



The Dreamology Company

— Make your dreams happen —

SIBSTAR™

Thermoplastic Elastomer

Wholly Saturated Styrene-Isobutylene Block Copolymer



- ✓ Good heat aging resistance
- ✓ Excellent gas barrier properties
- ✓ High vibration damping performance
- ✓ Flexibility without liquid plasticizers

April. 2025

- **SIBSTAR®** has an excellent flexibility, gas and water barrier properties and damping property which come from poly isobutylene unit.
- All grades has very low amount of extraction by hot water derived from impurities and additives and are suitable for a steam sterilization and a retort process.

1. Gas barrier compounds for sealant and gasket

Key ingredients for traditional Polyolefin-based compounds

Less plasticizer is needed to design the suitable compounds



2. High performance compounds with some special polymers

Polymeric plasticizer/softener for PC/ABS, TPU, EvOH, COC, etc.

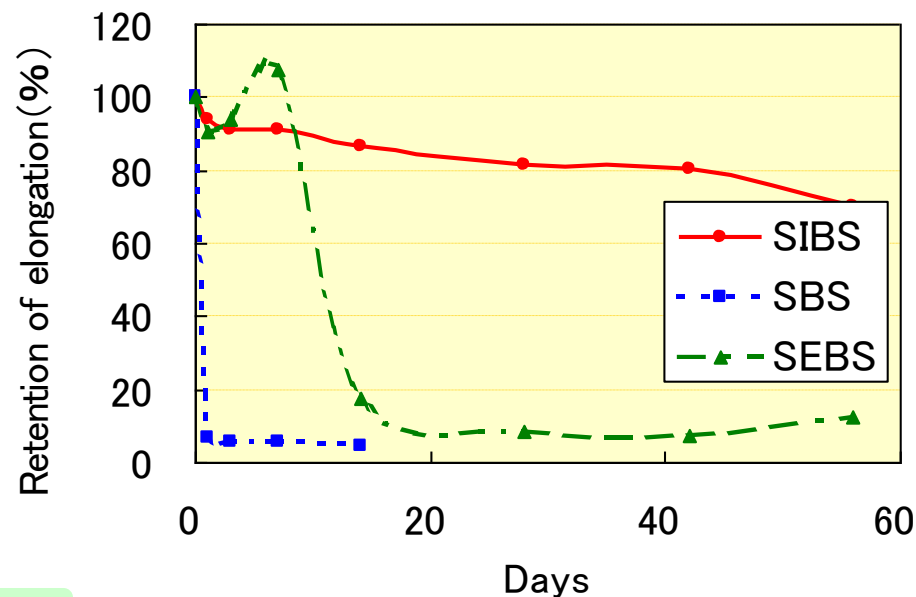
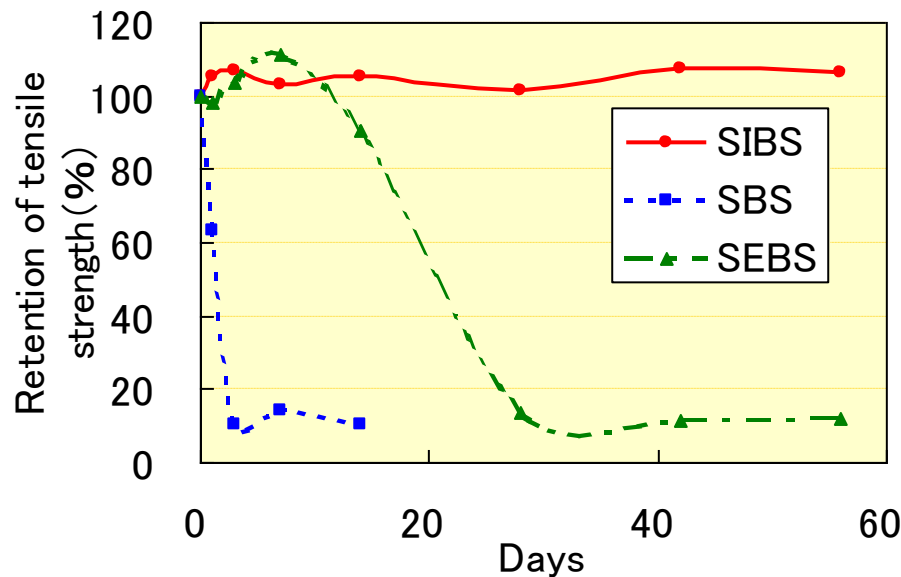
Good balance between clarity and flexibility/elasticity



