Temperature Gradient Plate MFFT 10 / MFFT 20

ISO 2115 – ASTM D 2354

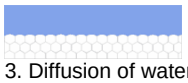
The new designed temperature gradient plate
for measuring the **M**inimum **F**ilm **F**orming **T**emperature , **MFFT**

The minimum film forming temperature (MFFT) is the minimum temperature at which synthetic latex, emulsions, polymers or adhesives will coalesce when laid on a substrate as a thin film.
The ideal way to determine MFFT is to simultaneously dry the emulsion under test over a range of temperatures to see which is the lowest at which film-forming has occurred. This is best achieved in practice by using the Coesfeld MFFT gradient plate.

Three steps of the film-forming


1. Evaporation of water


2. Packing and deformation of particles


3. Diffusion of water out of film and coalescence of particles.

A film of the latex under test is cast along the stage and left to dry. A visual inspection of the dry film is then made to determine the position along the length of the film where it changes from the coalesced to the non-coalesced state. A non-coalesced film shows whitening and/or cracking. The lowest temperature at which the film is coalesced is reported as the MFFT.

The Coesfeld MFFT has been developed to give the user a comfortable possibility to measure the MFFT according the practice described in the ASTM D 2354 and ISO 2115.

The temperature gradient plate consists of a high precision chromium measuring plate, with equispaced temperature sensors beneath the surface.

For measuring the temperature, the MFFT 20 is equipped with 20 Pt-100 temperature sensors. (MFFT 10: 10 Pt-100 sensors). The microprocessor controller guaranteed an optimum temperature control.

The temperature set points for the MFFT 20 can vary in a wide range from – 30° to +250°C with a maximum possible gradient on the surface of 100°. (MFFT 10: -5° to +80°C with a maximum gradient of 20°).

Purge gas is dried with an integrated membrane dryer and flows over the platen.

A constant flow acc. to the standards can be set with a built in flow meter.

The flat hinged perspex cover provides thermal and atmospheric insulation whilst allowing constant visual inspection of an experiment.

Option
Cooling devices with different ranges of capacity adapted to the customer requirements are available.
Different kinds of film casters completed the components of the temperature gradient plate.

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