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Processes and devices for the production of synthetic detergents

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Annotation: Generalization of the classification of equipment and equipment in industry, adjustment and equipment, prospects and products causing socio-economic reforms and territorial problems in our republic. "Equipment for the production of synthetic detergents" includes the theoretical foundations and equipment for the production of garments, pastes, powders and other products.

Any technological process of production and processing of chemical substances includes heat exchange processes. Heat exchange devices are called heat exchangers.

Heat transfer media such as water, saturated or superheated steam, refrigerants, hot gases, etc. are often used to heat or cool the flow of substances in chemical plants.

Figure 1 shows the scheme of a standard two-pass horizontal heat exchanger.

It consists of a set of speakers and a distribution chamber. 2 The set of pipes is filled with tubes 5, which are fixed to two pipe rings 9. Pipes, covers, distribution chamber and body are welded to the body. Covers, distribution chamber and body are connected by flanges.

The distribution chamber has an inlet nozzle 14 and an outlet nozzle 13 for supplying and removing the heat carrier from the pipe cavity, and a compartment 3 for increasing the residence time of the heat carrier in the heat exchanger.

Also, the Kojux (outer cover) is equipped with two fittings 11 and 12 for the inlet and outlet of the heat carrier supplied to the annular space. The Kojux is mounted on two supports 6.

In order to ensure the zigzag movement of the heat carrier, 8 sections are installed in the inter-tube space, which are fastened by ties 7. The flow of the first heat carrier is directed to the distribution chamber through the nozzle 14, from where it enters the upper pipes of the set ; after turning to the right cover, it passes through the lower pipes, and then is discharged through the fitting 13.

The flow of the second heat spreader enters the inter-tube space through the shutter 11 and passes to the outlet shutter 12 in a zigzag pattern due to the presence of separators 8.

Heat exchange through the surface of the pipes goes from hot refrigerant to cold. The currents of hot and cold heat carriers move in reverse. The larger the surface of this heat exchanger (pipe surface), the more intense the heat exchange. In order to prevent the pipes from being eroded by the moving substance, a bypass device 10 is installed at the bottom of the nozzle 11.

Tube heat exchangers are most often used in chemical technology, but other types of heat exchangers can also be used.

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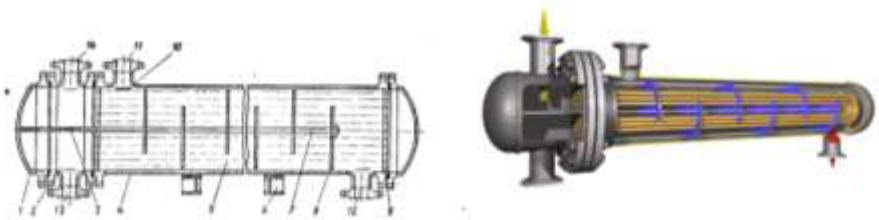

Figure - 1. Scheme of the TH type heat exchanger, horizontal:

1st cover; 2nd distribution chamber; 3.8 obstacles; 4th corps; 5-pipe; 6th base; 7th link; 9-pipe ring; 10- bypass device; Shooters 11-14

Figure 1 shows a diagram of a spiral heat exchanger characterized by small-scale rapid heat exchange. On the surface of the heat exchange, it is formed by spiral strips 1 and 2, which form two spiral channels B and C of rectangular section.

The first inner turn of the spiral is strengthened by the separating discs 4, which are interconnected by longitudinal sections 3. To give stability to spirals, shutters are welded to the surface of tape 5, the distance between them is 70-100 mm.

When forming a spiral, linear distance spacers 6 are placed along the ends of the channels, for standard heat exchangers this gap is 8-12 mm.

Heat transfer is carried out through the surface of the spiral. Heat exchangers are characterized by a high heat transfer coefficient, a compact structure and an increase in the speed of cooling water.

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