Heat-generating fiber

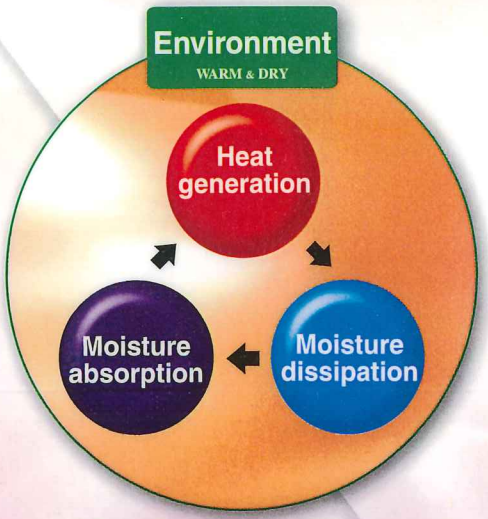
[eks]

TOYOBO
Ideas & Chemistry

Oekotex registered

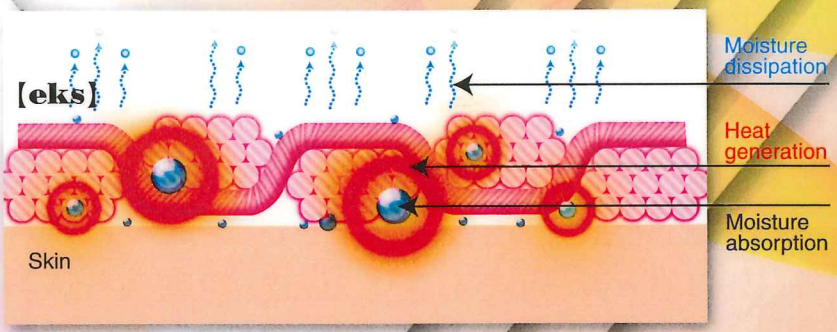
The category of heat-generating fiber began with [eks].

Until now, fabrics could only preserve heat generated by the body, but [eks] fabric can actually heat the wearer. This completely new type of heating material uses the power of water absorption to create a damp-free dry and warm feeling that surpasses that of all other textiles.



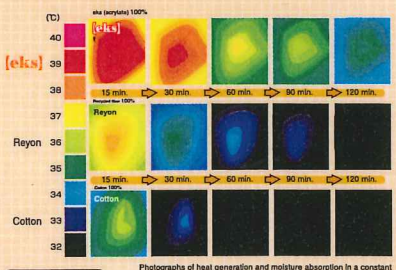
[eks] mechanism

Existing fibers used for cold weather wear/gear simply insulate with its big bulk. They do not actually create heat to the body.
[eks] is a perfectly NEW fiber based on a different design concept. [eks] generates heat. It absorbs water quickly and keeps you dry and comfortable.



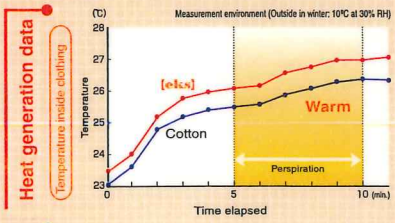
Sustained temperature preservation

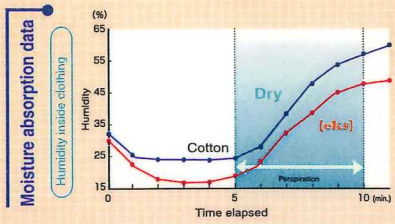
The total energy amount of [eks], which maintains warmth for a long time, is different from other fibers.



Photographs of heat generation and moisture absorption in a constant temperature box (draft-free) kept at 30℃ taken with a thermographer.

Raw cotton data

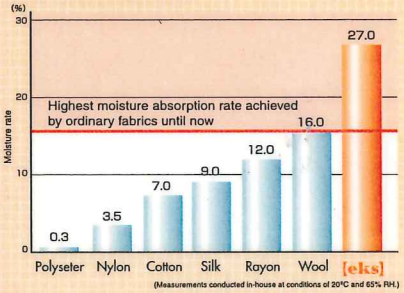




Humidity absorption

The amount of humidity absorbed is the decisive factor! The humidity absorption rate of [eks] far exceeds previous materials.

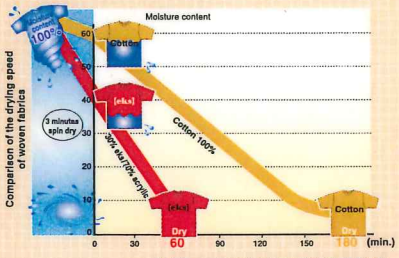
Comparing the moisture absorption rate of other fabrics also makes the difference is clear.



(Measurements conducted in-house at conditions of 20°C and 65% RH.)

Dryness

With excellent water expulsion capability, moisture that is absorbed is quickly expelled, making [eks] dry 3 times faster than cotton.

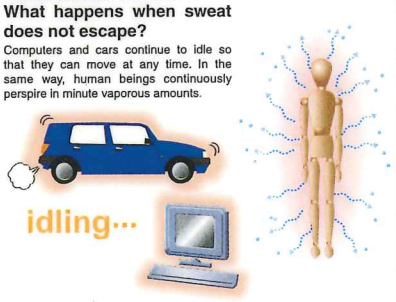


This drying speed comparison is of hang drying at 20°C 65% RH. This image shows, after 3 minutes of spin-drying, the official moisture regain change over time (drying) calculated by the material ratio.

Did you know?

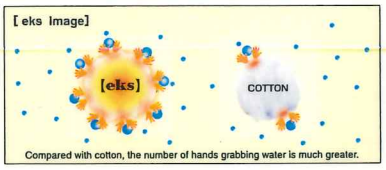
What happens when sweat does not escape?

Computers and cars continue to idle so that they can move at any time. In the same way, human beings continuously perspire in minute vaporous amounts.



How is heat generated?

When a medical injection is given, alcohol is applied to the skin and this causes a cool sensation. As the alcohol evaporates, it takes the heat from surrounding substances.
[eks] is just the opposite. By adsorbing (attracting) perspiration, it generates heat. This is the heat of adsorption.



Compared with cotton, the number of hands grabbing water is much greater.

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