Oil mist filtration and VOC purification system

Emissions treatment in packaging and printing sector

Packaging production:

The customer manufactures packaging such as co-extruded bags for the healthcare industry and flexible printed plastic-coated packaging. It uses advanced production lines with particular attention to the environment.

Emissions of styrene vapors and oily polymeric vapors:

The customer has a problem of emissions that are outside the required range.

Gallery

The chemical-physical analysis of the gaseous effluents, related to the processing line for food packaging polystyrene trays, revealed abnormal values for:

1. styrene vapours;
2. aliphatic hydrocarbons due to the simultaneous polypropylene extrusion;
3. high viscosity oily polymer vapours;
4. The analysis did not comply with the current legislation.

Styrene is an aromatic hydrocarbon. At room temperature, it is a transparent oily liquid with a characteristic sweet smell. It is toxic and flammable. Insoluble in water, it is soluble in most common organic solvents.

Multistage plant for pollutants treatment:

Tecnosida® performed a technical analysis of the circumstances and the pollutants highlighted by the analysis. The need for a dual-stage treatment was evident, as this would make it possible to reduce the concentrations of the pollutants with various characteristics in need of treatment.

The following solution was designed and proposed:

1. Design and installation of dedicated hoods dedicated to collect 100% of the pollutants from the production lines;
2. An Oilscreen pre-filter to separate and treat the polymer vapours with similar behaviour to high viscosity oils;
3. Preliminary study of VOC purification with Chemsorb® to absorb the styrene vapours.

Tecnosida® plant is realized in compliance with the BAT (AC.RI.01 and DC.CF.01). It reduces the emissions within the limits established by law, solving the problem of our customer.