

Formia Launches Next Generation Low Concentration VOC Incinerators

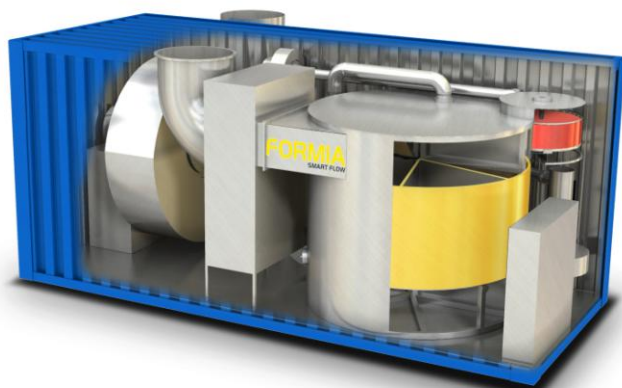
Formia has launched a new product series for the treatment of volatile organic compounds, VOCs, to meet the ever tightening European Union regulations and standards for minimising the release of VOCs. The new products are based on an innovative design, which combines the best robust catalytic technology with efficient heat exchangers for the highly effective treatment of gases with low VOC concentration.

The EU is planning to introduce new, tougher standards to further reduce hydrocarbon emissions and this will also impact less polluting lean VOC sources. Smart VOC LV is suitable for low VOC emissions of up to 0.5 g/Nm³, which are typical in the paint, printing, pharmaceutical and chemical industries. While Smart VOC LV is particularly suitable for low emissions it can also handle the occasional higher concentrations that often occur during processes.

Low operational cost and compact design

Incineration of low concentration VOCs usually requires input of additional support energy to maintain incineration and support energy is the major cost item in lean VOC incineration. The Formia Smart VOC LV uses active carbon or zeolites to adsorb the VOC gas, before burning it in a precious metal catalyst (also see Editor's note). This enables the processing of low VOC concentrations without the need for supporting energy so offering very low operational cost. Formia's solution needs supporting energy only to start the incineration process.

Other innovative and value-adding features are its small size and low maintenance costs. The Smart VOC LV has been designed to fit into a freight container for easy transportation and rapid installation. It only requires connections to a gas pipe line, compressed air and electricity for operation. Maximum processing capacity in a 20 foot standard container installation is 30,000 m³ per hour.



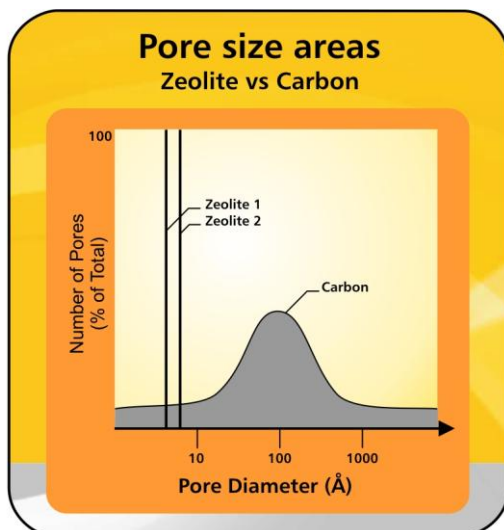
Formia's VOC products are made easy to deliver thanks to the compact design fitting into a 20-foot standard container.

The unit's own computer control system allows operating conditions to be set and changed with ease. In addition, it offers the facility for alarms and programming instructions to be transmitted to PCs or mobile phones. Formia Service Oy offers maintenance services of Smart VOC LV systems everywhere in the EU.

Effective Process

The Smart VOC LV's design is very robust and simple. VOC gases are fed in to the system through a particle filter, which protects the adsorbing materials, either activated carbon or zeolites. In the next phase of the process, these adsorb VOC molecules by surface forces and diffusion. The adsorbent is placed in a rotating cylinder, which is divided into six sectors, four of which are used to adsorb VOCs, one is in regeneration phase and one is in cooling. When one sector emissions reach the limit concentration, the wheel rotates and desorption of the fully loaded sector begins. The desorbing sector emits the concentrated VOCs into a catalytic converter, which burns the VOCs. The catalytic converter using company's proprietary technology is based on a precious metal catalyst with a high geometric and specific surface area. As such, the system is very tolerant to catalyst poisons such as phosphor, sulphur, calcium and zinc which adds to the durability of the machine. After this stage the emissions are purified to EU acceptable levels and led to an exhaust pipe.

Another proprietary design is the Smart VOC LV's heat exchanger. It gathers heat from the catalytic process (temperature is 300-350 C), which it transfers to heat the incoming VOC gas. Supporting energy is thus only needed to begin the regeneration cycle.



The Smart VOC LV uses active carbon and zeolites to adsorb the VOC gas before burning; these have different pore size areas for different type of hydrocarbons.

Emissions Control

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