

Food and beverages

Static mixer, heat exchanger for food products and beverages

PRIMIX is a supplier and developer of static mixers and heat exchangers for the production and processing of food and drink. With over 30 years of experience we offer through static mixers and heat exchangers solutions for mixing, cooling, frothing, dispersion and pasteurization of foods and beverages.

Sanitary mixers for cooling and heating food and beverages, CIP cleaning

Within the food industry aspects as CIP cleaning, smooth and / or polished surfaces and sanitary fittings, are of importance to achieve the lowest possible germ count. Reality has shown that by applying static mixing elements and by the achieved increased product velocity alongside the inner wall of the tube, the by PRIMIX applied mixing element with respect to an empty tube after CIP Cleaning, provides a considerably cleaner result. The subsequently measured bacterial count is minuscule.



Applications

Applications for PRIMIX static mixers and heat exchangers for food and beverages:

- Mixing flavouring agents, colouring agents, additives or fruit
- Dispersing
- Frothing
- Airing
- Temperature conditioning
- Cooling spreads and butters
- Pasteurisation
- Dosing components for the production of cheese
- Production of drinking yoghurt - blending with fruit juice
- Coffee blending and heating of coffee extracts
- Beer production – adding CO₂ to beer
- Mixing edible oils
- Desliming vegetable oils with phosphoric acid
- Caramel crystallisation
- Sterilisation of vegetables and fruit concentrates

Below, a number of applications will be explained in more detail.

Cooling chocolate paste (idem for peanut butter and hazelnut paste)

Temperature from 50 to 30°C with glycol of approx. 5°C. Passages are effective up to 80 mm. Tests carried out on a laboratory scale with a diameter of 15 mm are scalable . 100 l/hr results in 5 m³ /hr production.



Marble chocolate - white and brown chocolate

A particular application in which static mixers have proven to be very useful, is marbling chocolate. Here, in a chocolate flow a relatively smaller current of white chocolate is blended. Because it stays in the laminar flow area, layers as described above arise, and this gives the beautiful marble effect. The static mixer also lends itself perfectly to mixing air into chocolate. We speak in this case, of two-phase mixing.

Re-work margarine

Many margarine installations in Europe run with a re-work section supplied by PRIMIX. In the feeding pipeline to the packaging machine a relatively small flow of margarine is returned, so that it is always on standby. Should a sudden failure of the packaging line occur, the full capacity of the cold margarine (6 ° C) will go through the re-work installation and return melted to the storage tank. Systems with warm water as well as those with steam work very satisfactorily.

Pasteurising and cooling sauces

Separated or mixed, an oil / water / starch mix is brought to the desired pasteurization temperature by means of indirect steam heating. The hold phase may take place three times more quickly as a result of the fact that the mixing runs continuously. Thus, not a single particle can escape the heat treatment. Cooling to packaging temperature takes place by means of cold water. The entity forms a closed system, which is very easy to sterilize and to CIP clean.

Offal pasteurization - homogeneous mixing and temperature distribution

Liquid offal - valuable due to the high content of protein, fat and minerals - is thermally treated after the separator. It is a continuous process with an automatic interim CIP cleaning.

Pasteurization of concentrated fruit – fast heating and cooling

Preserving taste in pasteurization and sterilization processes is realised by bringing the product to a high temperature quickly, keeping it there and then cooling it down quickly again. Fast heating and cooling is realised by PRIMIX mixing elements, because these promote exactly the right degree of refreshment on the heat-exchanging surface. Known food manufacturers are using our mixing elements very successfully, allowing the sterilization sections to be built considerably smaller and thus improving efficiency.

Green technology

Static mixer for biofuels, biodiesel, biotechnology and more

- Flue Gas Development
- Pulp and paper production
- Fermentation processes
- Biotechnology
- Mineral Processing
- DeNOx installation (NOx removal)

Static mixer for bio-fuels, bio-diesel or ethanol



Fuels currently have to contain a minimum content of bio-fuels; that is government-imposed legislation and it is expected that these levels will increase further in the near future. This is an excellent opportunity for a static mixer to prove its effectiveness; highly scalable and very easy to control. The in-line mixer requires little space and can be installed between the existing piping. Often the mixing takes place just before delivery to the tanker. For more information on mixers for bio-fuels, bio-diesel or ethanol please contact PRIMIX.