



# Case Study # 101

## Ammonia Scrubbing in Semiconductor Manufacturing

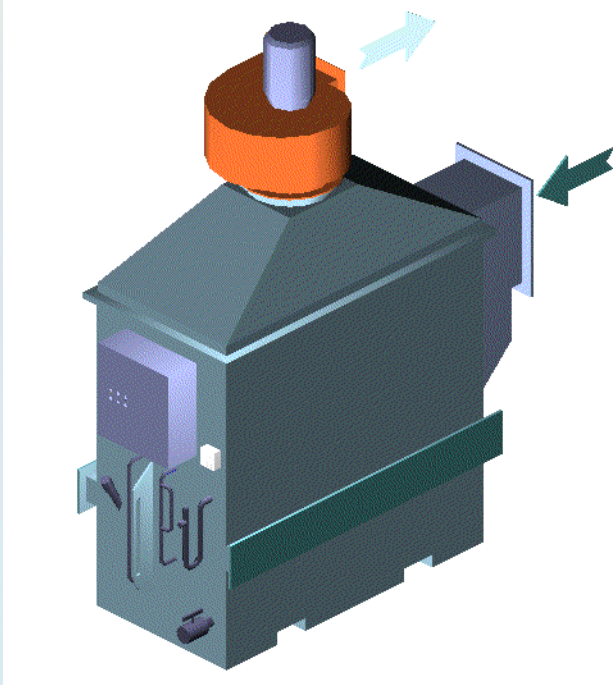
Semiconductor chip manufacturing utilizes a variety of inorganic acids and ammonia solutions. Mixing of acid gases and ammonia in a ventilation system can result in a gas phase reaction producing very fine particulate that is difficult and expensive to remove. For this reason a large semiconductor foundry on the west coast decided to pre-treat the exhaust from the ammonia sources prior to mixing with the general ventilation from the acid sources. The volume at each source was relatively small (1,500 – 2,500 CFM) and the customer’s preference was to treat each source independently to avoid an elaborate duct arrangement.

Verantis had the perfect solution, our packaged Mini-Scrubber. The polypropylene units are designed as a complete compact assembly with support frame, top mounted fan, and automated controls. The unique sprayer design eliminates the need for a recirculation pump and piping reducing both energy usage and maintenance requirements. Using dilute sulfuric solution, the system is able to achieve > 95% ammonia removal.

Product Literature: (click on links to take you to the literature)

[MS Product Data Sheet](#)

[MS-II Product Data Sheet](#)



<b>Application</b>	Wafer Fabrication Process Ventilation
<b>Exhaust Volume</b>	2,500 ACFM
<b>Exhaust Temperature</b>	Ambient
<b>Contaminant</b>	Ammonia
<b>Removal Efficiency</b>	95%
<b>Scrubbing Solution</b>	Dilute H <sub>2</sub> SO <sub>4</sub>
<b>Exhaust Pressure</b>	5" W.C.
<b>Materials of Construction</b>	Polypropylene