

FILTERING with PE-porös from KIK

Under the brand name **PE-porös**, KIK offers filter elements made of porous polyethylene (HDPE/ UHMWPE), for use both in liquid and gas filtration.

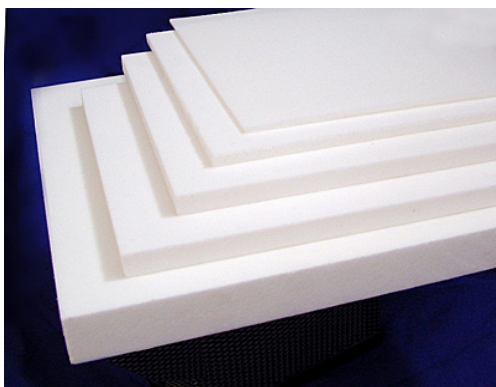
For use in filtering equipment of all kinds, we manufacture filter media in almost any geometry wanted, and in a wide range of filtration grades, from 1 µm to far over 100 µm.



Filter tubes and made-up elements



Shaped parts to customer specifications



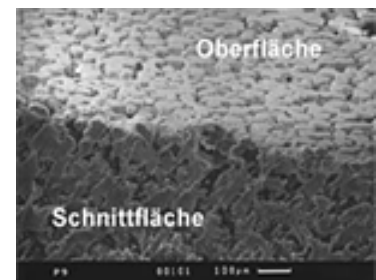
Filter plates, items cut to size, punched parts etc.

PE-porös is **manufactured** by a special sintering process, in which the granules of plastic are heated until their surfaces soften, and fuse at the contact faces, while retaining more or less their original shape. The shaped body created thus has open continuous pores, whose size and number depends on the sintering conditions and the size of the polymer particles selected.

The pore size is mainly determined by the size and shape of the plastic granules employed. Sintered filters do not possess a uniform pore size; instead, they have a spectrum of pore sizes similar to a normal distribution. In order to characterize

them, KIK states mean pore widths that correspond to the maximum of this distribution. A quality feature of a filter is a narrow distribution of pore sizes. The largest pores in PE-porös can be assumed to be roughly 30% to 50% larger than the mean pore size.

SEM >



The fineness of the filter depends on the pore size, but does not correspond to it; it is sometimes considerably smaller. Depending on the application, sintered filters are a combination of surface and depth filters, in which three separation mechanisms are active in principle:

- sieving action
- inertial impingement
- adsorption

One measure of the sieving effect is the largest pore; due to inertial impingement and diffusion, even particles that are considerably smaller than the mean pore size are retained. Thus, grades of filtration up to five times finer than the pore width can be achieved in liquid filtration, and even up to ten times finer in gas filtration.

The **recognized physiological safety** permits the use of filter elements made of PE-porös also in the food and drinking water industry.

Thanks to the **superb chemical stability** PE-porös is well suited for the cleaning of chemicals and solvents as wells for the recovery of valuable substances, like catalysts.