

## Question

Due to which physical effect is moisture kept in the air?

## Answer

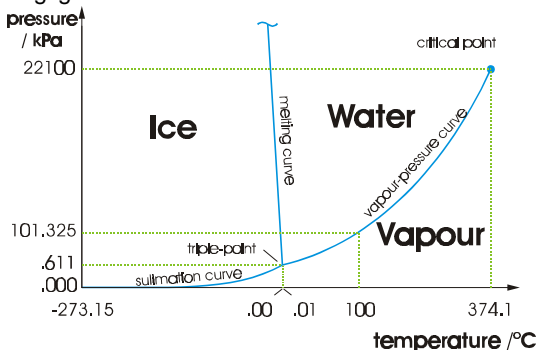
The maximum possible vapor content in the air is called saturated vapor. It is a function solely of temperature. Values of saturated vapor at several temperatures are given in the table.

If there is air or not in a room the saturated vapor is always the same.

**Rain** When saturated air at 30 °C gets cooled down to 10 °C in the atmosphere, more than 20 g water is released from each m<sup>3</sup> air (that are 2/3 of the total water content) and drops down to earth as rain or hail.

temperature / °C	saturated vapour / g / m <sup>3</sup>
0	48
10	94
20	173
30	303

**Physics** The energy of interaction among water molecules themselves is so high that the energy of interaction between water molecules and air molecules is negligible.



Except a tiny deviation water in the air behaves in such a manner as if there were no air at all.

A phase diagram contains lot of information and shows at which temperatures and pressures we have water, ice , or vapor (see figure).

It may not only be read from it that water boils at 100 °C at sea level and

that it already boils at 93 °C on the summit of the Zugspitze.

Furthermore saturation-pressures can be read out and be converted to those values given in the table. For example, we get .611 kPa at 0 °C and 4.24 kPa at 30 °C.