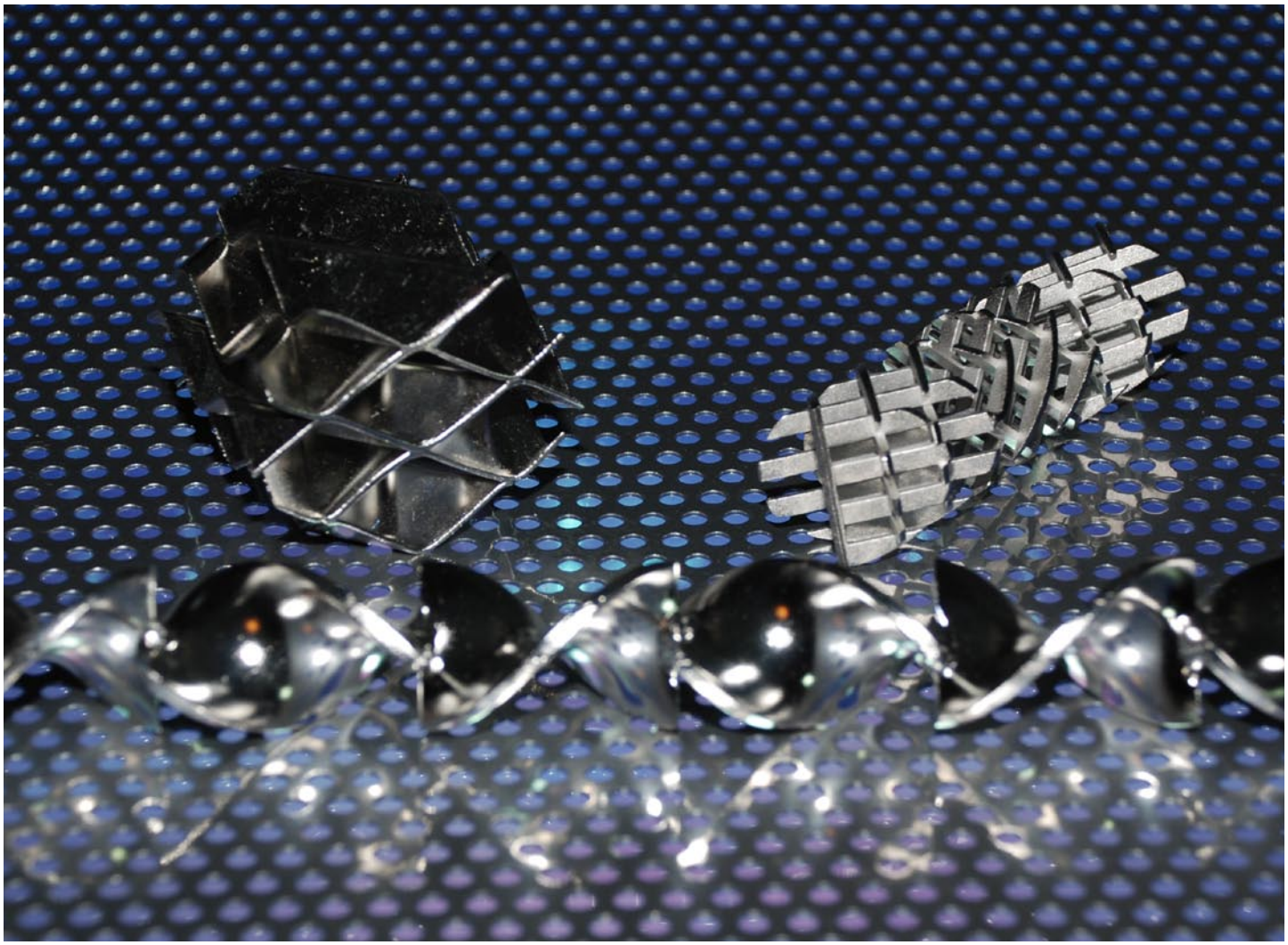
Be.sT

Mixing & Reaction Technology

Technology with Static Internals



Technology & Process

Static mixers homogenize fluids inline without the use of moving parts. Depending on the physical properties, the desired mixing effect is achieved by various operating principles like radial displacement, turbulence enhancement or shear force dispersion in drops or bubbles. To ensure the equalization in concentration, temperature and velocity over the entire flow cross-section each element is oriented 90° to the previous one.

Feed pumps or blowers supply the energy for mixing or dispersing. Since backmixing in static mixers is small, components must be fed at a constant rate to avoid composition variations over the time.

Mixing

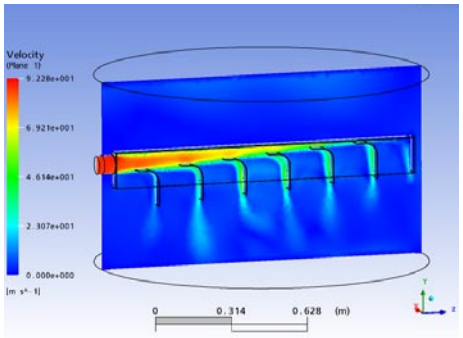
Miscible reactants (liquid, gas, solids) are mixed to specified homogeneity.

Dispersing & Dissolving

Dispersing immiscible reactants and dissolving gases. Vaporizing liquids in front of reactors. Washing and extraction processes.

Gas–Liquid contacting

Scrubbers, Strippers, Extraction and Absorption Applications



Flow Conditioningg

A uniform flow velocity distribution throughout the equipment, e.g. catalytic reactors, is for many processes an important precondition to achieve expected high performance goals. Recirculation flow, dead zones or break through zones are effectively eliminated.

