Fuel Barrier Property of "Soarnol®"

Fuel barrier property of "Soarnol®" is shown in the following.

(1)Test Method

1)Sample

Multilayer pouch: Thickness (HDPE/Tie/EVOH/Tie/HDPE)=(80/10/20/10/80) μm
:Surface Area 200cm² for both sides(Dimensions 10cm*10cm)
EVOH :Soarnol 25mol%,29mol%,32mol%

2)Fuel

E10=(Fuel C/EtOH)=(90/10) vol%
M15=(Fuel C/MeOH)=(85/15) vol%
Fuel C=(Toluene/ i -Octane)=50/50 vol%

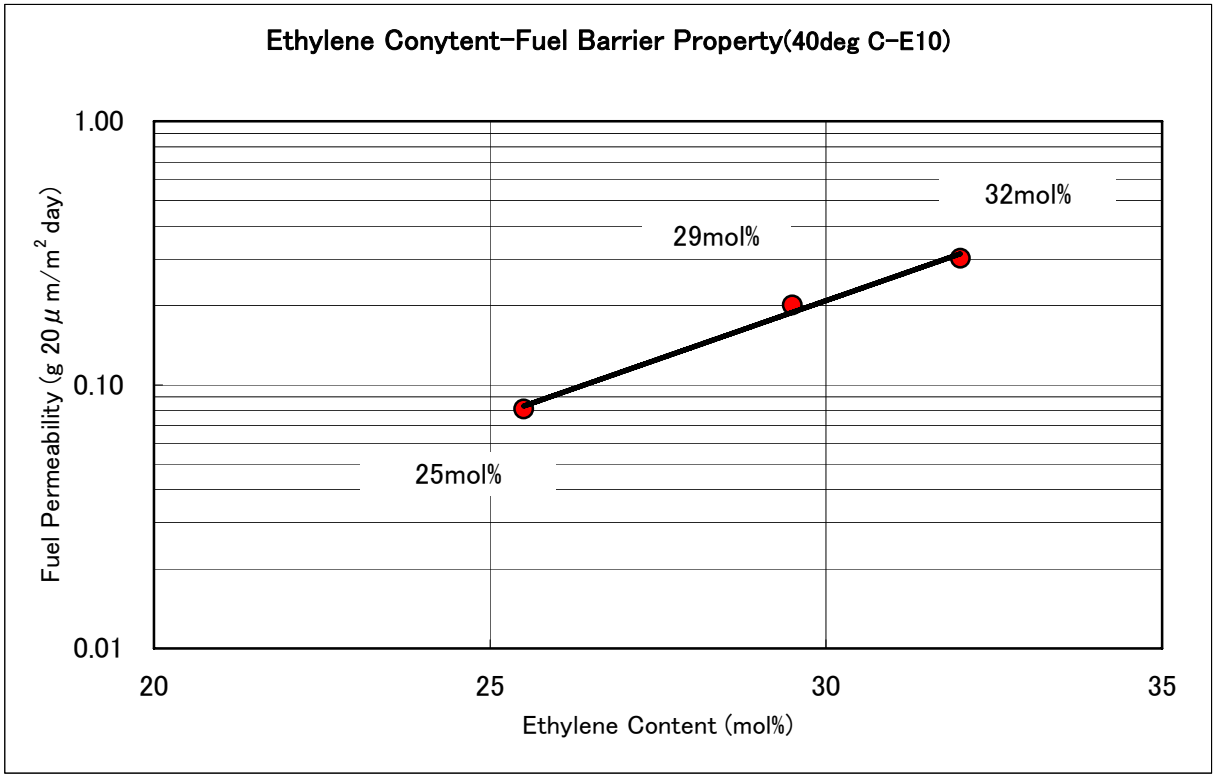
3) Measurement of Fuel Barrier Property

Hold under 40deg C, Dry Atmosphere
Weigh the pouch after predetermined time

(2)Result

1) E10 system

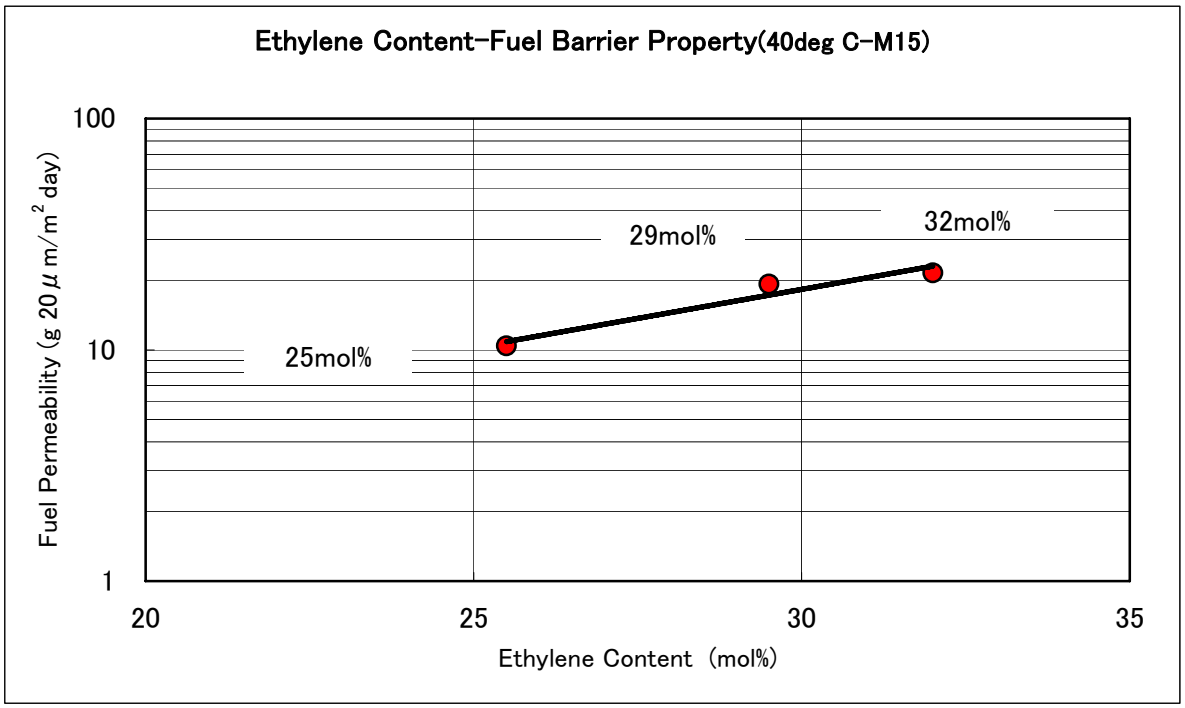
EVOH	Fuel Permeability (g 20μ/m² day)
Soarnol 25mol%	0.081
Soarnol 29mol%	0.201
Soarnol 32mol%	0.302



