

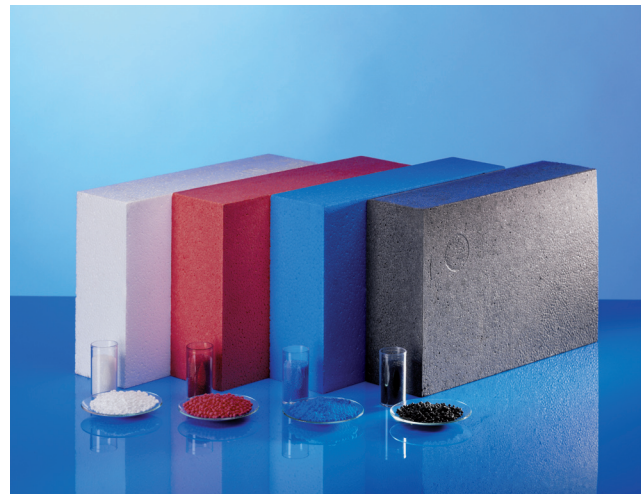
Sulzer EPS process

The new method to produce Expandable Polystyrene

The Sulzer EPS Process is, contrary to the conventional suspension polymerization process, a fully continuous production process for expandable polystyrene. The foaming agent, which can be the same as in the suspension process (i.e. pentane), is injected in liquid form and at high pressure into polystyrene melt.



Sulzer EPS Unit ready for shipment



EPS in various colours produced by Sulzer EPS process

It is subsequently dispersed and dissolved in the polymer melt. Additives of any kind (liquids, masterbatches, concentrates) can be added at various points up- or downstream of the pentane injection. The controlled temperature profile and the low shear rates allow even the adding of highly sensitive additives (i.e. flame retardant systems) with no risk of decomposition.

The dispersion, dissolving and cooling stages are all carried out in static mixing equipment of proprietary design. Due to the absence of moving parts operability is high and maintenance practically non-existent.

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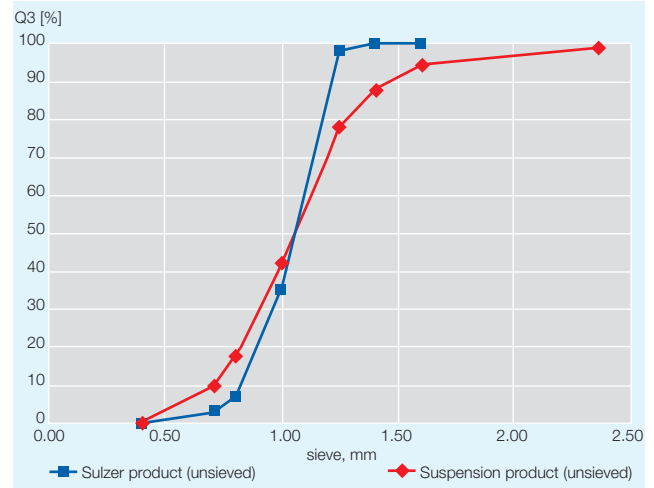
- Production of a wide range of EPS qualities, such as standard white, colored, or pigmented
- High quality low lambda, flame retarded (FR) insulation grades consistently achievable
- Easy add-on for existing GPPS polymerization plants to additionally produce EPS micro pellets depending on market demands
- High added value due to superior EPS grades



EPS Pilot Unit at Sulzer facilities in Winterthur

The cooled, highly viscous mixture is then pelletized in an under-water pelletizing system. The dried and separated EPS micropellets are finally conveyed to silos or containers. The whole process is carried out under conditions which avoid any premature foaming.

The EPS micro pellets produced with the Sulzer EPS process can be further processed with the same technology as conventionally produced EPS beads and yield a foamed product that matches all properties (mechanical, thermal etc.) as the state-of-the-art EPS. In addition, the new Sulzer EPS process provides the opportunity to produce new, special grades that are not possible to obtain through conventional suspension polymerization as used today.



Typical sieve analysis of Sulzer EPS

Process Characteristics

- Pentane yield in the final product > 97 %
- Product properties match suspension EPS
- Smallest micro pellet size 0.7 mm
- Size class 0.8 – 1.4 mm: > 95 % yield

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