

## Management of waste filter materials

### Filter materials

Our materials are composed of low-melt thermoplastic fibres. Common examples are polypropylene (PP), polyamide (PA) and polyester (PES). The word 'thermoplastic' means, in practical terms, that when the temperature rises the plastic softens and can be reshaped but it regains its previous properties when the temperature is lowered once more. This is in contrast to hard plastics, such as epoxy, that do not melt but, rather, finally break down when the temperature rises. Thermoplastics are, in everyday parlance, referred to as 'plastic'.

### Polypropylene (PP)

Polypropylene (or polypropene) is what is known as an 'olefin plastic', closely related to polyethylene. PP is one of the commonest plastic materials, found in packaging (sweet packets, shampoo bottles), kitchen goods (mugs, plates, lunchboxes), furniture (outdoor items) and technical products (battery boxes, caps). In fibre form, PP is common in ropes and straps, and in filters.

In controlled burning of polypropylene, carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O) are formed. In uncontrolled and incomplete combustion, toxic gases can form. Examples are carbon monoxide (CO) and polyaromatic hydrocarbons (PAHs).

Based on the controlled recycling of our filters, we see polypropylene as our environment-friendly option. We therefore use this material, as far as possible, in our filter systems.

### Polyamide (PA)

Polyamide is known primarily by a common commercial name: nylon. There are various kinds of polyamide, which vary with respect to chemical structure, but the commonest are PA6 and PA66. These have very similar properties, and it is mainly the higher melting point of PA66 that distinguishes it from PA6. Polyamide is common in the form both of fibres and of construction plastic. On the fibre and textile side, fabrics, straps and rope are common areas of application. As for plastic parts made of polyamide, product examples are buckles and snap fasteners, cogs, strong tie fasteners and clutch pedals.

In controlled burning of polyamide, carbon dioxide (CO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>) and water (H<sub>2</sub>O) form. In uncontrolled and incomplete combustion, toxic gases — such as carbon monoxide (CO), nitric acid (HNO<sub>3</sub>), hydrogen cyanide (HCN) and PAHs — can form.

### Polyester (PES)

There are two main types of thermoplastic polyester: PBT and PET. For fibre applications PET, which is the same plastic as that used in soft-drink bottles, predominates. Polyamide and polyester are the commonest synthetic materials used in textiles. PET can normally be fully recycled; soft-drink bottles that are recycled to make fleece are a good example. PBT is typically used in various plastic structures and electrical components.

In controlled burning of polyester, carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O) are formed. In uncontrolled and incomplete combustion toxic gases, such as carbon monoxide (CO) and PAHs, can form.



TEKNISKA PRECISIONSFILTER JR AB

Anton Tamms väg 3  
SE-194 34 Upplands Väsby  
Sweden

Phone: +46-8-59411240  
Fax: +46-8-59070285

tpfilter@tp-filter.se  
www.tp-filter.se

Plusgiro: 57 42 97-8, Bankgiro: 414-4135  
Org.nr: 556189-9997