UltraCat Catalytic Filters are Unique – and Superior

- Structure and composition
- Operating characteristics
- Long service life
- Large installed base
- Proven long term: nearly a decade in glass

The Tri-Mer Headquarters is sited on 12 acres near Detroit, Michigan. The Heart of the Campus: a 200,000 sq. ft. Engineering & Manufacturing Facility

Our specialty: Turnkey project delivery, from design through commissioning – guaranteed on-schedule

- Proprietary filter system designs
- Engineering – all disciplines
- Regulatory agency support
- Site work, demo, construction
- In-house equipment fabrication
- Controls, CEMS, systems integration
- Installation, training, start-up

Contact Kevin Moss
(989) 321-2991
kevin.moss@tri-mer.com

Technology Leader – Air Pollution Control

Since 1960
Factory and Headquarters: 1400 Monroe Street • P.O. Box 730 • Owosso, MI 48867
www.tri-mer.com

IMPORTANT NEWS
Glass Furnace Emissions Control

UltraCat Catalytic Ceramic Filters
One Proven Solution for
Air-Fuel and Oxy-Fuel
Gas Furnace Emissions

Particulate • NOx • SO2 • HCl • Metals

Tri-Mer has installed more Catalytic Ceramic Filter Systems than all other suppliers combined, worldwide.
Tri-Mer has the Most Effective NOx Control Available, Plus:

- Particulate (PM) to ≤ 0.1 lbs./ton
- High removal of SO2, HCl, metals
- NOx control by catalyst-embedded filters eliminates costly stand-alone SCR

1. Dry powdered sorbent – hydrated lime – is injected into the duct. It reacts immediately with the SO\(_2\), SO\(_3\), and HCl to form solid particles that will be captured by the ceramic filter.

2. Aqueous ammonia is atomized and sprayed into the duct. It immediately turns into a gas and mixes with NO\(_x\). This mixing is not affected by the process PM or sorbent PM.

3. The gas stream enters the filter housing, and the particulate from the process and sorbent is captured on the outer surface of the filters. Filters are periodically cleaned (about twice a day for glass) with a burst of compressed air while filter housings remain on-line.

4. The NO\(_x\) and ammonia mixture react on the enormous surface area of the nano-catalysts embedded in the filter walls. The mixture is free from particulate that can blind or poison the catalyst, so the reaction can occur more efficiently and across a much wider temperature range. NO\(_x\) is broken down into harmless N\(_2\) and water vapor. There is minimal ammonia slip.

5. Treated air exits the ceramic filter system, drawn to the stack by an induction fan.

More Than a Dozen Successful Glass Installations

- Proven system designs
- Proven UltraCat filter technology
- Proven operating history

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.
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Reverse pulse jet cleaning
Compressed air manifold
Filter seal
Waste exits hopper
Particles captured on outside of tubes
Process PM and sorbent falls into hopper

Filter Tube with Embedded Nano-catalysts

Catalyst is inside the filter walls, protected from PM blinding and poisoning.

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Filter Plenum Operation

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2. Aqueous ammonia is atomized and sprayed into the duct. It immediately turns into a gas and mixes with NOx. This mixing is not affected by the process PM or sorbent PM.

3. The gas stream enters the filter housing, and the particulate from the process and sorbent is captured on the outer surface of the filters. Filters are periodically cleaned (about twice a day for glass) with a burst of compressed air while filter housings remain on-line.

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1. Compressed air manifold
2. Filter tubes
3. Filter seal
4. Process PM and sorbent falls into hopper
5. Waste exits hopper

Diagram:

- Compressed air manifold for reverse pulse jet cleaning
- Filter plenum operation
- Hopper auger
- 10 ft. x 6 in. lightweight ceramic filter
- Polluted Gas
- Polluted Gas
- Particulate captured on the surface; does not penetrate the surface wall
- Filter tube with embedded nano-catalysts destroys NOx, dioxins, Cement O-HAPs and mercury
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(989) 627-1040
nevans@tri-mer.com

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