



UltraCat Catalytic Filters Remove PM, SO₂, HCl, NO_x, Dioxins, HAPs NO_x Control as Low as 350°F

UltraCat Meets Industry Pollution Control Requirements

UltraCat catalyst filters are composed of fibrous ceramic materials mixed with nanobits of proprietary catalyst. This new generation of light weight, ductile ceramic filter is very efficient in removing NO_x and other pollutants, including submicron particulate, to extremely low levels.

Particulate Control

UltraCat filters typically capture particulate to levels less than 0.001 grains/dscf (2.0 mg/Nm³). MACT compliance levels are guaranteed.

The unique structure of the filters keeps the collected particles on the surface. The embedded NO_x catalyst is protected from blinding and poisoning.

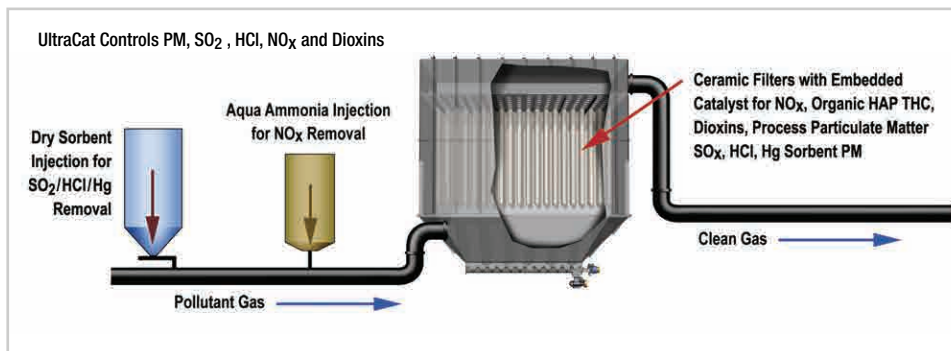
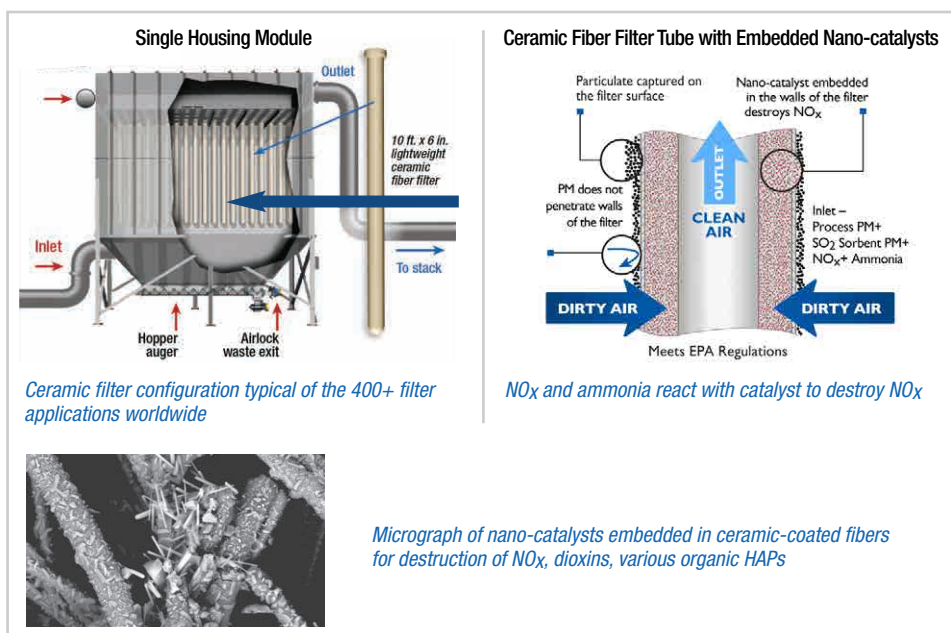
NO_x and Dioxin Control

The UltraCat filter tubes have nanobits of proprietary catalyst embedded throughout the filter walls, which are about 3/4" thick (see illustration). The UltraCat can achieve excellent NO_x removal at temperatures of 350°F and higher. Operating range is approximately 350°F to 950°F. Aqua ammonia is injected upstream of the filters, reacting with NO_x at the catalyst to form harmless nitrogen gas and water vapor, which then exits the system as clean gases.

