

Various Gases Barrier Property of “Soarnol™”

Various gases barrier property of “Soarnol™” is shown in the following.

Permeability for various gases is expressed by the following formula.

$$P = D \cdot S$$

Here P: Permeability coefficient, D: Diffusion coefficient, S: Solubility coefficient

By comparison of N₂, O₂ and CO₂, the difference of each gas permeability is due to the difference of solubility between gas molecule and “Soarnol™” for each gas.

On the other hand, by comparison of He and other gases, the difference of gas permeability is due to the difference of diffusion between He molecule and other gas molecule for “Soarnol™”.

Condition : 20deg C, Dry atmosphere

Dry film, with Differential Pressure Method

Sample	Gas Permeability (cc 20μm/m ² day atm)			
	N ₂	O ₂	CO ₂	He
Soarnol 29mol%	0.018	0.23	0.49	110
Soarnol 32mol%	0.024	0.3	0.62	120
Soarnol 38mol%	0.041	0.53	1.3	180
Soarnol 44mol%	0.1	1.2	4.4	320
ONy	11	24	180	1,700
PET	7.8	30	96	2,600
OPP	600	1,400	10,500	25,000