

ATEX DIRECTIVE 94/9/EC - THE SAFETY IN INDUSTRIAL PLANTS AND THE LATI'S ROLE

It isn't only today that the target of technical plastic materials is to replace metals. Thanks to their performance profile and their advantages featured in the part design and in processing, they offer considerable benefits in terms of innovative contents, weight and maintenance reduction, as well as a concrete cost saving.

From another point of view, it is renowned that one of the reasons that plastic materials are widely used in certain fields such as electrics and electronics, resides in their strong electro-insulating properties. In these fields, the thermoplastic polymers have **easily replaced traditional** construction materials thanks to their processability and to their **project flexibility**. These particular characteristics have allowed a rapid transition toward miniaturization of electric/electronic components.

As is its known, all medals have a reverse side: this positive characteristic (the electro-insulating power), in certain fields and with certain applications, causes problems which have no easy or immediate solution. One of these is the build-up of electrostatic charges on the surface of insulating materials, charges which can even reach high voltages and which, under certain conditions, can provoke sparks with the **formation of electric fields and arches**. These phenomena have a **particular negative**, even catastrophic effect whenever flammable or explosive substances are present in the work environment, or in the presence of fuel passages, etc.

With the proliferation of the use of plastic materials, it has become unavoidable for competent safety Authorities to consider the problem with a systematic approach. The European Community has recently elaborated published a directive called **ATEX 94/9/EC**; which has become mandatory for all the Union States as of July 2003. The name **ATEX** comes from the initials of the French term **Atmosphères Explosibles**, and applies to all equipment, components, accessories (electrical and mechanical) and systems which are or could be used in locations characterized by explosive environments. It expresses the essential safety requirements for protective equipments, components and systems destined to be used in potentially explosive environments. The under evaluation equipments must be inspected in compliance with the requirements of the regulation and only if they do satisfy the required conditions, they may carry the marking required by the regulation.



LATI's range of thermoplastic products complying with the ATEX Directive.

It is evident that there is a need to consider dissipative plastic materials, in other words capable of avoiding accumulation of electrostatic charges on the surface of manufactured products. Making plastic conductive may seem a rather easy task. Today additives can be found on the market precisely for this purpose.

The task becomes more burdensome when it is necessary to develop thermoplastic compounds characterized by constant conductivity values and contained in closed and pre-established limits, while maintaining the polymers' favorable performance. LATI has been dealing with these problems for some time; for more than 20 years the company has been offering to the market the **LATISTAT** compounds which, as a common characteristic, have a low electric resistivity value.

These products, which are ideal with regard to dissipation of electrostatic charges, use to have a color limitation, in fact they are available only in black. In the last years, the range of partially electro-conductive products has widened with the introduction of two new types:

- **LATIOHM:** semi-conductive / dissipative compounds with a wide range of electric resistivity values. They can be colored, in a wide range of possible shades;
- **LATISHIELD:** compounds mixed with additives and with special metal fibers which in addition to conducting electricity also have **good shielding properties against Electromagnetic Interferences (EMI)**

LATI has recently enlarged these ranges: today an extremely complete package is available to satisfy the most varied requirements. In order to corroborate the commitment and to provide clear information to the interested markets, LATI has published a technical sheet (available in our Web site) which deals with the **ATEX** directive and the compounds which meet its requirements.