

Topic Page: [evaporation](#)

Definition: **evaporation** from *The Penguin Dictionary of Science*

The process in which a liquid turns to a gas below its boiling point. Evaporation continues until the saturated vapour pressure of the liquid is reached. Evaporation can be used to separate a solute from a volatile solvent. Crystals are often produced by evaporating water to form a hot concentrated solution; when the solution cools, crystals form.

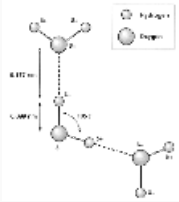


Image from: [Adjacent molecules of H₂O clinging... in The Encyclopedia of Ecology and Environmental Management, Blackwell Science](#)

Summary Article: **evaporation**

From *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

The change of state that occurs when a liquid turns into a gas (strictly, a vapour) without the liquid's temperature reaching boiling point. In a liquid the particles are held together by mutual forces, yet are able to move about. Some particles in a liquid have more energy than others. Even when a liquid is below its boiling point, some particles have enough energy to escape and form a gas. Evaporation is greater when temperatures and wind speeds are high, and the air is dry. It is why puddles dry up in the sun, and clothes dry faster in dry, windy weather.

A liquid left to stand in a saucer eventually evaporates because, at any time, a proportion of its molecules will be fast enough (have enough kinetic energy) to escape from the attractive intermolecular forces at the liquid surface into the atmosphere. The temperature of the liquid tends to fall because the evaporating molecules remove energy from the liquid. The rate of evaporation rises with increased temperature because as the mean kinetic energy of the liquid's molecules rises, so will the number possessing enough energy to escape.

A fall in the temperature of the liquid, known as the **cooling effect**, accompanies evaporation because as the faster molecules escape from the surface, the mean energy of the remaining molecules falls. The effect may be noticed when sweat evaporates from the skin. It plays a part in temperature control of the human body.

The evaporation of liquid water to form water vapour is responsible for the movement of water from the Earth's surface to the atmosphere.

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Evaporation and Boiling

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evaporation. (2018). In Helicon (Ed.), *The Hutchinson unabridged encyclopedia with atlas and weather guide*. Abington, UK: Helicon. Retrieved from <https://search.credoreference.com/content/topic/evaporation>



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