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FUJIFILM

●INSTRUCTION MANUAL●

PRESSURE MEASUREMENT FILM

PRESCALE for High Temperature

SUPER LOW
PRESSURE
LLW

1 Specifications

Product size	270mm×6m
Pressure range	0.5MPa~2.5MPa/73~363psi
Recommended heating temperature	180°C~220°C/356~428°F (double-sided heating)
Accuracy	±10% or less (measured by densitometer)

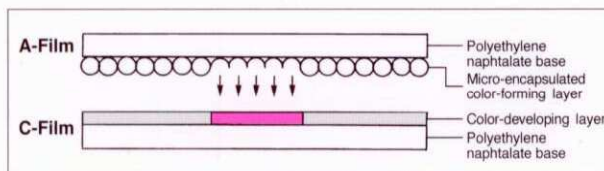
2 STRUCTURE AND HOW IT WORKS

Structure

This product consists of two film types: (Color forming) A layer and (developer) C layer. One is coated with a layer of micro-encapsulated color forming material (A-film) and the other with a layer of the color developing material (C-film). Use two films facing the coated sides each other.

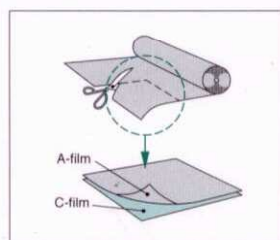
How it works

When pressure is applied, the microcapsules are broken and the color-forming material reacts with the color-developing material to make red color. The microcapsules are designed to break according to the pressure so the color density corresponds to the pressure.

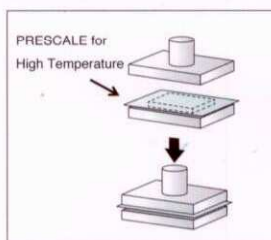


3 HOW TO USE

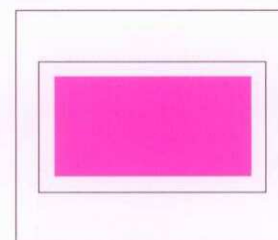
Cut the two films, A-film in a black poly sack and C-film in a blue poly sack, appropriately. Face the rough surfaces of each film and set the films where you want to measure pressure, with the C-film on the bottom and the A-film on the top. Apply pressure. Red patches appear on the film and its color density shows pressure level applied. Take out the C-film to check the pressure distribution. Place the C-film (with the rough surface on top) on a white sheet of paper, and observe in a well lit place.



(1) Cut the Prescale Film into the required shape. With the Two-sheet film, make sure the coated sides on A-Film and C-Film face each other.



(2) Set cut Prescale Film into area to be measured and apply pressure.



(3) Remove film and observe pressure distribution.

4 PACKAGING AND FILM COLOR

〈Package〉

This product is composed of two rolls. A-film is in the black poly sack and rolled with the coated side facing in. C-film is in the blue poly sack and rolled with the coated side facing out.

〈Film Color〉

A-film : Yellowish

C-film : Whitish

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STANDARD CONTINUOUS PRESSURE CHART

Measurement pressure range : 0.5–2.5MPa

•Pressure application conditions

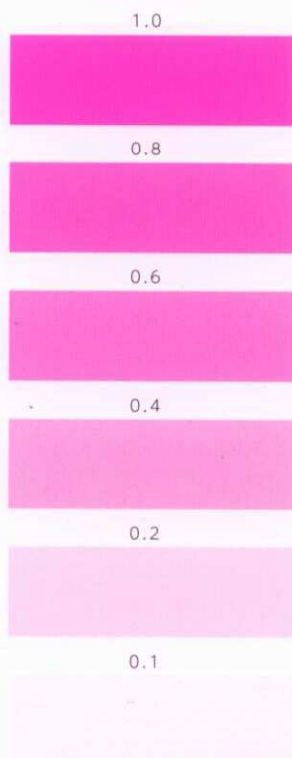
Time to reach the pressure to be measured : 5sec.

Time of retention at the pressure to be measured : 2min(180°C, 200°C), 1min(220°C).

