



Product Code . JL-TWL-9109

Rising Film Evaporator

Description

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A rising film or vertical long tube evaporator is a type of evaporator that is essentially a vertical shell and tube heat exchanger.

These operate on a "thermo-siphon" principle.

Feed enters the bottom of the heating tubes and as it heats, steam begins to form.

The ascending force of this steam produced during the boiling causes liquid and vapors to flow upwards in parallel flow.

At the same time, the production of vapor increases and the product is pressed as a thin film on the walls of the tubes, and the liquid rises upwards.

This co-current upward movement has the beneficial effect of creating a high degree of turbulence in the liquid.

This is advantageous during evaporation of highly viscous products and products that have a tendency to foul the heating surfaces.

Usually, there must be a rather high-temperature difference between the heating and boiling sides of

this type of evaporator.

Otherwise, the energy of the vapor flow is not sufficient to convey the liquid and to produce the rising film.

The length of the boiling tubes will typically not exceed 23 ft.

This type of evaporator is often used with product recirculation, where some of the formed concentrates are reintroduced back to the feed inlet in order to produce sufficient liquid loading inside the boiling tubes.

Applications:-

There is a wide range of applications for rising tube evaporators, including effluent treatment, production of polymers, food production, thermal desalination, pharmaceuticals, and solvent recovery.

Rising tube evaporators are mainly used as reboilers for distillation columns, or as pre-concentrators or flash evaporators or pre-heaters designed to remove volatile components prior to stripping.

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