

Sulzer technology for synthetic fibers



Why actually static mixers?

In fiber production, static mixers from Sulzer Chemtech are used to ensure optimal mixing and homogenization of the melt. This provides a basis for the economic production of man made fibers of consistently high quality.

Minimal maintenance effort

The principle of static mixing is based on the continuous splitting, extension and transposition of the melt flow over the flow cross-section. Since no moving parts are involved, maintenance costs are reduced to a minimum. The energy required for mixing is supplied by the feeding units such as extrusion screw or gear pump.

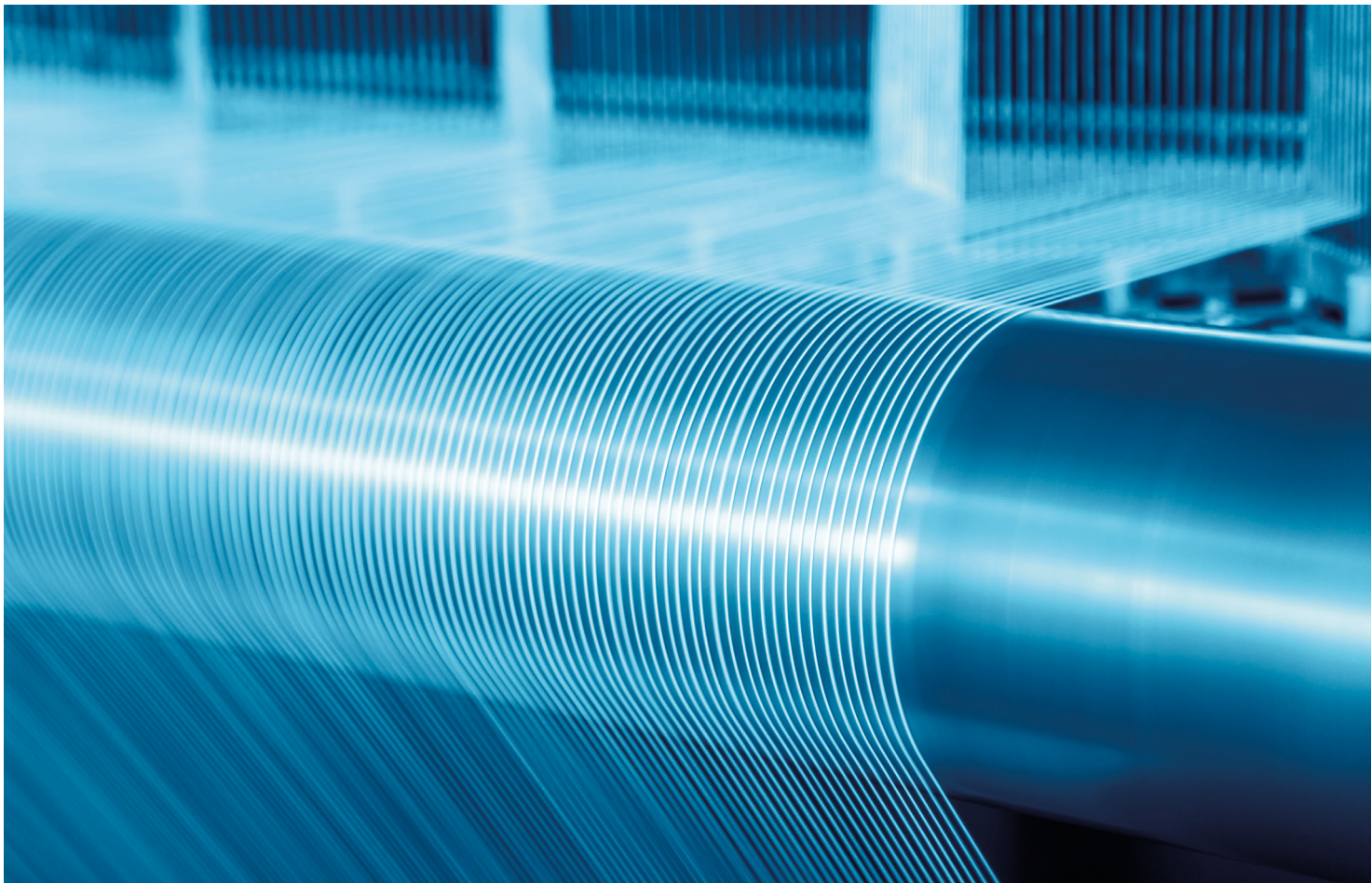
Consistent quality

Production of high-grade man-made fibers of consistent quality is only possible if it can be assured that the polymer melt flow is of optimal quality.

