

Topic Page: [Humidity](#)

Definition: **humidity** from *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

Quantity of water vapour in a given volume of the atmosphere (absolute humidity), or the ratio of the amount of water vapour in the atmosphere to the saturation value at the same temperature (relative humidity). At dew point the relative humidity is 100% and the air is said to be saturated. Condensation (the conversion of vapour to liquid) may then occur. Relative humidity is measured by various types of hygrometer.

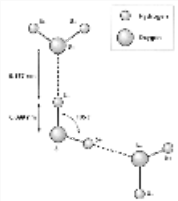


Image from: [Adjacent molecules of H₂O clinging... in The Encyclopedia of Ecology and Environmental Management. Blackwell Science](#)

Summary Article: **humidity**

From *The Columbia Encyclopedia*

moisture content of the atmosphere, a primary element of climate. Humidity measurements include absolute humidity, the mass of water vapor per unit volume of natural air; relative humidity (usually meant when the term *humidity* alone is used), the ratio of the actual water-vapor content of the air to its total capacity at the given temperature; specific humidity, the mass of water vapor per unit mass of natural air; and the mixing ratio, the mass of water vapor per unit mass of dry air. Absolute humidity finds greatest application in ventilation and air-conditioning problems. Humidity is measured by means of a hygrometer. The rate of evaporation decreases as the moisture content of the air increases and approaches saturation. In addition, the saturation point (moisture-holding capacity of the air) increases rapidly as the temperature of the air rises (see dew). Thus cold air, while its moisture content is necessarily quite low (low absolute humidity), may be almost saturated with respect to the maximum amount of water vapor it is capable of holding (high relative humidity). Cold air with high relative humidity “feels” colder than dry air of the same temperature because high humidity in cold weather increases the conduction of heat from the body. Conversely, hot air attended by high relative humidity “feels” warmer than it actually is because of an increased conduction of heat to the body combined with a lessening of the cooling effect afforded by evaporation. On the other hand, a low relative humidity “modifies” the effect of temperature extremes on the human body. Humidity decreases with altitude. Proximity to large bodies of water and the prevalence of moisture-bearing winds favor high humidity. A temperature-humidity index has been developed by the U.S. National Weather Service that gives a single numerical value in the general range of 70 to 80 reflecting the outdoor atmospheric conditions of temperature and humidity as a measure of comfort (or discomfort) during warm weather. The temperature-humidity index, I_{TH} , is defined as follows: $I_{TH} = 0.4$ (dry-bulb thermometer temperature F + wet-bulb thermometer temperature F) + 15. When the index is 70 most people feel comfortable; at 75 about half the population is uncomfortable; at 80 most are uncomfortable.

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humidity. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/humidity>



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