

DO YOU EXTRUDE TPU?

EPAFLEX IS YOUR IDEAL PARTNER

Thermoplastic polyurethane (TPU) granules are innovative technical materials with characteristics which make it suitable for several applications in the plastics industry.

One of these applications is that of extruded products. Epaflex's Epaline series includes products developed specifically for extrusion and calendaring.

Whether they be belts, pipes, wires, cables, films or profiles, Epaflex has the product for you.

Epaflex produces TPU guaranteeing constant quality and ease of processing which is capable of satisfying the needs of the most complex and state-of-the-art applications.

ISO 9001 certification provides a further guarantee of the excellence of our processes.

The product lines designed for extrusion are the **EPALINE series 300 (polyester base)** **series 700 (polyether base)** whose main characteristics are:

- Very good friction and scratch resistance
- High dimensional stability
- Good tensile, tear and shear strength
- High elasticity and flexibility
- Good resistance to oils, greases and many solvents
- Good resistance to low temperatures
- Absence of halogens
- Possibility of creating matt and glossy surfaces
- High process speed
- High hydrolysis resistance
- Availability of high flame resistance products
- Very good welding capacity
- Wide range of hardness
- Food approved grades
- Possibility of providing grades with tailored fluidity
- Recyclability



PRE-TREATMENT

TPU is a hygroscopic polymer and the moisture absorbed affects its processability and the physical-mechanical properties of the extruded/moulded articles.

The granules must be dried before use by using fan ovens, vacuum driers or dehumidifying air driers.

The percentage of moisture in the granule must be less than 0.05%.

Like TPU any masterbatches should also be dried separately from the TPU before being mixed. For the drying parameters (time and temperature), please see our technical datasheets. The exposure of TPU to the air for even just a few hours means moisture absorption and forces pre-drying once again.

STORAGE

Epaflax TPUs must be stored in a dry place at a room temperature preferably around 20° C and in any case not at a too high or too low temperature preferably in a ventilated, cool room.

PACKAGING

Epaflax TPUs come in various packaging such as: 25 kg aluminized bags and 600 kg. or 1000 kg. octabins.

COLOURATION

Epaflax TPUs can be coloured with masterbatches. Specific TPU-based masterbatches are recommended.

Like TPU, masterbatches should also be dried separately from the TPU before being mixed with it.

RECYCLING

Processing waste and scraps can be re-used after having been re-granulated. In this case it is worth checking the absence of impurities and ensuring that the product has not undergone heat degradation. The re-granulated product (like virgin TPU) should always be dried before being re-used.

We suggest using re-granulated TPU blended with fresh granules at a percentage of no more than 25%.

TECHNOLOGY

For transforming our extrusion grade TPU we recommend the use of standard 3-stage single-screw extruders with "general purpose" constant pitch screws (1 D) whose diameter is between 40 and 60 mm and L/D ratio between 20:1 and 30:1.

The compression ratio can range from 1.2 to 1.3.

In order to prevent the product from heat degradation the space between screw and cylinder must be between 0.1 and 0.2 mm and the dies used must be designed so that there are no areas in which the material can stagnate.

We discourage the use of perforated disks and packets of filters.



EPAFLEX was established in 1991 as a system house specialised in producing polyurethane systems for the footwear industry.

Over the years, Epaflax's business has expanded further and diversified, first with the second line of products, Thermoplastic polyurethane (TPU) granules and then with the production of Polyurea, Polyspartic Polyureas, Prepolymers and Sprays Foams for insulation.

Along with Elchem S.p.A., Epaflax belongs to an industrial group that recently completed an important chemical plant for resin production.

All the polyesters used in Epaflax TPU are manufactured in Elchem so that the quality of the raw material can be carefully controlled, giving it a suitable level of competitiveness for the market needs.

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