The installation of static mixers from Sulzer Chemtech provides a guarantee for perfectly homogenized melt.

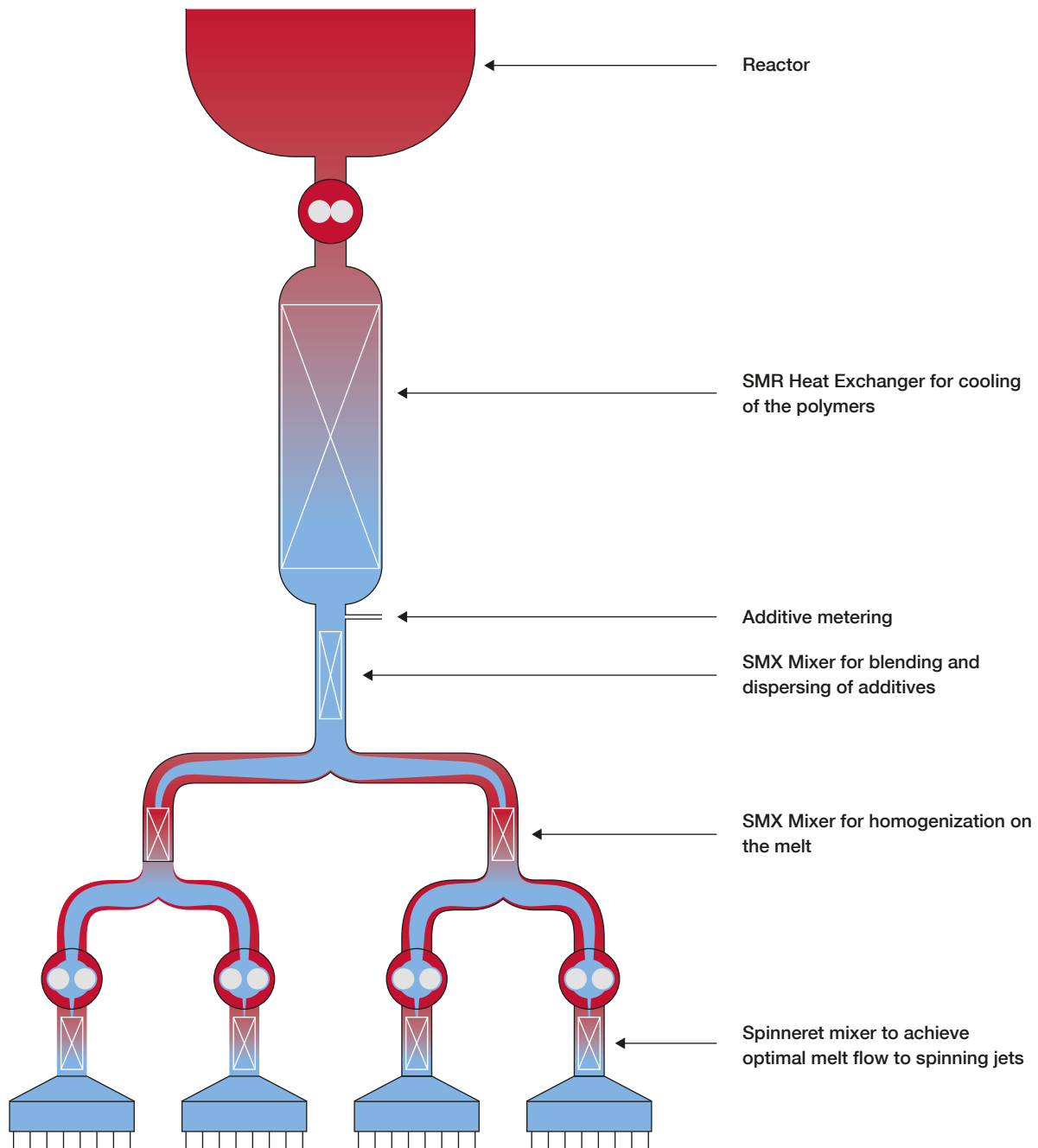
Confidence through experience

Over the past 30 years, Sulzer mixers have been at the cutting edge of static mixer design to meet the changing requirements of the market. Static mixers fulfil important tasks in a wide variety of industries. Sulzer Chemtech is a leading manufacturer of static mixers and with its global presence guarantees rapid and competent solutions to your problems.



