

# Vaporisation and Evaporation

**Temperature and pressure determine the state of aggregation of a material, that is, whether it is solid, liquid or gaseous.**

For example, water at normal pressure (1013 hectopascal, hPa) and at temperatures below 0 °C is solid (ice), between 0 °C and 100 °C it is liquid, and at boiling point, that is, at temperatures above 100 °C, it is gaseous (steam). The special case of boiling - evaporation occurs when particles with a high kinetic energy (e.g. through the influence of heat) are able to overcome the attractive forces of particles with lower kinetic energy in a fluid. If the particles remaining in the cooled down fluid continue to extract energy from their surroundings, the fluid will eventually evaporate entirely.

In a conventional **temperature control chamber** with natural convection or recirculating air, **temperature distribution** that is as even as possible (no formation of hot spots) reduces the risk of the evaporation of fluids in samples. For a chamber load that must not dry out under any circumstances, this is supported by the continued addition of humidity, e.g. using water trays or a controlled feed of humidity.

[Overview Glossary Temperature control chamber](#)

Picture credit: Memmert GmbH + Co. KG

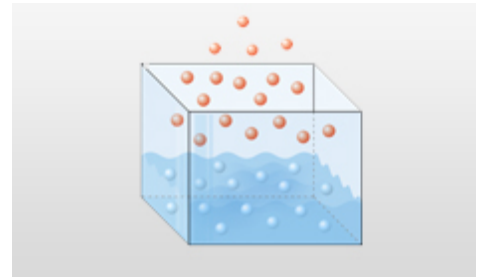
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Evaporation of fluid in a temperature control chamber



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