

## TECHNICAL DATA

| Item                | Conditions     | Unit                        | FS50-M<br>No 3, No 4, No 5,<br>No 7, No 9 | FS90-M<br>No 5, No 7,<br>No 9, No 13 |
|---------------------|----------------|-----------------------------|---|--------------------------------------|
| Thickness (approx.) |                | microns                     | 30,40,50,70,90                            | 50,70,90,130                         |
| Tensile Strength    | L/T 23°C 50%RH | kgf/mm <sup>2</sup>         | 11-14/11-15                               | 9-11/10-12                           |
| Ultimate Elongation | L/T 23°C 50%RH | %                           | 180-200/140-160                           | 220-320/180-280                      |
| Secant Modulus      | L/T 23°C 50%RH | kgf/mm <sup>2</sup>         | 55-65/55-65                               | 45-55/45-55                          |
| Haze                |                | %                           | 3-9                                       | 4-12                                 |
| Gloss               | L/T            | %                           | 130-150/130-150                           | 120-150/120-150                      |
| Shrink              | L/T at 90°C    | %                           | 35/40                                     | *                                    |
| <b>Barrier</b>      |                |                             |   |                                      |
| - Water vapour      | 40°C 90%RH     | g / m <sup>2</sup> day      | 9-25                                      | 6-16                                 |
| - Carbon dioxide    | 23°C 80%RH     | cc / m <sup>2</sup> day atm | 90-125                                    | 50-75                                |
| - Oxygen            | 23°C 80%RH     | cc / m <sup>2</sup> day atm | 18-25                                     | 10-15                                |

## REMARKS:

1. FS50/90-F have similar properties as FS50/90-M except higher gas-transmissions, needed for cheese ripening
2. FS50/90-C have similar properties as FS50/90-M except higher heat-resistance, needed for cooking and surface-pasteurisation
- \*3. Typical shrink values of FS90-M after thermoforming are measured between 25 and 40% depending on thermoforming conditions.

## PRESENT YOUR PRODUCTS IN AN EYE-CATCHING MANNER

KREHALON FS50 and FS90 films were developed in conjunction with specially prepared thermoforming machines.

Together the FS50 and FS90 films and the thermoforming machine have created the Form Shrink system. The Form Shrink system offers to users an innovative automated approach to either vacuum packaging or MAP packs, which uniquely have all the advantages of full shrink presentation.

KREHALON FS50 and FS90 films are designed for the packaging and protection of fresh meat, processed meat, cheese, fish, poultry and game.

**Note:** L/T=Longitudinal and transversal values where applicable.  
These values are typical values for KREHALON Form Shrink films.  
They are not intended for use as limiting specifications.



Your partner in packaging solutions!

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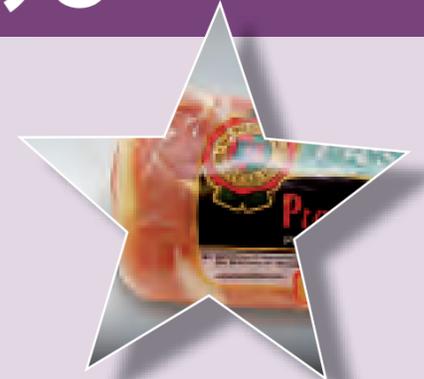
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## KREHALON FS FILMS

THERMOFORMABLE AND HEAT SHRINKABLE  
FILMS FOR THE FORM SHRINK PROCESS



**KREHALON FS50 AND FS90 RANGE OF FILMS ARE MULTILAYER THERMOFORMABLE AND HEAT SHRINKABLE FILMS ESPECIALLY DESIGNED, USING INNOVATIVE PROPRIETARY TECHNOLOGY, FOR THE FORM SHRINK PROCESS.**

THE UNIQUE STRUCTURE OF FS50 AND FS90 FILMS ENABLES A WIDE RANGE OF GAS AND MOISTURE BARRIERS WITH EXCELLENT FORMING, SEALING AND MACHINABILITY. KREHALON FS50 AND FS90 FILMS, BECAUSE OF THEIR STRUCTURE, HELP TO MEET ENVIRONMENTAL CONCERNS FOR NON-CHLORINE CONTAINING MATERIALS AND LESS PACKAGING WASTE. WITH ITS CONTROLLED BARRIER, SHRINK AND SPECIAL OPTICAL PROPERTIES FS50 AND FS90 BRING PROTECTION AS WELL AS GLASS-LIKE, CLEAR PRESENTATION TO ALL OF YOUR PRODUCTS.