Static mixers in man-made fiber plants

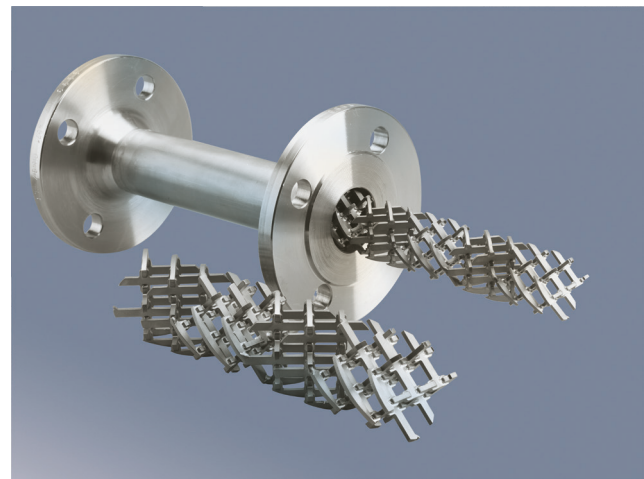
The following example of a direct spinning plant shows where static mixers can be successfully incorporated within the process:



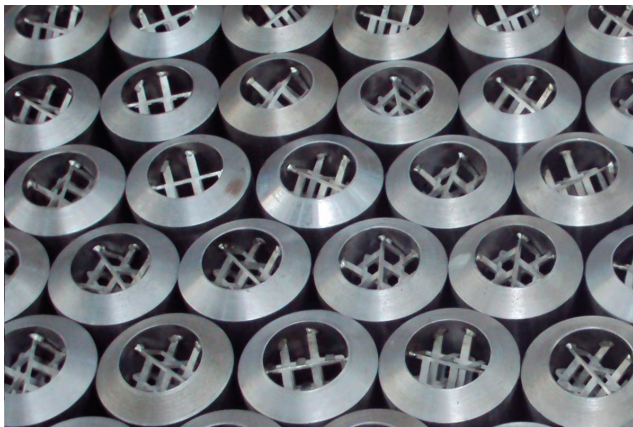
The SMX Mixer

Admixing of additive

The continuous and efficient blending of additives to the melt prior to the spinneret block offers outstanding flexibility with minimal change-over times. The highly effective mixing and dispersion characteristics of the SMX mixer prevent unnecessary over dosing of additives resulting in substantial savings.



SMX Mixer for continuous blending of additives into the melt



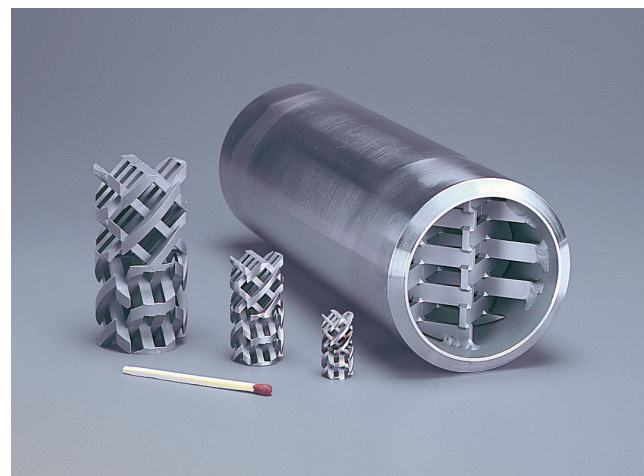
3D module for homogenization of the melt

Improved Temperature Homogeneity

In the manifold of the spinning plant, 3D modules fully homogenize the melt before each flow split. This guarantees a uniform melt quality at all spinneret blocks.

Spinneret

In the spinneret the compact spinneret mixer homogenizes the melt. The result is consistent product quality and a significant reduction in down time due to fiber breakage.



Mixer for installation in the spinneret

The SMR Heat Exchanger

Cooling a polymer melt or solution is a difficult task, as the viscosity of the product between inlet and outlet increases. In some cases, this effect may be very pronounced and can lead to maldistribution of the polymer flow between the tubes of a simple multi-tube heat exchanger. Sulzer has developed a specific equipment for this task, the SMR™. The SMR Heat Exchanger consists of mixing elements made of hollow tubes arranged crosswise inside a pipe. Heat transfer medium flows through the tubes. The tube elements

generate radial mixing in the product flow and at the same time transfer heat to the product through their large surface area.

Due to the narrow residence time distribution and low axial backmixing, there are no stagnant zones in the SMR Heat Exchanger. This ensures that the temperature of the polymer melt can be accurately controlled.



SMR Heat Exchanger for accurate control of product temperature eliminating stagnant zones.



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