

MAIN LIST OF PRIMIX STATIC MIXER DESIGN COMPETENCE

■ Specifications

- ☞ Mixing operations: Liquid-Liquid, Liquid-Gas, Liquid-Solid, Gas-Gas, Gas-Liquid.
- ☞ Name of fluids to be mixed & phase
- ☞ Miscible or none-miscible fluids
- ☞ Capacities of main and side streams
- ☞ Densities of inlet streams and outlet mix
- ☞ Viscosities (dynamic or kinematic) of inlet streams and outlet mix
- ☞ Rheological properties in case of none Newtonian fluids
- ☞ Minimum and maximum operating temperature
- ☞ Minimum and maximum operating pressure
- ☞ Minimum and maximum design temperature
- ☞ Minimum and maximum design pressure
- ☞ Construction material
- ☞ Diameter of connecting pipe work
- ☞ Type of connections
- ☞ Retain method of internals, i.e. welded, removable or high vacuum brazed
- ☞ Type of element, i.e. helical(PMS), quatro(PMQ), cross(PMX) or V-shaped (PMV).
- ☞ If needed, type of injector, i.e. quill, sparger or lance, removable or none removable
- ☞ For PED guideline 97/23/EC: fluids hazard category and vapor pressure of liquid at maximum operating temperature

■ Calculated sizing data

- ☞ SI-units
- ☞ Total volume flow
- ☞ Reynolds number, Re_{Dh} number & Ne-factor
- ☞ Resistance factor resulting in pressure drop
- ☞ Residence time & shear rate
- ☞ Bubble size in case of multiple phase mixing
- ☞ Mixing result expressed as technical homogeneity or better in fraction and percentage
- ☞ Main dimension of static mixer
- ☞ Weight
- ☞ PED category and selected optimal module to follow.

■ Common construction materials (not excluding others)

- ☞ (Low temperature) carbon steels and low alloy steels, i.e. A106 Gr. B, A333 Gr. 6, A335 Gr. P11, etc.
- ☞ Stainless steels, i.e. 316L(1.4404) , 304L(1.4306), 321(1.4541), 316Ti (1.4571), etc.
- ☞ PTFE or glass (enamel) lined carbon or stainless steels
- ☞ Steels with fusion bond coatings
- ☞ Duplex & super duplex (1.4462)
- ☞ Exotics, i.e. alloys, Hastelloy®, titanium, nickel, incoloy®
- ☞ Glass fiber Reinforced Plastics (GRP) with chemical barrier or uPVC, cPVC, PE lining
- ☞ Plastics, i.e. uPVC, cPVC, PP, HDPE, PVDF, PTFE
- ☞ Silicate glass

■ Treatments of product wetted surfaces (not excluding others)

- ☞ Pickling and passivating
- ☞ Grinding & glass ball shot blasting or sand blasting
- ☞ Hone finishing for mirror smooth surface
- ☞ (Electro) polish
- ☞ Chromium-plated
- ☞ Ultrasonic cleaning

■ Type of connections (not excluding others)

- ☞ Bevelled weld ends ASME B16.25
- ☞ EN1092-1 flanges: type 01, type 11, etc.
- ☞ ASME B16.5, B16.47 flanges: FF, WN RF, RTJ, etc.
- ☞ Loose flanges and collars for plastic construction materials
- ☞ Sanitary flanges, i.e. DIN11851, bioconnect, tri-clamps, aseptic DIN11864, SMS
- ☞ Threaded ends, i.e. union joints, Swagelok®