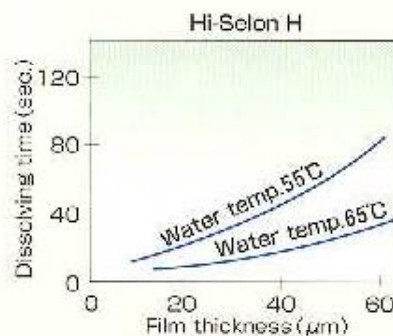
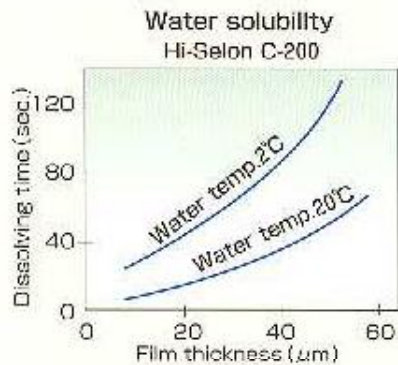


Properties of Hi-Selon

1 WATER SOLEBILITY

We have various grade of Hi-Selon, such as cold water soluble type and hot water soluble type. Please feel free to contact us about our products.



※As dissolving condition changes by the shape and contents of packaging, Preliminary test is needed.

We have C type and S type: can be completely dissolved in cold water.

H type: is strong against cold water and can be completely dissolved in hot water.

Grade	Thickness (μm)	Dispersion Temperature ($^{\circ}\text{C}$)	Complete Solution Temp. ($^{\circ}\text{C}$)
S-400	25	0	2~5
C-200	30	0	2~5
MF	22	10~20	25~30
H	25	37~41	51~60

2 Processing

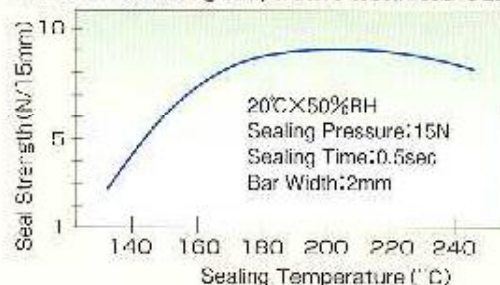
Hi-Selon films can be easily heat sealed by heat sealer. Conditions of heat sealing temperature test is as follows.

Heat sealing temperature varies with the film type, moisture content, and the heat sealer type.

Relative Humidity	45% RH	65% RH	80% RH
Equilibrium Moisture Content	5-7%	8-10%	12-15%
Sealing Temperature	170-200 $^{\circ}\text{C}$ (338-392 $^{\circ}\text{F}$)	150-180 $^{\circ}\text{C}$ (302-356 $^{\circ}\text{F}$)	140-170 $^{\circ}\text{C}$ (284-338 $^{\circ}\text{F}$)

Testing Condition:
Hi-Selon: C-200
Pressure: 1.0kg/cm²
Sealing time: 0.5sec
Bar width: 2mm

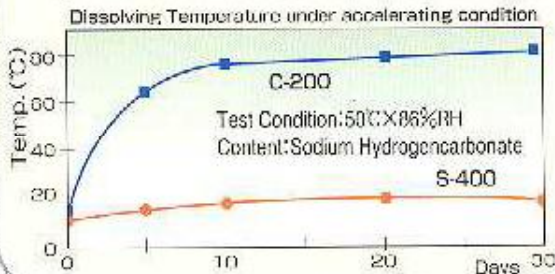
Data on heat sealing temperature test (Hi-Selon C-200)



3

Oil and Chemical Resistance

Hi-Selon is highly resistant to oils, such as vegetable oil, mineral oil, etc. It is also resistant to fats, organic solvents, and hydrocarbons. Both Hi-Selon C-200 and S-400 are cold water soluble type. We recommend S-400 for packaging alkalis.



4

Mechanical Properties

Hi-Selon has been produced and designed to protect contents.

	Relative Humidity (% RH)		
	45	65	80
10% Young's Modulus (kg/cm ²)	1500-2500	800-1700	400-1000
Tensile Strength (kg/cm ²)	300-400	250-350	200-250
Elongation (%)	90-150	200-300	220-300
Tear Resistance (V-notch method) (kg/cm ²)	150-200	100-180	50-150

(For C-200 Type, Temperature: 20°C (68°F))

5

Biodegradation property

It can be biodegraded on specific conditions, and it can be resolved into carbon dioxide gas and water.

COD: Chemical Oxygen Demand
BOD: Biochemical Oxygen Demand

Resin	COD (mg/kg) × 10 ²	BOD ₅ (mg/kg) × 10 ²
Polyvinyl Alcohol	60~100	50~100
Cornstarch	36	7400
Polyacrylic Soda	3.1	95
Polyethylene Glycol	76	6.3
Polyacryl Amide	6.8	76

Measuring Condition :
COD: Potassium Permanganate Method
BOD: BOD value for 5 days

6

Moisture Content

Moisture content of produced rolls is controlled and the produced rolls are vapor proof packed, however when the film is taken out from package, the moisture content changes by humidity and outside air temperature.

Relative Humidity (%RH)	45	65	80
Equilibrium Moisture Content (%)	5~7	8~10	12~15

Grade : Hi-Selon C-200
Condition: at 20°C, after 72 hours

7

Static Electricity Surface Resistivity

Hi-Selon is a hydrophilic film, and it has little static electricity comparing with plastic films such as polyethylene. There is no degradation of workability caused by electrification during packaging, not dust sticking on the rolled film.

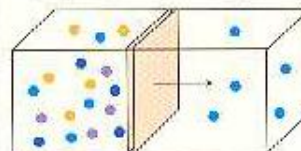
:Hi-Selon.....20°C 65%RH: 1~8 × 10¹⁰ Ω
20°C 45%RH: 1 × 10¹¹ Ω

:Polyethylene...23°C 50%RH: 1 × 10¹³ ~ 10¹⁴ Ω

8

Moisture Permeability and Gas Resistance

Hi-Selon admit steam, on the condition of low humidity, it has high gas resistance to nitrogen, oxygen, dioxide gas, etc. Also the fragrance of the contained materials can be safely preserved.



(Hi-Selon)

- Water Vapor
- Oxygen
- Carbon Dioxide Gas
- Nitrogen

3, Japan
pan
003, Japan

orc 048581

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Hi-Selon