Static Mixer for Turbulent Flow

At Reynolds-Number (Re) above 2.300 in pipes the flow is turbulent. The turbulences result in a good mixing with a good radial exchange of mass flow. There are different geometries available to reach the specified mixing effect and pressure drop in the flow range.

Be.sT MV

To mix and disper low viscous fluids, gas-liquid contact and gas-gas applications.

Each mixing element is a specially designed rigid geometric structure which divides the flow and recombines it in a geometric sequence. Mixing results as the re-directed fluid follows the geometry of the channels in the motionless mixing device.

The MV/MVL mixing elements consist of stacked corrugated sheets oriented to create a large number of intersecting flow channels.

Fluid entering the mixer is divided and redirected along one of the many flow channels.

The combination of layer generation and the large number of flow channels per element ensures thorough mixing, and is responsible for the short length of the BE.ST mixer. The mixing efficiency remains constant over a wide range of flow rates and viscosities.

Be.sT MH

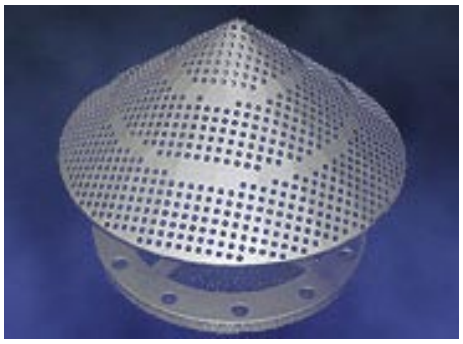
The well known helical mixer has very good mixing results in diameters up to DN50 and for easy to mix systems. The low pressure drop, easy cleaning and installation are the main advantages for the MH mixer.

There is a special construction with round edges for smooth mixing applications (with a low shear rate). So even temperature sensitive products like PVC can be mixed without „burning“ the product.

Be.sT MX3

The MX3 is producing turbulences for the mixing effect. The Re-number should be more than 10.000. For mixing of constant flows in high turbulent flow this easy to produce mixer is the best choice for a very good price.

Static Mixer for Flow Conditioning



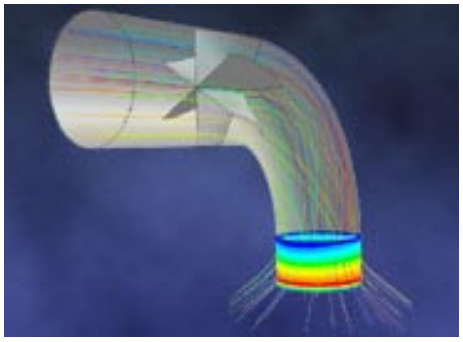
Be.sT CE

At pipe elbows, enlargements or at the inlet of columns and reactors arise always an uneven flow pattern.

To fix this problem BE.ST has different flow conditioner to well balance the velocity.

These results in a much better flow all through the column or reactor, what means a much better performance of the equipment. BE.ST has a lot of experience and can do flow simulation special for the costumer problem.

Many installation result in a dramatically decrease of operating cost so the payback time for this flow consitioners is very short.



Be.sT CR

The gas inlet of reactors has often a 90° elbow in front. To homogenize the flow into a reactor the BE.ST CR is used. The CR mixer rotate the flow to have all flow paths with the same length.

This is a simple way and a cheap equipment to bring you expensive reactors to a better performance.

Static Mixer for Laminar Flow

Be.sT MX

The MX mixing elements consist of a structure of crossing inter-meshing bars which are installed into the flow channel and do mix the high viscous product: The flow is continuously split, stretched, recombined and conveyed, thus, according to a geometric principle, continuous mixing with ideal plug-flow behavior and minimum residence time are achieved.

Each MX is rotated 90° from the adjacent element; inhomogeneity is resolved two-dimensionally in each subsequent element.

MX mixer are available from D=10mm.

Served Industries

BE.ST Mixers are used in the following industries:

Chemical Industry	Mixing miscible/dispersing immiscible reactants dissolving gases neutralizing or pH adjustment
Oil- und Gasindustry	Wash and Absorption process Sweetening Blending Chlorinating hydrocarbons Dehydrating natural gas
Food and Beverage	Mixing flavours, enzymes and other ingredients Diluting concentrated juices or molasses Heating and Cooling of slurries, chocolate, etc. Dissolving CO2 into beverage
Water & Wastewater	Aerating of water Neutralizing, adjusting pH Diluting Flocculants Stripping excess CO2 with air Dissolving ozone
Energy	Mixing blast-furnace and coke oven gas Reheating flue gases in desulfurization plants
Polymers & Plastics	Mixing catalysts or inhibitors into polymer solutions Cooling polymer melts before processing or removing heat of polymerization Dispersing a low viscous stripping agent to polymer solution
Extrusion & Injection molding	Homogenizing temperature and colorants in the polymer melt Mixing additives, mineral oil, pigments into the polymer just upstream the pelletizing unit
Cosmetics & Detergents	Sulfonisating fatty alcohols with oleum Mixing components Diluting surfactants

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BE.ST

The process knowledge and engineering experience with static mixers and heat exchangers give BE.ST the ability to design equipment and systems to meet specific costumer needs perfectly.

This capability, coupled with continous technological improvement is giving BE.ST an excellent position in the industry.

BEST specializes in static mixing, reaction, polymerization, heat transfer and related technologies and will secure our client the BEST solution for their application.

Manufactured in Germany we are serving the global market all over the world and meet any specified codes and standards.

BE.ST GmbH
Im Petersfeld 7c
D-65624 Altendiez

Phone: +49 (0)6432 98842-71
Fax: +49 (0)6432 98842-65
E-Mail: info@best-in-process.de

www.best-in-process.de