



## FEATURES OF THE PLASTIC MATERIALS USED

It has been agreed that thermoplastic materials will be referred by a two or three-letters acronym.

The main technical plastics used are :

**Acrylobutadiene Styrene : A.B.S.**

**Acrylobutadiene Styrene Ester Acrylic : ASA**

**Polystyrene : PS**

**Choc Polystyrene : CP**

**Polyethylene : PEbd**

**Polypropylene : P.P.**

**Polyamide : P.A.**

**Polyoxymethylene or acetal resine : P.O.M.**

Each thermoplastic may exist in different grades appropriated to the use for which it will be employed.

We try to reduce the defects inherent in plastic materials by incorporating additives.

Plasticizers : to give suppleness and reduce brightness

Stabilizers (anti-oxygen-thermic-anti-UV, antistatic)

Colourings : to improve appearance

Extenders : to bring a particular aesthetic attribute :

- Heat resistance
- Resistance to shocks
- Sliding conductivity

Reinforcements : to increase mechanical strength (fibreglass...)

### POLYSTYRENE PS

Keeps its mechanical attributes from -40 ° C to + 70 ° C. Combustible

Excellent dimensional stability

Good resistance to diluted acids – to hydrous saline solutions and to bases

Dissolves and swells in numerous organic environments (hydrocarbons).

Sensitive to ultraviolet rays

### CHOC POLYSTYRENE CP

Identical features to PS

To improve its resistance to shocks, particularly : polymerisation is made with polybutadiene (a rubbery substance by nature able to absorb the energy caused by a shock).

### ACRYLOBUTADIENE STYRENE ABS

Good dimensional stability

Good resistance to impacts

Hard surface and resistant to scratching

Resistant to hydrocarbons

Sensitive to ultraviolet rays

### POLYOXYMETHYLENE P.O.M.

Excellent dimensional stability

Very good mechanical attributes

Not very sensitive to creep

Excellent attributes in bending (springs) and alternating stress

Excellent frictional attribute and resistance to wear

The combination between PA and POM is recommended to avoid grating in fixation.

Resistant to acids and bases

Sensitive to ultraviolet ray

### POLYAMIDE PA

Dimensional variations due to taking up humidity. Seasonal variations in humidity (from 20 to 0% of relative humidity in the air) do not affect PA thanks to its low rate of absorption and desorption.

PAs are amongst the most resistant thermoplastics. Good attributes of endurance in fatigue and excellent attributes of rubbing.

Medium resistance to ultraviolet rays

Good resistance to chemical products

Insensitive to oil, grease, hydraulic liquids, hydrocarbons, paints...

Acids are the solvents of PAs

Self-extinguishing

### POLYETHYLENE PEbd

Flexible at room temperature, may be used therefore for sheaths, wrappings

Good frictional attributes

Very good chemical stability

Excellent electrical insulating

### POLYPROPYLENE P.P.

Identical to PEbd but better mechanical strength, more rigid, excellent bending fatigue attributes.

Sensitive to ultraviolet rays