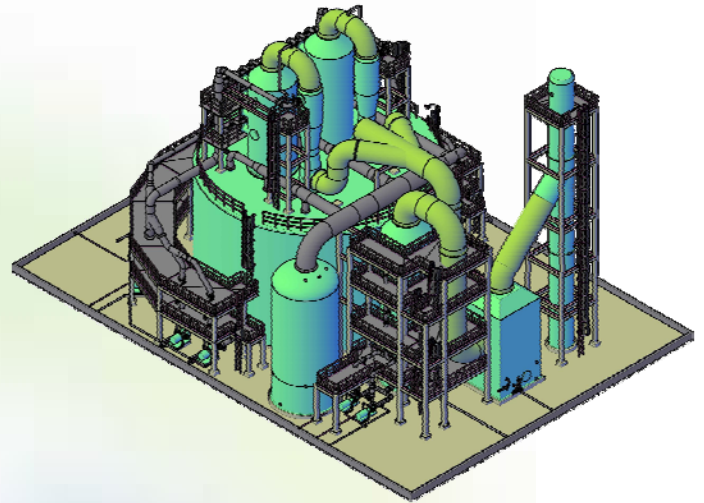


TCS Emergency Vent Scrubbing

A major polysilicon production facility in China sought a solution to reliably treat potential emergency vent releases from the TCS plant. The treatment plant is required to hydrolyze and neutralize chlorinated waste gases for a 15 minute release duration.

Verantis designed and supplied two (2) emergency vent scrubber systems. Each system comprises a knock out drum (to separate out entrained/condensed chloro-silane liquids), Spray Tower, Eductor Venturi and a Packed Tower Scrubber. The emergency scrubbing system adopts batch mode dosing. Dilute alkaline solution (NaOH) is continuously circulated in the scrubbers and is stored in the treatment system's scrubber sump in sufficient quantity to treat and neutralize an emergency release of 15 minutes duration.



Application	Emergency Release Treatment of Chlorinated Silane Vent gases for a 15 minute duration
Exhaust Volume	Dichlorosilane – 1500 kg Trichlorosilane – 17.000 kg Silicon tetrachloride – 5,000 kg Hydrogen – 400 kg
Exhaust Temp.	135 oC
Exhaust Pressure	13.8 KPa
Pollutants	HCl, SiCl ₄ , HSiCl ₃ , H ₂ SiCl ₂
Removal Efficiency	99.99%
Scrubbing Solution	NaOH
Materials of Construction	FRP