## ADVANTAGES OF KREHALON FS50 AND FS90 FILMS WHEN USED IN THE FORM SHRINK SYSTEM

### SEAL INTEGRITY

Fully hygienic hermetic seals, minimising repacking, reducing product returns, increasing shelf life and ensuring no unhygienic product drip during distribution, display or handling.

### EXTENDED PROTECTION

KREHALON FS50 and FS90 films together with full vacuuming, and gas injection for delicate foods, keeps all types of food products fresh through the distribution chain and gives extended product protection and shelf life.

### SUPERIOR PRESENTATION

The smooth second skin effects of KREHALON FS50 and FS90 shrink films with a minimised, trimmed, seal area gives the neatest shrink pack ever. High gloss transparent or coloured films are available. Form Shrink allows, for the first time in a shrink pack, the combination of clear and coloured films. Flexographic printing is also available.

### COST EFFECTIVE

The Form Shrink system is high volume, fully automated and labour saving. It allows easy loading, minimising seal contamination, or even robotic loading. Film usage is minimised with the innovative KREHALON FS50 and FS90 films allowing the use of reduced thicknesses and the Form Shrink skilled engineering maximising the number of packs per unit of film area.

### CONSUMER FRIENDLY

The Form Shrink pack ensures full product quality, which can be inspected by the consumer. An easy open feature can also be incorporated, if required.

### ENVIRONMENTALLY FRIENDLY

KREHALON FS50 and FS90 films and the Form Shrink system reduces product waste, repacking and returns, as well as minimising film waste at the packer, distribution and consumer levels. The neat, tight packs also take up less space and therefore reduce costs for storage, transportation and display. FS50 and FS90 films are made from chlorine-free material.

### TYPES

KREHALON FS50 and FS90 films are available in several types depending on the application and use. Selection of the correct combination of films is vital for optimum pack performance.

## FS50 / FS90 FILMS

FS50 films are designed as a top web film for all packs and as a forming web for shallow draw applications. FS50 films are available in three types depending on application and barrier requirements as follows:

FS50-M for high barrier packs used as top web as well as shallow forming web

FS50-C for high barrier pasteurised or cook in packs used as top web as well as shallow forming web

FS50-F for medium barrier, or gas release, packs as top web as well as shallow forming web

Each type of FS50 film is available in various thicknesses.

FS90 films are designed as a deep draw forming webs. FS90 films are available in three types depending on application and barrier requirements as follows:

FS90-M for high barrier deep draw packs

FS90-C for deep draw pasteurised or cook in packs

FS90-F for medium barrier, or gas release, deep draw packs

Each type of FS90 film is available in various thicknesses.

NB. Any of the above KREHALON FS50 and FS90 range of films can be used in combination with each other as they are all compatible for sealing.

## AVAILABLE WIDTHS

KREHALON FS50 and FS90 films can be slit into single wound films from 100mm to 580mm wide in 5mm increments. FS50 and FS90 films are wound on 6 inch (152mm) paper cores.

## COLOUR AVAILABILITY

All KREHALON FS50 and FS90 films are available as clear films. FS50 and FS90 films are also available in a range of pigmented colours. Please contact KREHALON for further details of availability. NB: Please note all types may require minimum extrusion quantities.

## PRINTING

All customer printing requests are processed by KREHALON's own professional printing design department using the latest technology. KREHALON also has its own plate making department where the print images are transferred to the photo polymer plate using fully digital technology. The fully automated printing press can print up to 10 colours on one or both sides.

With own designing and plate making KREHALON has full control over each step in the printing process thereby ensuring optimal flexibility and speed to fulfil customers' wishes.

## IMPORTANT NOTES

1. For hot water shower or dipping 90°C is the maximum recommended temperature.
2. The ideal storage temperature is 15-25°C with an ideal R.H. of 50-60%
3. Temperature should not exceed 30°C. Avoid direct sunlight and contact with radiators and heating pipes.

