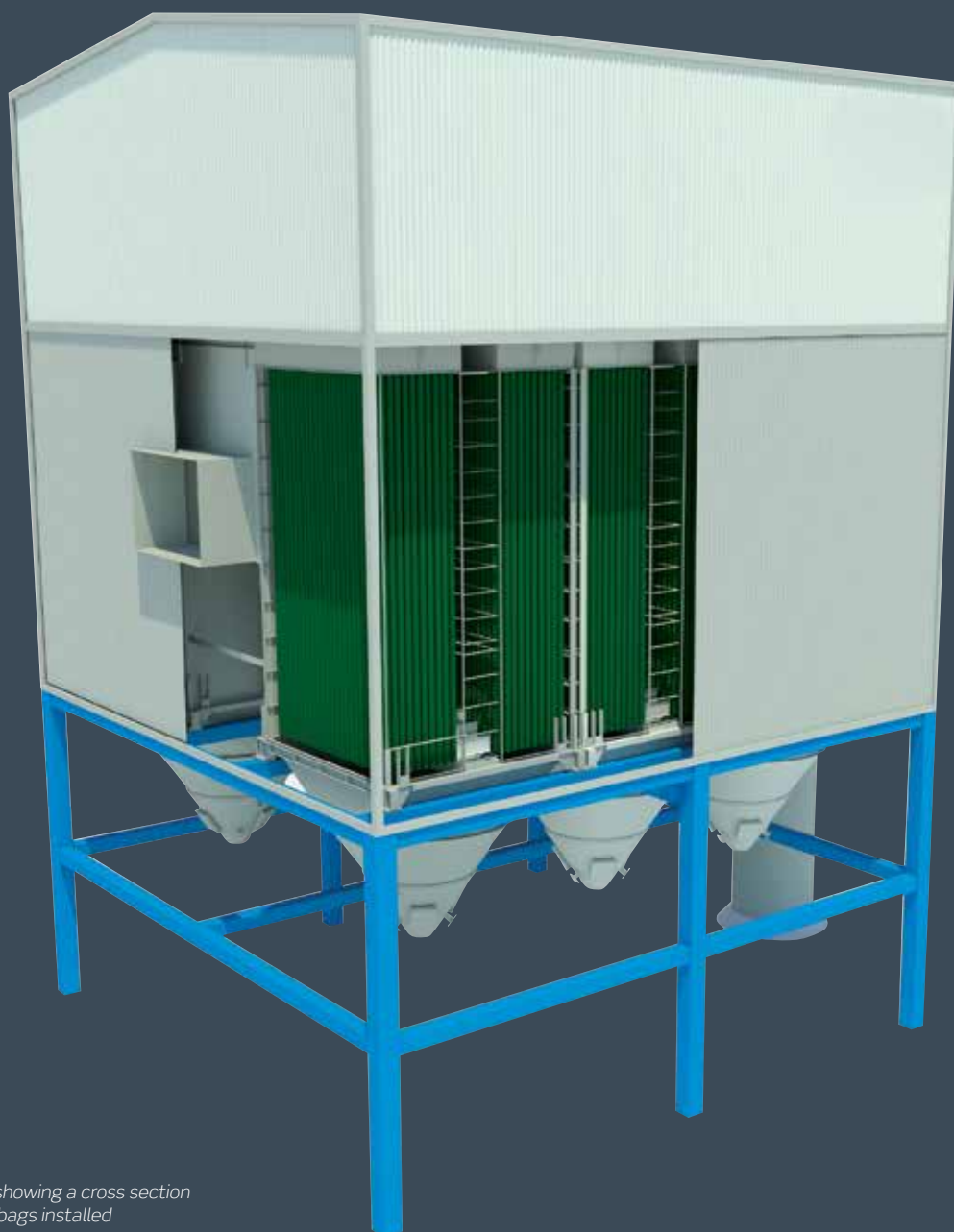
NH₃

CataFlex™ eliminates any NH₃ slip from upstream selective non-catalytic reduction (SNCR) of NO_x. This complies with NH₃ regulations and makes SNCR control easier.



Cut equipment **costs**

The Topsoe catalytic filter bag solution can help you reduce capital expenditures by up to 80% compared to competing solutions relying on separate dust removal and SCR technology.

