POLYACRYLATE by Teijin Frontier co., ltd.

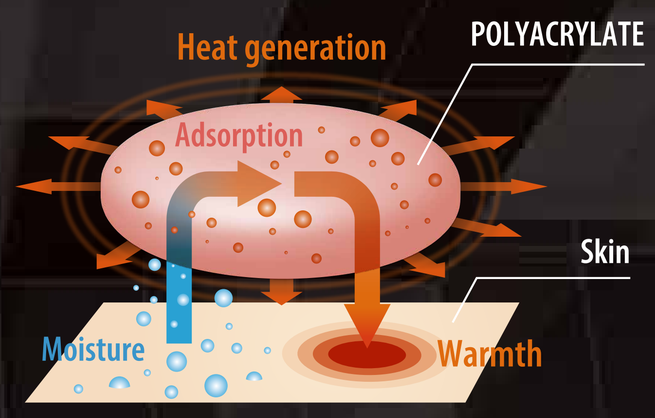
MADE IN JAPAN

Moisture absorption and heat generation fiber with multi-function

Moisture absorption and heat generation

Mechanism

When fibers absorb moisture contained in the air, they generate heat called "heat of adsorption".
Our polyacrylate fiber has high moisture absorption ability due to many hydrophilic groups thus leading efficient generation of "heat of adsorption".



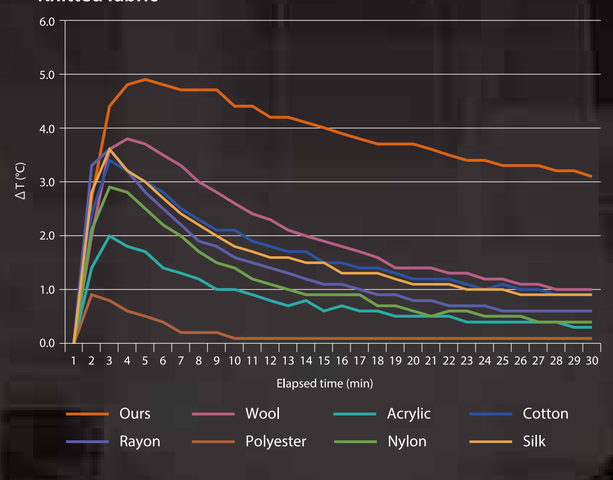
Heat Generation Mechanism

Comparison with other fibers

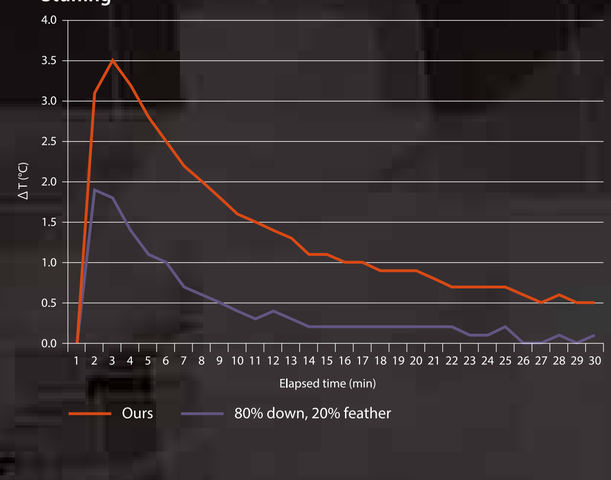
When fibers are placed in a constant temperature environment and the humidity is increased, the temperature rise of our polyacrylate fiber is superior to that of other fibers.

Heat generation (20°C×40%RH ⇒ 20°C×90%RH)

Knitted fabric



Stuffing



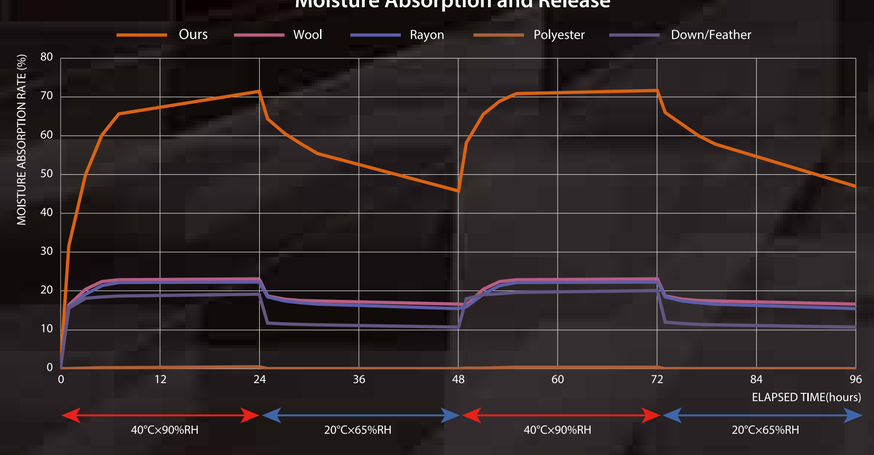
Test method: ISO 18782・JIS L 1952
Continuously supply air with low humidity (20°C x about 40% RH) to one side (measurement side) of the test piece to keep the temperature of the measurement side constant, and make the temperature at this time the initial temperature. The supply air is switched to high humidity (20°C x about 90% RH), and then the temperature change of the measurement surface is measured over time.

note:
Data in this document were measured for 100% fiber, its fabric, or specific mixed materials, and are not guaranteed values. In addition, the performances vary depending on the mixing ratio and specifications. Therefore, we ask that you test the performances of your products for its datum.

Moisture Absorption and Release

When the ambient humidity is high, this fiber easily absorbs moisture, and when it is dry, it has the ability to release the moisture of the fiber to the outside. Repeatedly absorbs and releases moisture according to the surrounding environment.

Moisture Absorption and Release

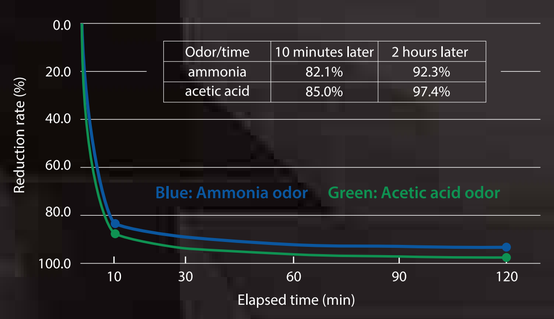


Deodorant

Ammonia / Acetic acid

Our polyacrylate fiber has a deodorant effect for ammonia and acetic acid quickly.

Ammonia and Acetic acid deodorant test



Odor/time	10 minutes later	2 hours later
ammonia	82.1%	92.3%
acetic acid	85.0%	97.4%

Japan Textile Evaluation Technology Council: THE CERTIFICATION STANDARDS OF SEK MARK TEXTILE PRODUCTS: Detector Tube Method
Using the above test method, the data were obtained every 10 minutes from the start of the test until 2 hours later.
Test sample: Our polyacrylate fiber 100%
Evaluation criteria: reduction rate = Ammonia ≥ 80%, Acetic acid ≥ 70%

Safety

Our polyacrylate fiber was evaluated as a "safe product" in the human patch test (Life Science Laboratory Co., Ltd. : test number HPT-19099).

Test method: About 5 mg of the test substance and the control substance (lint cloth) were applied to the upper arm and removed after 24 hours of 20 examinees. Both an hour and 24 hours after removal, the skin symptoms of the contact part for test substance and control substance were determined visually and photographed.
Test sample: Our polyacrylate fiber 100%

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