

***Soarnol***®

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ETHYLENE-VINYLAICOHOL COPOLYMER

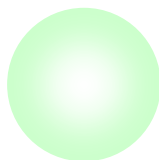


**AT4403**

**AT4403B**

44 mol% Ethylene Content





## [General Description]

Soarnol AT4403(B) is one of the standard grades of “Soarnol®”, its ethylene content is 44 mol% with a low MFR(melt flow rate).

Soarnol AT4403(B) has excellent water resistance and good gas barrier property, especially in high humidity environments. Its gas barrier property is not drastically lower at high humidity. This resin is primarily used in coextruded film applications and can also be used in shrink packaging.

## [General Properties]

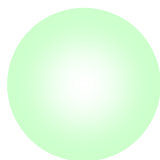
<i>Property</i>	<i>Unit</i>	<i>Value</i>
Ethylene Content	mol%	44
MFR <sup>1)</sup> (@210deg C, 2160g)	g/10min	3.5
Volatile Matter	%	< 0.3
Melting Point <sup>2)</sup>	deg C	164
Crystallization Temperature <sup>2)</sup>	deg C	144
Oxygen Permeability <sup>3)</sup>	cc 20 $\mu$ m / m <sup>2</sup> day atm	1.5
20deg C-65%RH	cc·mil/100inch <sup>2</sup> ·day·atm	0.076
WVTR	g 30 $\mu$ m / m <sup>2</sup> 24hrs	12-25
40deg C-90%RH		

1): Measured with Melt Indexer

2): Measured with DSC, both heating and cooling speeds of 10deg C /min

3): Measured with OXTRAN 10/50 (MOCON)





[Melt Viscosity]

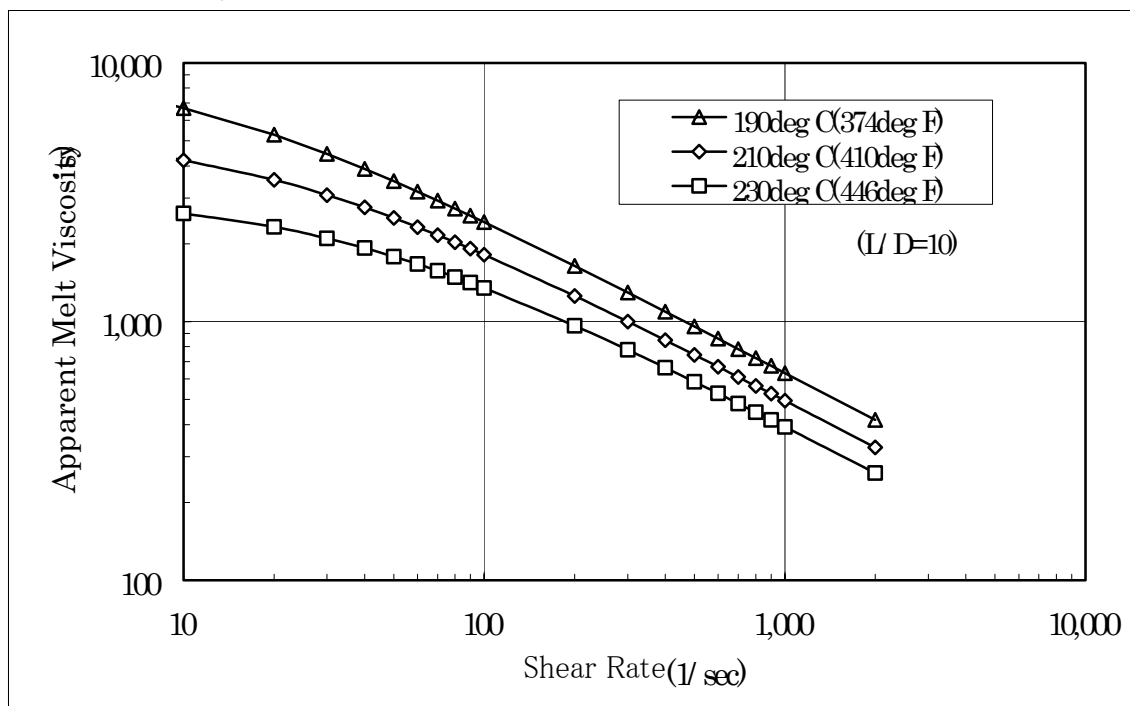


Fig.1 Melt Viscosity of Soarnol AT4403(B)

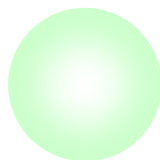
[Example of Processing]

- Extruder: 40 mm  $\phi$  single screw extruder, L/D = 28
- Screw: Full-flighted, constant pitch type, CR = 3.5
- Screen pack: 80/120/50 mesh
- Die: Manifold type, die width = 450 mm, lip clearance = 0.2 mm

Processing Temperature: deg C(deg F)

C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	Head	Die
170	190	210	220	220	220	190-220
(338)	(374)	(410)	(428)	(428)	(428)	(374-428)





## [Hygienic Performance of Soarnol AT4403(B)]

Soarnol AT4403(B) contains no heavy metals or other harmful substances.  
Soarnol AT4403(B) meets the Food Sanitation Standards of various countries.

Japan: Ministry of Health and Welfare Announcement No.370(Dec. 28,1959)  
and Its Latest Amendment No.18(Jan. 31,1994)

Self-Restrictive Requirements on Food-Contacting Articles

Made of Polyolefins and Certain Polymers

U.S.A.: FDA 21CFR 177.1360(a)(3) and 175.105

E U: European Commission Directive 90/128/EEC,  
and Its Latest Amendment

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