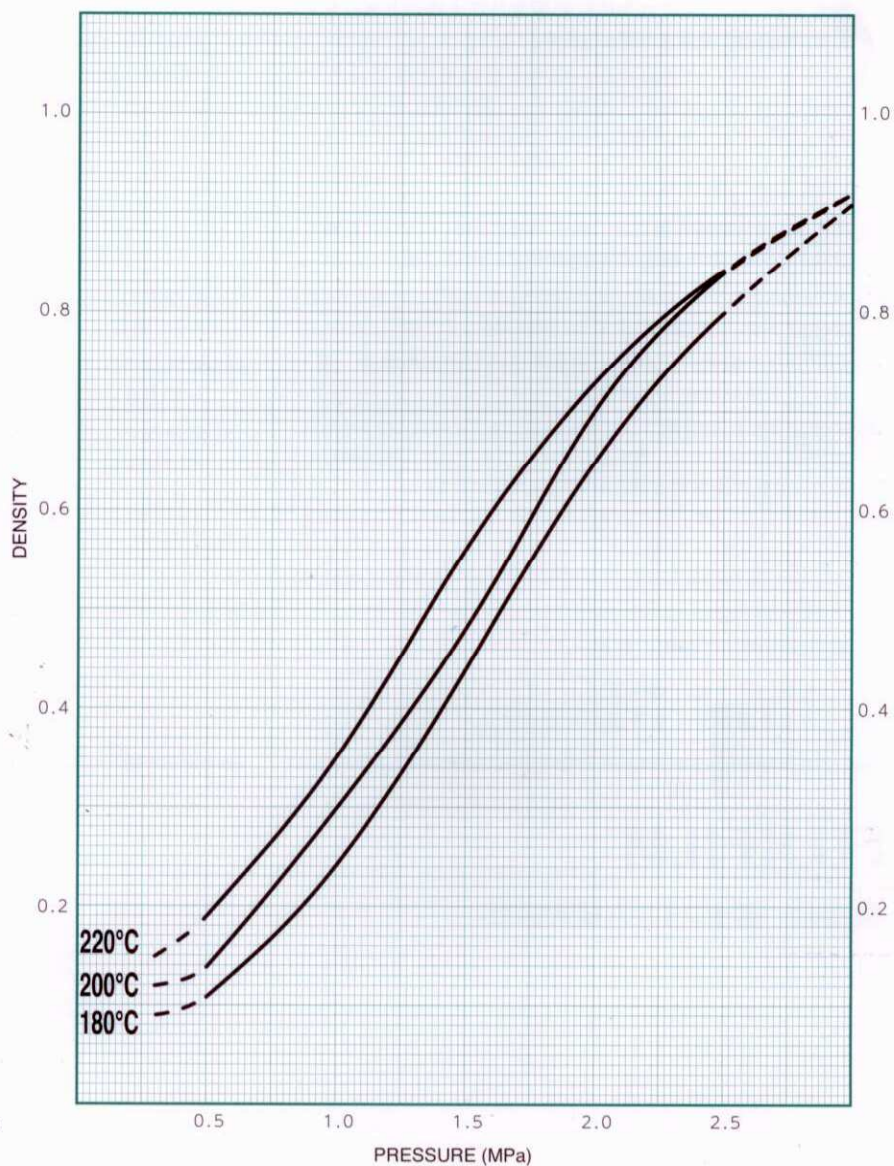
•Heating conditions

180°C~220°C(double-sided heating)

STANDARD COLOR SAMPLE



As the pressure range indicated by the broken line in the graph may exceed the permissible error range, it should be used for reference purposes only.



STANDARD MOMENTARY PRESSURE CHART

Measurement pressure range : 0.5–2.5MPa

•Pressure application conditions

Time to reach the pressure to be measured : 5sec.

Time of retention at the pressure to be measured : 5sec.

•Heating conditions

180°C~220°C(double-sided heating)

