

REAL TEST:

Air purification test in a clean room

PARTNERS



CHARACTERISTICS CLEAN ROOM

Surface area	390 m ²
Volume	1.550 m ³
Temperature	14 °C
Humidity	87 %
Filtered	F7

TESTING PROCESS

The test process lasted 7 days and the sequence followed was:

- 1 Sampling before the start of the purifiers
- 2 Start the purifiers together with the production lines.
- 3 Sampling during the working day.
- 4 Switch off the purifiers.

INTRODUCTION

This report presents the tests and research carried out to determine the effectiveness of the ultraviolet technology combined with filters, on air and surface pollution.

DESCRIPTION

The field test, to determine the efficiency of SODECA brand air purifiers, consists in installing 2 purifiers inside a clean room of 1.550m³.

PROQUIMIA takes different microbiological samples from the environment for their posterior counting on plate, in its laboratory. The samples are analysed:

- **AEROBIC MESOPHILIC**
It allows a general estimation of the microbial load present in a sample. Its knowledge is interesting because its value reflects the sanitary quality.
- **FUNGI**
- **YEASTS**

SODECA, based on sensors, monitors the following parameters for evaluation

- **FORMALDEHYDE**
Formaldehyde, the most important aldehyde. It is the most common toxic substance indoors. Under normal conditions of temperature and pressure formaldehyde is present as a gas, with a sharp, intense and penetrating smell. It is soluble in water and very volatile.
- **TVOCs**
Total Volatile Organic Compounds. These are all hydrocarbons present in a gaseous state at normal room temperature
- **PM**
Airborne particles are a complex mixture of substances of different chemical composition and diverse physical nature that have a variable size range from 0.005 to 100 µm and cannot be detected by the naked eye.

TEST SAMPLES

UPM/EC-500-F7+HEPA H14-CG



UPA-UV-6000-F7+HEPA H14-CG

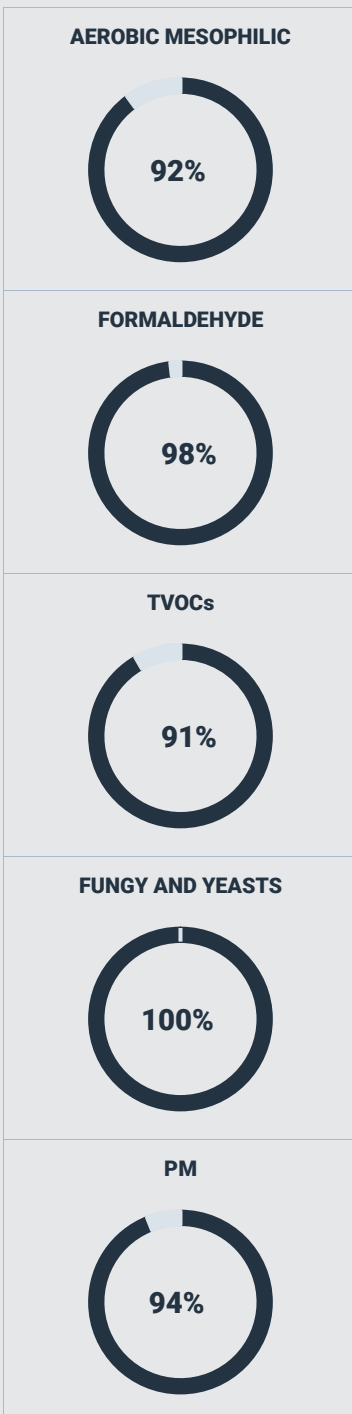


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CONCLUSIONS

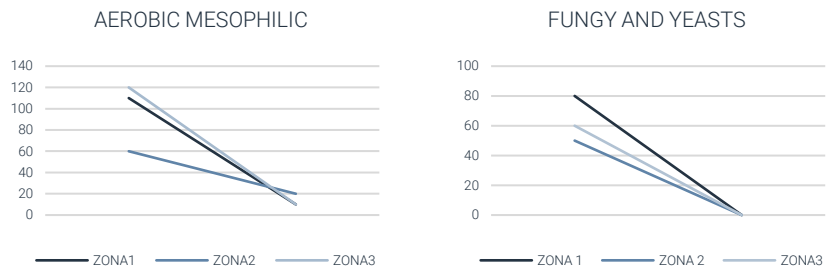
Tests and research into this technology show that, in almost all cases, the bacteria were reduced to zero, as were the fungi, and the quality and purity of the air improved enormously.



PROQUIMIA RESULTS



In the following graph you can see the results extracted by PROQUIMIA from the plate counts of 3 different areas of the room before starting the purifiers and after 8 hours of operation of the purifiers together with 100% production in the clean room:

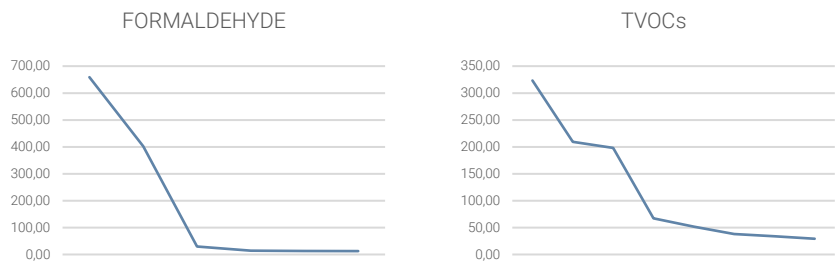


Total aerobes, fungi and yeasts are observed to drop dramatically during the operation of the purifiers. In the case of fungi, the drop is absolute

SODECA RESULTS



Results obtained from the sensors averaged during the 7 days of testing can be seen in the following graphs.



The active carbon filter allows a reduction in formaldehyde concentration up to 98% and a 91% reduction in volatile organic compounds.