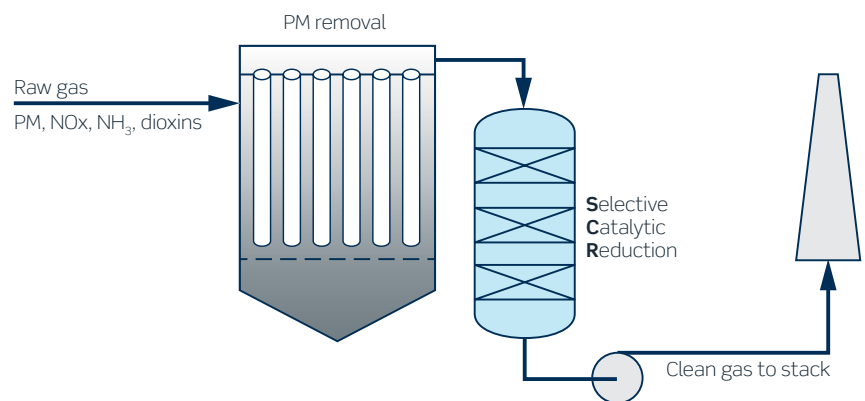


Typical fabric filter showing a cross section with catalytic filter bags installed

Filtration unit and tail end removal of NO_x and NH₃

Traditional solution based on separated technologies

Non-catalytic filters

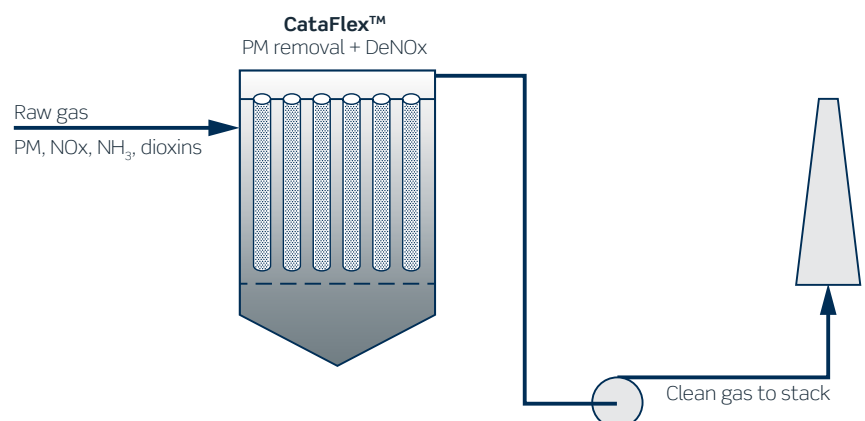


Catalytic filtration - integrated solution

Catalytic filter bag solution:

- Lower cost of ownership
- Less foot print
- Lower pressure drop
- Less maintenance

Catalytic filters



Related technologies

Discover the full range of Topsoe catalysts and technologies for optimizing performance

Optimized performance often means ensuring that multiple technologies and components are tuned to each other. If you're not already using them, please consider these related offerings from Topsoe.

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Sulfur removal

As emission regulations continue to get tighter around the world, optimal handling of sulfurous gases is becoming increasingly important. In addition to meeting regulatory requirements, we make sure our solutions also make financial sense. Due to their high availability, energy efficiency and flexibility, our sulfur removal systems deliver market-leading performance. They can even be used to convert otherwise costly waste into valuable commercial-grade sulfuric acid.

VOC

VOC removal

Regulatory pressure on VOC emissions has never been greater, and we can help you meet the challenge by removing VOCs from off-gases via low-temperature catalytic processes. Our solutions deliver reduction efficiencies exceeding 99%, without creating any secondary pollutants. Our catalysts remove VOCs from air and waste gas streams in an energy-efficient and environmentally friendly manner.



Why partner with **Haldor Topsoe**

The Topsoe advantage lies not just in individual solutions, but in how our solutions work together

When you partner with Haldor Topsoe, you partner not only with the world's experts in catalysis, surface science and emissions management. You also partner with a company that takes a uniquely holistic approach to your plant and your business.

When we look at your plant, we look at the big picture – and then apply the full breadth of our expertise to deliver a thoroughly tailored solution, where individual components work together to maximize your plant's performance and your business success.



Haldor Topsoe is a world leader in catalysis and surface science. We are committed to helping our customers achieve optimal performance. We enable our customers to get the most out of their processes and products, using the least possible energy and resources, in the most responsible way. This focus on our customers' performance, backed by our reputation for reliability, makes sure we add the most value to our customers and the world.



Get in touch today
www.topsoe.com/Cataflex

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