

Natural convection/forced air circulation

A **thermal oven** or **drying oven** usually has a chamber volume of between 20 and 800 litres and a temperature range from +5 °C above room temperature to +300 °C (details on the basic [operation](#) and [fittings](#) of a **temperature control chamber**) the inner chambers are generally made of corrosion-free **stainless steel** 1.4301 (acc. to standard ASTM 304), resistant to most acids.

Heating and ventilation

Thermal energy is transferred by **convection** and radiation to the chamber load. The heating of the chamber is usually achieved by ring heaters in the rear wall, heating coils in the lower third of the **drying oven** or heating systems behind the entire surface of the chamber walls. Drying takes place faster the higher the temperature, and the drier the air within the chamber. Via a switchable fan (speed adjustable from 0 to 100%), **heat transfer (convection)** and air exchange are accelerated and the temperature is distributed homogeneously within the chamber (for details see **heat transfer** by means of [convection](#)).

Safety

If flammable materials such as gas, dust, fog or fumes are released during the drying process, a special explosion-proof thermal oven or drying oven must be used. The classification of appliances into different categories, depending on hazards, safety requirements, substance groups and potentially explosive zones is regulated for Europe in the ATEX directives.

[Overview Glossary Temperature control chamber](#)



Thermal oven / drying oven with ventilation, exhaust air, and heated interior walls

Memmert Heating ovens/drying ovens

[Heating oven/drying ovens](#)

[Cleanroom drying oven](#)

[Vacuum drying oven](#)

Autor:

www.atmosafe.net > [Glossary](#) > [Thermal oven/drying oven](#) > [Natural convection/forced air circulation](#)

AtmoSAFE is a brand of Memmert GmbH + Co. KG
Copyright © 2009 Memmert GmbH + Co. KG.
All Rights Reserved.



memmert
Experts in Thermostatics