

AIR SAMPLER?

With two heads it is better

**THE AIR SAMPLER
“DUO SAS-SUPER 360”
OF INTERNATIONAL
PBI COLLECTS
DIFFERENT
MICRO-ORGANISMS AT
THE SAME TIME.**

The contribution of air as a source of microbial contamination in many industrial fields (particularly pharmaceutical, food and cosmetic industries) has been object in these latest years of a lot of accurate investigations. It has been proved that often the confined air contains an elevated microbial content, composed of a wide range of bacteria (among whom you can find oliforms, yeasts and moulds) and therefore it can bring or contribute, in an active way and in different forms, to contamination of products in the different phases of manufacturing process.

It is essential for this reason in the industrial sectors besides the cleaning of walls, floors and machines, to clean the air and to control the quality of air; so it is important to take steps to prevent the environments' contamination.

The possibility of contamination due to the presence of an excessive air

microbial content must be always considered, especially in the manufacturing areas; in this case there is a higher risk of biocontamination by both pathogen agents and micro-organisms with a consequent irreversible enworsening of final products and also shorter shelf life.

“SURFACE AIR SYSTEM SAMPLING”

The microbiological control of the air aims to collect the most possible number of micro-organisms to check the concentration and the dangerousness.

This operation presents some difficulties for two mainly reasons:

- the micro-organisms are air borne by particles which do not have all the same dimensions and chemical-physical features; this does not allow the sticking of the micro-organism to the surface of the same particles and therefore they keep on flowing in the air;
- the movement of the particles and therefore of the microorganisms is generally irregular and it is influenced by several physical parameters: temperature, light, humidity, movement of objects and persons and so on.

The air monitoring can be done in an accurate and precise process following the sampling methods of “sas” air samplers (surface air system) made by international pbi: 10 different systems satisfying the several and different needs of labs and manufacturing sectors are available.

The air is aspirated by a determined speed and along a determinated period of time and impacts onto a plate containing a nutrient medium suitable with the



**AIR SAMPLER WITH 2
INDEPENDENT ASPIRATING HEADS
“DUO SAS SUPER 360” INTERNATIONAL PBI**

microbial content. When the aspirating cycle is completed, the plate is removed and incubated.

The organisms after growth are visible and therefore can be counted indicating the degree of contamination of the environment. This method was enforced since the end of the 70's by International Pbi, an Italian company established in 1956 specialized in the supply of products for chemical and physical analysis and microbiological research, focusing its attention in the manufacture and trade of instruments for research labs, analysis and quality control.

Pbi international commercializes today over 30.000 items that are exported to more than 50 countries all over the world.

The importance of air sampling systems based on "sas" methods has been recognized for a long time on an international basis; as a proof of this, this instrument was used for the control of the air quality on board of the Russian space station "mir" and it is used today on board of international space station. International pbi designed and manufactured recently, with the co-operation of the dept. of aeronautics engineering of university of Milan, a new sampler of the series "sas", called "duo sas-super 360" with two independent heads of aspiration; there is the possibility with these two heads to collect two different types of micro-organisms at the same time.

TECHNICAL SPECIFICATIONS

The main advantage offered by the sampler "duo sas-super 360" consists in having two independent aspirating heads; this allows the air to flow and to impact onto two plates with same or different nutrient media (for instance, tsa tryptic soy agar and sda sabouraud dextrose agar) and as a consequence to perform two



"Duo Sas Super 360" Air Sampler is used in food and pharmaceutical fields and to control air contamination in clean room as well

different microbiological analysis at the same time.

Each aspirating head is steel made and may be used with standard 55 mm contact plates, or 84 mm maxi contact plates (these last ones for mycetes collection), and 90 mm standard petri plates.

Each head is certified and shows the serial number laser impressed.

An important operative feature of Duo-Sas-360 is the high volume of air: 360 liters per minute (180 liters per minute for each head), equal to over 21 cubic meters per hour. This means that the unit can also be used in environments with very low level of contamination such as clean rooms.

From a technical point of view, the attention must be drawn on the outlet system of sampled air flowing in a direction that does not interfere with the natural flow of the air; it must be paid attention also on the wall holder eliminating disturbing effects due to the presence of the operator.

The instrument is very simple to use:

- select the programme according to the expected microbial contamination;
- insert the contact plate with suitable nutrient medium

- push the start bottom to start the cycle of aspiration;
- remove the plates at the end of the cycle and put them into the incubator for a determined time and at pre-established conditions;
- count the colonies that appeared and check the degree of contamination keeping in mind the standard values.

"Duo-Sas-360" has a wide display back-lightened in order to easily read the data concerning sampling (place, date, time, name of the operator etc). These data are memorized by the sampler itself or transferred either to a PC or a printer according to GLP (Good Laboratory Practice) and GMP (Good Manufacturing Practice). It is portable, independent for 7 hours. The instrument works according to GLP and GMP and permits till 10 different consequent cycles of sampling according to USP regulations (United States Pharmacopeia). The instrument is also equipped with IQ (installation qualification) OQ (operation qualification) PQ (performance qualification) manuals. A wide range of accessories is available (a tripod, a 110 v battery charge, infrared remote control system, assembling box for petri dishes etc) to be able to satisfy every application.

Main situations where the "Duo Sas-Super 360" is suitable are:

- environments where the immediate sampling of different micro-organisms is needed such as the manufacturing sectors which can be interested in yeasts and moulds at the same time;
- environments with a minimum level of contamination like "clean rooms"; in this case the high volume of aspirated air (360 liters per minute) is exploited and therefore there can be the possibility to catch even very small quantity of contaminating agents;
- environments where the sampling of large volumes of air in short periods of time is needed (about 1000 liters in less than three minutes).