STANDARD COLOR SAMPLE

1.0



0.8



0.6



0.4



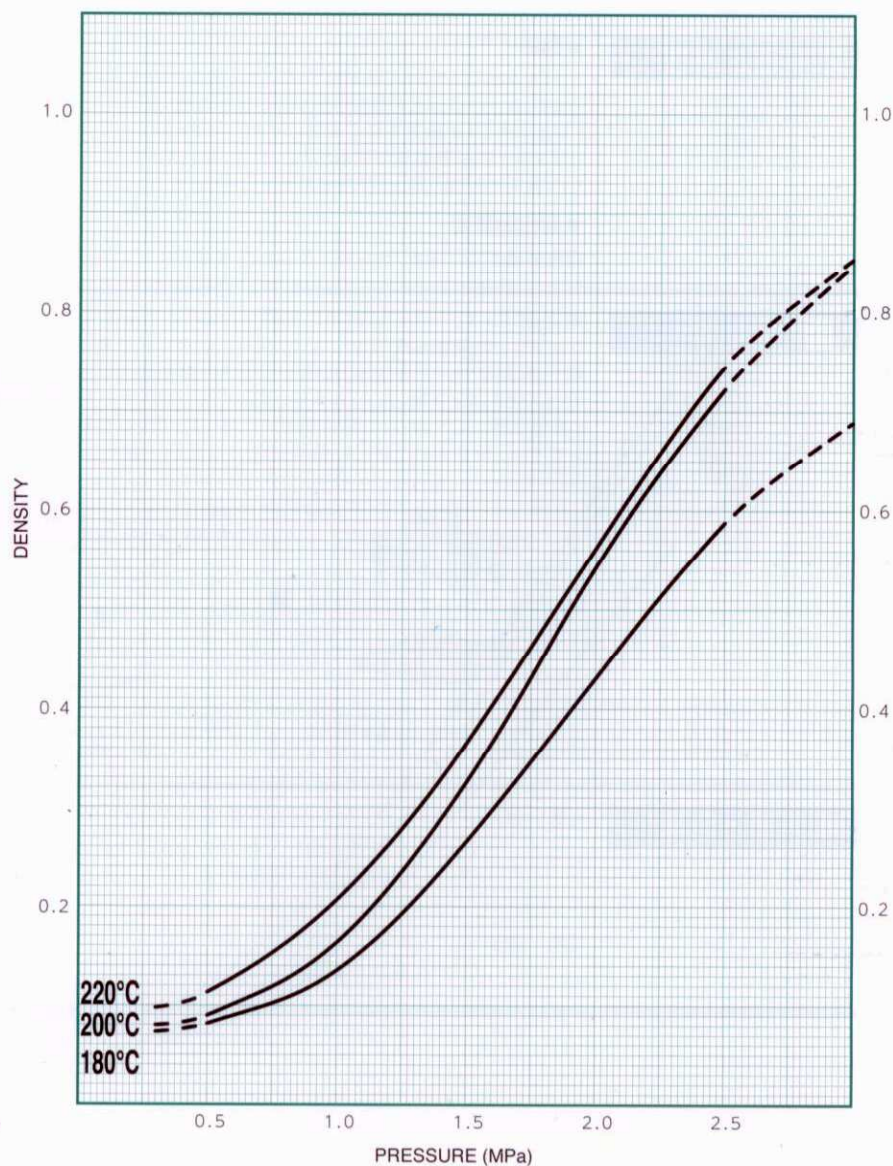
0.2



0.1



As the pressure range indicated by the broken line in the graph may exceed the permissible error range, it should be used for reference purposes only.



5 STANDARD CONDITIONS FOR APPLYING PRESSURE

〈Continuous Pressure〉

Gradually increase the pressure to the required level in five seconds and maintain the pressure for one or two minutes, depending on temperature. (180°C, 200°C is two minutes. 220°C is one minute)

The pressure maintained at this level is referred to as continuous pressure.

〈Momentary Pressure〉

Apply pressure for five seconds and maintain the pressure for another five seconds. The pressure maintained at this level is referred to as momentary pressure.

6 HOW TO DETERMINE THE PRESSURE LEVEL

Pressure distribution check by Prescale alone

When pressure is applied, red patches appear on Prescale. The red color density of Prescale changes depending on the amount of pressure applied. The area with deep red color indicates that the pressure applied was high and conversely the area with light red color indicates that the pressure applied was low. Place the C-film on a few white sheets of paper with its rough surface on top and check the result in the light.

Pressure values determination by using the pressure chart

In order to roughly determine the pressure values, use the Prescale standard color sample and the pressure chart.

Taking the heating temperature and the pressure condition into consideration, you can determine the pressure values to a certain extent by selecting a pressure curve from the standard pressure chart. Place the C-film on a few white sheets of paper with its rough surface on top and check the result in the light.

PRECAUTIONS ON USE

- 1) Contact with the micro-encapsulated color-forming layer of A-film for long periods may cause a skin reaction in sensitive individuals. To wear protective gloves is recommended during handling.
- 2) The A-film is very sensitive and reacts to minute amounts of pressure. If the capsules are broken by pressing or rubbing the A-film before use, it may develop color even when no pressure is applied. Therefore, handle it with care.
- 3) Clean the measuring place beforehand. Water, oil or dust if present on the surface of Prescale, will hinder proper color density development.
- 4) Avoid friction between A and C-films. The films should be bound together at the edge if shearing force is expected during the measurement.
- 5) If you use the product under conditions with different heating temperatures or heating methods, measurement of absolute pressure values will be less precise.
- 6) Prescale is not reusable. The color development may differ from normal if the films were heated without pressurization.
- 7) Use within the recommended conditions. If the pressure or heat exceeds the specifications, the A and C-films may adhere to each other, and the C-film developer layer may be destroyed when peeled off.
- 8) Use Prescale within the given shelf life.

PRECAUTIONS ON STORAGE

- 1) Keep Prescale under cool (below 15°C) and dark room avoid direct sunlight and heat.
- 2) Don't contact Prescale with the following items:
 - Diazo copying papers and carbon papers
 - Water, oil, solvent and other chemicals
 - Vinyl products and adhesive tapes
 - Rubber products
 - Papers written by marker pens
- 3) Keep unused Prescale in the black and blue poly sacks and store them in a box.
- 4) Avoid exposing C-film to the light for extended periods of time.
- 5) Avoid having rough surfaces of used C-films face each other.

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MADE IN JAPAN by FUJIFILM Corporation



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