In case of E10 system consisting of ethanol, low ethylene content "Soarnol®" shows high fuel barrier property.

2) M15 system

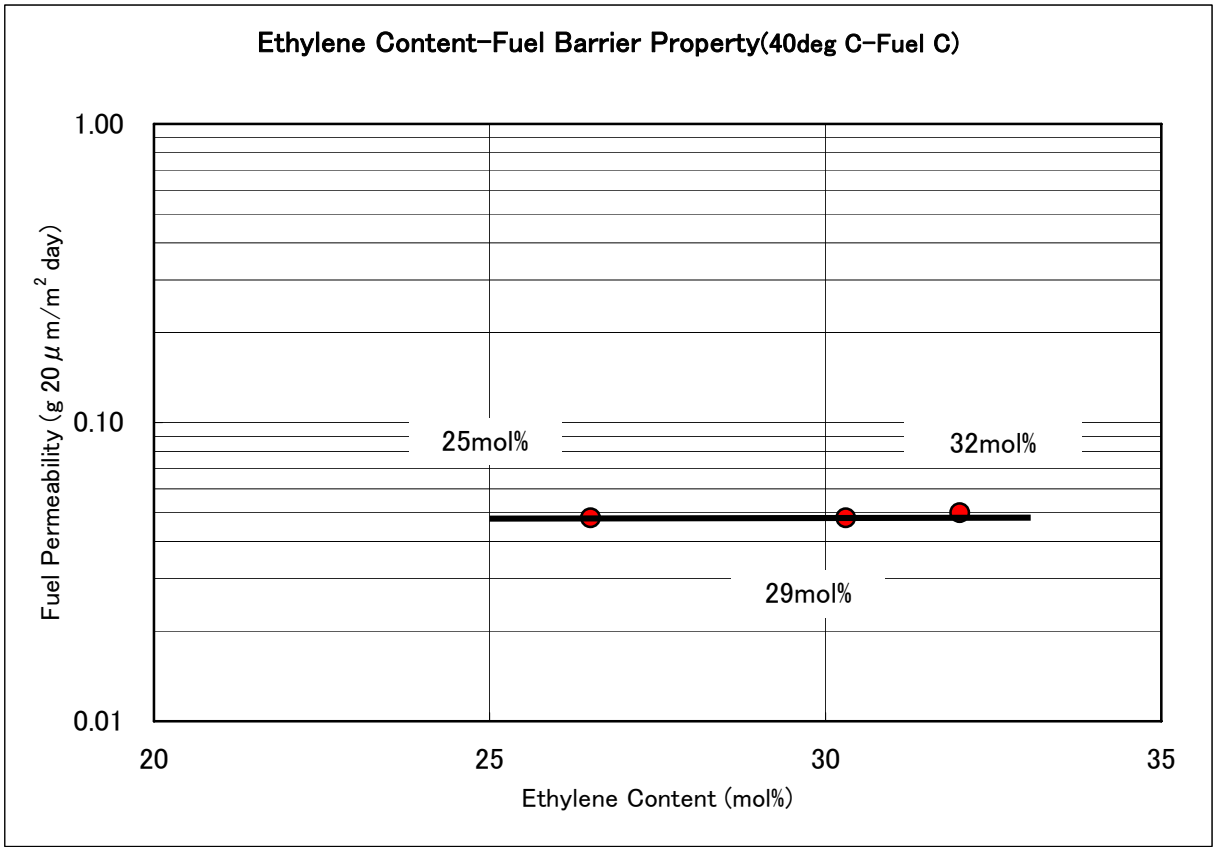
EVOH	Fuel Permeability (g 20 μ m/m² day)
Soarnol 25mol%	10.4
Soarnol 29mol%	17.5
Soarnol 32mol%	21.5



In case of M15 system consisting of methanol, low ethylene content "Soarnol®" shows high fuel barrier property as well as E10 system.
However, its barrier level is lower than that of E10 system.

3) Fuel C system

EVOH	Fuel Permeability (g・20μm/m²・day)
Soarnol 25mol%	0.048
Soarnol 29mol%	0.048
Soarnol 32mol%	0.050



In case of Fuel C system which doesn't contain alcohol, each "Soarnol®" shows high fuel barrier property.
Its barrier level is the best of all three fuel systems.

Data Prepared : 1 Sep. 2003