Breath of innovation for a greener tomorrow

micron

Addressing leading sources of emissions

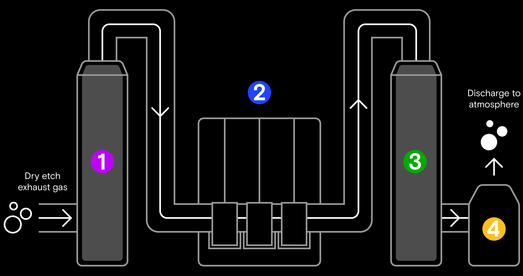
Micron is reducing greenhouse gas (GHG) emissions by investing in energy-efficient equipment, such as a centralized GHG abatement system that captures and neutralizes harmful gases before releasing them as non-toxic emissions.

Optimizing emission removal with a centralised approach

Traditional point-of-use (POU) abatement systems treat gases at individual sources. In contrast, Micron's central abatement system transforms the sustainability landscape by piloting a scalable solution that consolidates gas treatment into one unified system and significantly improves operational efficiency.

The result is not only a reduction in the number of systems needed, but also a significant decrease in energy and water consumption – paving the way for a more sustainable future.

How does a central abatement system work?



1 Pre-wet scrubber

GHG emissions generated from tools are directed to the connected central abatement system for processing. The incoming gases pass through a pre-wet scrubber, which removes harmful pollutants like hydrogen fluoride (HF), chlorine-containing (Cl) compounds and dust.

2 Regenerative catalytic system (RCS)

Next, the GHG emissions enter a regenerative catalytic system, where a unique catalyst breaks down the harmful perfluorocarbon (PFC) gases.

With the catalyst, a much lower temperature is needed for this process compared to the traditional point-of-use (POU) abatement systems, reducing energy consumption.

3 Post-wet scrubber

After the GHG emissions are broken down in the RCS, by-products generated such as hydrogen fluoride (HF) and sulfur oxides (SOx) will be removed in the post-wet scrubber.

4 Exhaust fan

The exhaust fan creates a negative pressure within the system, which pulls the emissions through the system for effective contaminant removal.

Finally, after going through all the processes, the treated gas is safely released into the atmosphere.

*Water recycling

Water used in the scrubbers is collected, treated and recycled back into the fabrication plant for reuse.

First in Singapore and in Micron globally
to pilot a central abatement system for GHG processing

>90% fuel consumption reduction and >35% cost savings
compared to point-of-use abatement technology

Each abatement system processes **2,700m^3** of gases per hour (m^3/h), effectively reducing emissions equivalent to those produced by close to **~10,000** gasoline cars every year[1]

1. United States Environmental Protection Agency, *Greenhouse Gas Emissions from a Typical Passenger Vehicle (2024)*

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