

Glossary of Terms

Absorption (of water)

It is a **physical** process in which molecules of water penetrates into the bulk of a material. Absorption should not be confused with adsorption.

E.g. sponge *absorbs* water.

See *adsorption*.

Absolute Humidity

The mass of water vapour present in unit volume of moist air of a given temperature and pressure.

Adsorption (of water)

It is a **chemical** process in which molecules of water are attracted by the surface of a material and form a surface layer on it. Adsorption should not be confused with absorption. E.g. desiccant *adsorbs* water.

See *absorption*.

Condensate

Condensed material, e.g. liquid water or ice.

Desorption

Release of adsorbed or absorbed substance.

Desiccant

Any substance which exerts a drying action by chemically adsorbing water vapour. The most commonly used desiccants are silica gel and molecular sieves.

Dew Point or Dew-Point Temperature

The temperature at which dew, or condensation, forms, on cooling a gas. This is, in effect, the temperature at which air becomes saturated in equilibrium with water. Expressed in degrees Celsius or occasionally in other units of temperature (e.g. in degrees Fahrenheit in USA).

Learn more: http://brownell.co.uk/datasheets/basics_humidity.pdf

Humidity

The presence of water in air or other gas. Some people use “humidity” to mean relative humidity only. Strictly speaking, “Humidity” also refers to all kinds of absolute indications of humidity. For very low Humidities, other more specific terms tend to be used.

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Hygroscopy

Hygroscopy is the ability of a substance to attract water molecules from the surrounding environment through either absorption or adsorption. Because of their affinity for atmospheric moisture, hygroscopic materials may need to be stored in sealed containers. When added to foods or other materials for the express purpose of maintaining moisture content, such substances are known as humectants.

Moisture

Commonly used to refer to liquid water or water vapour in any form, “moisture” is also the term particularly used to mean water that is adsorbed or bound into any material.

Part per million by volume (ppm. Ppm (v))

Volume of water vapour per total volume of gas, for an ideal gas. Sometimes expressed relative to the total volume of moist gas (mole fraction times one million) or sometimes relative to the total dry gas. For small numbers of parts per million, the two are almost identical: at higher humidities they become significantly different.

Relative Humidity

The relative humidity (RH) is the ratio of the amount of water vapor actually in the air compared to the maximum amount of water vapour the air can hold at that particular temperature (and pressure). Relative humidity is given as a percent. So, air with a 50 percent relative humidity actually contains one-half the amount of water vapour it could hold. Air with 100 percent relative humidity is said to be saturated because it is filled to capacity with vapour. If we increase or decrease the amount of water vapour in the air, the relative humidity will change.

In many places, the air's total vapour content varies only slightly during an entire day, and so it is the changing air temperature that primarily regulates the full variation in relative humidity. As the air cools during the night, the relative humidity increases. Normally, the highest relative humidity occurs in the morning, during the coolest part of the day. As the air warms during the day, the relative humidity decreases, with the lowest values usually occurring during the warmest part of the afternoon. However, the relative humidity combined with warm temperatures create the humidity or heat index which feels warmer than the actual temperature.

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Vapour Pressure

That part of the total pressure contributed by the water vapour.

Expressed in units of pressure e.g. In pascals (Pa), millibars (mbar), millimetres of mercury (mm Hg) or in non-metric units such as inches of mercury (inHg).