The proprietary catalyst is highly resistant to sulfur poisoning and is protected from particulate contamination because it is embedded inside the filter walls. NO_x removal is up to 95%. UltraCat is also very efficient at destroying dioxins, typically over 97%.

HAPs and THC Control

Organic HAPs and THC are associated with many industrial processes, such as cement production. These can be removed by the



embedded nano-catalyst to below compliance levels at the same time as PM, NO_x, and other pollutants.

SO₂, HCl, Acid Gas Control

The UltraCat system can incorporate dry sorbent injection of hydrated lime, sodium bicarbonate, or trona for efficient dry scrubbing of SO₂, HCl, HF, and other acid gases. Typical SO₂ and HCl results show 90-98% removal.

Mercury Control

The strategy for mercury control depends on the constituents in the flue gas and is analyzed on an individual basis. Levels of mercury control can be achieved through injection of activated carbon of various formulations. Blended sorbents of hydrated lime and activated carbon can remove acid gasses, mercury and THC. Other mercury approaches are also compatible with the UltraCat filter system.



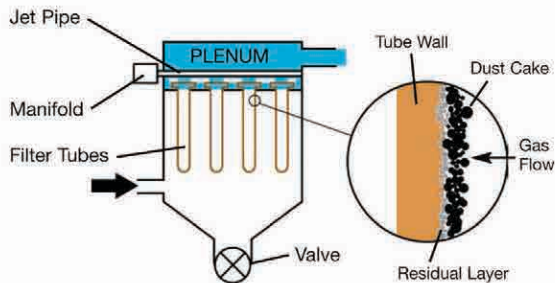
Operation and Maintenance

Tri-Mer's UltraCat Multi-Pollutant System uses a baghouse configuration with a reverse pulse-jet cleaning action. The filters are back-flushed with air, inert gas, syngas, or other appropriate gases. The design has been engineered for easy filter installation and maintenance. Filter

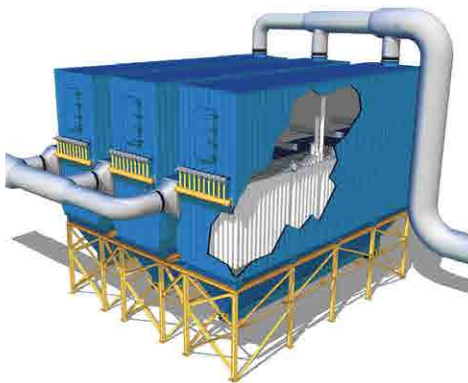
tubes are manufactured in various sizes, the largest of which is 10' long and 6" in diameter, including an integral mounting flange. Filter life averages 5 to 10 years on most applications.

Initial system cost is lower than competing

options, with much better performance and flexibility. Pressure drop is 5" w.g. – lower than the total energy usage of multi-step systems, ESP with multiple fields, or single-stage ESP with hopper heaters.



Reverse pulse-jet cleaning mechanism for the filter tubes. Filter tube wall approximately 3/4" thick. NO_x control option includes catalyst embedded in tube wall.



Multiple Plenums for Projects of Any Size

- Treats any gas flow volume – plenums are placed in parallel.
- Multiple plenums provide built-in redundancy to ensure up-time. No "ESP bottleneck."
- If a plenum is taken off-line for service, the other plenums treat the entire flow at a temporary higher pressure with no change in performance.

UltraCat is the Low Cost Solution

Tri-Mer Corporation, a technology leader in air pollution control provides turnkey engineering, manufacturing, installation, and service of the UltraCat systems.

Tri-Mer Corporation

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Primary Applications

- Boiler MACT compliance for coal, biomass, wood
- Cement NESHAP PM, SO₂, HCl, mercury, NO_x, THC, HAPs
- Glass furnaces
- Stationary Diesel
- Waste incineration, CISWI MACT compliance
- Metal smelting, mineral processing
- Chemical production
- Many specialized high temperature applications

More Applications

AIR POLLUTION CONTROL

- Medical waste
- Soil cleaning
- Foundry processes
- Energy production
- Fire testing

PRODUCT COLLECTION/RECOVERY

- Titanium dioxide production
- Fumed silica production
- Catalyst manufacturing
- Platinum smelting
- Metal powder production