

# EVOH, Ethylene-Vinyl alcohol Copolymer

CCP 台湾长春 EVASIN

## DATA SHEET

Item	Unit	Method	EV-3201V	EV-3801V	EV-4405V
<b>Mechanical Properties</b>					
Tensile strength (yield)	Kg/cm <sup>2</sup>	ASTM D638	741	615	552
Tensile strength (break)	Kg/cm <sup>2</sup>	ASTM D638	631	495	425
Tensile modulus	Kg/cm <sup>2</sup>	ASTM D638	3.65E+04	3.52E+04	3.48E+04
Elongation (yield)	%	ASTM D638	5.6	5.85	6.04
Elongation (break)	%	ASTM D638	180	205	224.8
Bending strength	Kg/cm <sup>2</sup>	ASTM D790	1263	1052	906
Bending modulus	Kg/cm <sup>2</sup>	ASTM D790	4.41E+04	3.64E+04	3.31E+04
Izod impact strength	Kg cm/cm	ASTM D256	3.1	1.5	0.88
Shore Surface hardness	M	ASTM D2240D	84	80	79
Density	g/cm <sup>3</sup>	ASTM D792	1.18	1.17	1.14
<b>Thermal Properties and Melt Characteristics</b>					
Melting point	°C	DSC	184.86	174.5	167.8
Heat Deflection Temperature	°C	HDT.ASTM D-648	94.4	85	78
Vicat softening point	°C	HDT.JIS-K6742	173.8	164	156
Crystallization point	°C	DSC 155	163	155	147
Glass transition point	°C	DMA	73.9	64	57
Melt flow index	g/10min	(2160g, 190°C)	1.727	2.54	3.77
	g/10min	(2160g, 210°C)	3.6762	5.46	8.27
Melt Viscosity	Poise	190°C, $\gamma=50\text{sec}^{-1}$	4.57E+04	2.82E+04	1.62E+04
	Poise	190°C, $\gamma=100\text{sec}^{-1}$	3.73E+04	2.31E+04	1.37E+04
	Poise	190°C, $\gamma=200\text{sec}^{-1}$	2.88E+04	1.82E+04	1.12E+04
	Poise	210°C, $\gamma=50\text{sec}^{-1}$	2.68E+04	1.59E+04	8.62E+03
	Poise	210°C, $\gamma=100\text{sec}^{-1}$	2.21E+04	1.32E+04	7.26E+03
	Poise	210°C, $\gamma=200\text{sec}^{-1}$	1.75E+04	1.05E+04	5.81E+03
	Poise	230°C, $\gamma=50\text{sec}^{-1}$	1.56E+04	9.29E+03	5.09E+03
	Poise	230°C, $\gamma=100\text{sec}^{-1}$	1.33E+04	7.95E+03	4.38E+03
	Poise	230°C, $\gamma=200\text{sec}^{-1}$	1.09E+04	6.56E+03	3.66E+03
Coefficient of linear expansion	1/°C	above Tg	5.60E-05	5.60E-05	5.60E-05
	1/°C	above Tg	4.60E-05	6.20E-05	9.10E-05
<b>Gas Barrier Properties</b>					
O <sub>2</sub> -Transmission Rate 1.1	cc.20 $\mu\text{m}/(\text{m}^2 \cdot 24\text{h} \cdot \text{atm})^*$	ASTM D3985	0.6	1.1	2.4
Water Vapor Transmission Rate	cc.20 $\mu\text{m}/(\text{m}^2 \cdot 24\text{h} \cdot \text{atm})^{**}$	ASTM E96	275	175	90

\* at 25°C / 0%RH

\*\* at 40°C / 90% RH

<b>Specification of EVASIN</b>				
Properties	Unit	EV-3201V	EV-3801V	EV-4405V
Moisture content	Wt %	max. 0.3	max. 0.3	max. 0.3
Melt flow(190°C,2160g Load)	g/10 min	1-2	1.6-2.6	3-4
Melt point	°C	180-186	171-177	163-169