3. Hotmelt adhesive systems with co-extrusion capability



Test Condition: 150°C

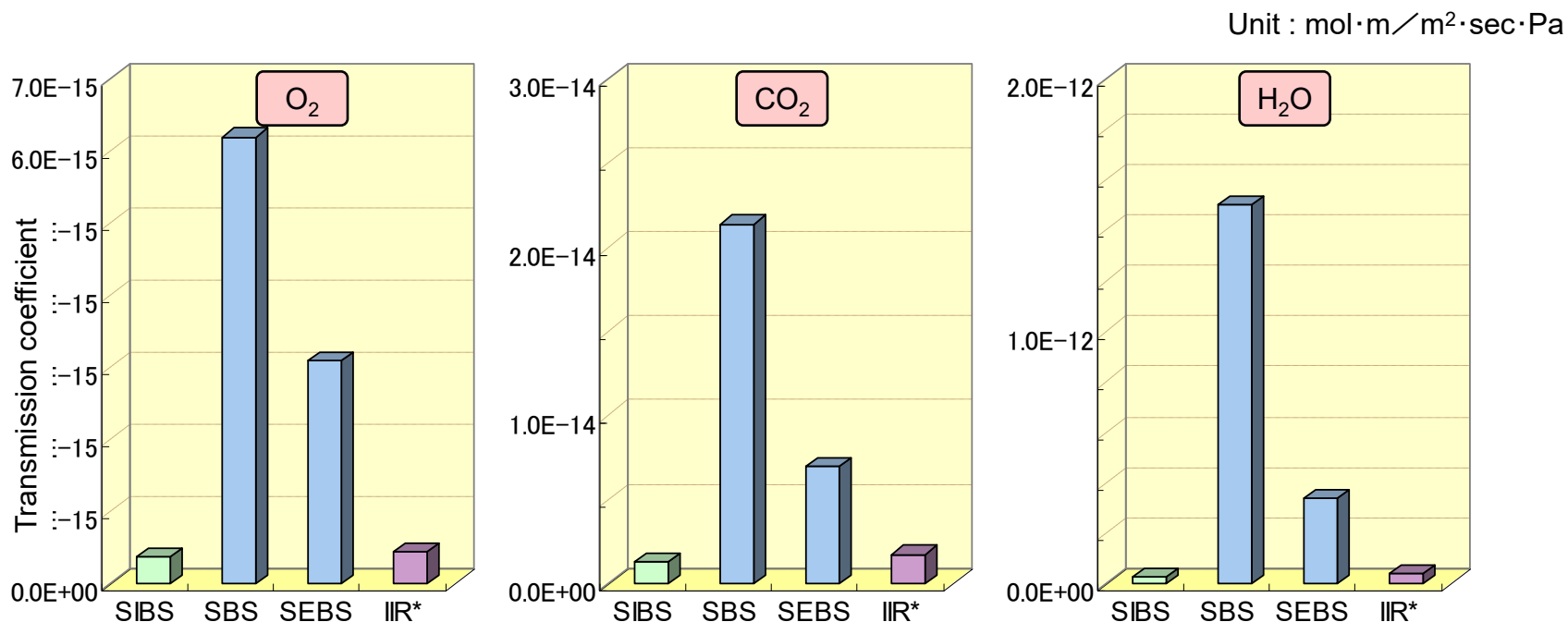


Discoloration after heat exposure

Days	0	7	14	21	28	35
SIBS						
SEBS						
SEPS						

 SIBS shows better retention of tensile strength and elongation.

- SIBS has lower gas permeation characteristics than those of other SBCs.
- SIBS has similar gas permeability to that of Butyl rubber (IIR) and Polyolefine (such as PP, HDPE).



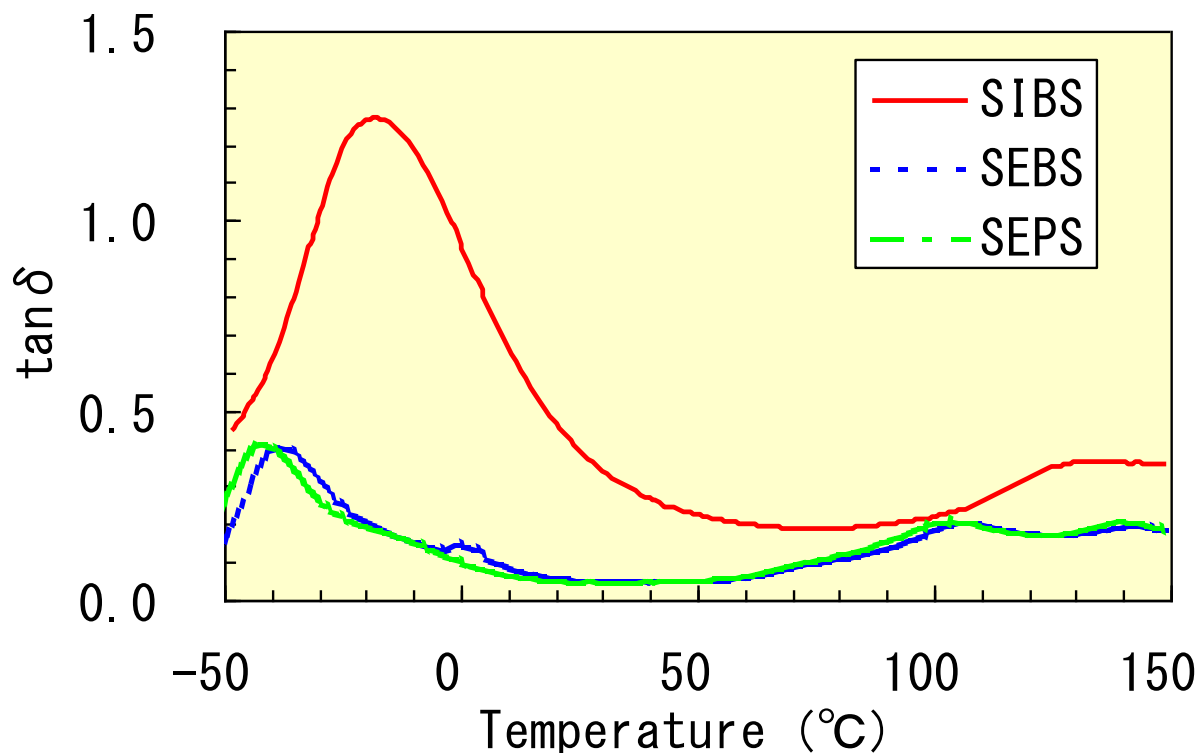
SIBS is 103T. SBS and SEBS are commercially available polymer (M.W.=100000, St content=30%)

Test method (O₂, CO₂) : JISK7126 (Testing method for gas transmission rate)

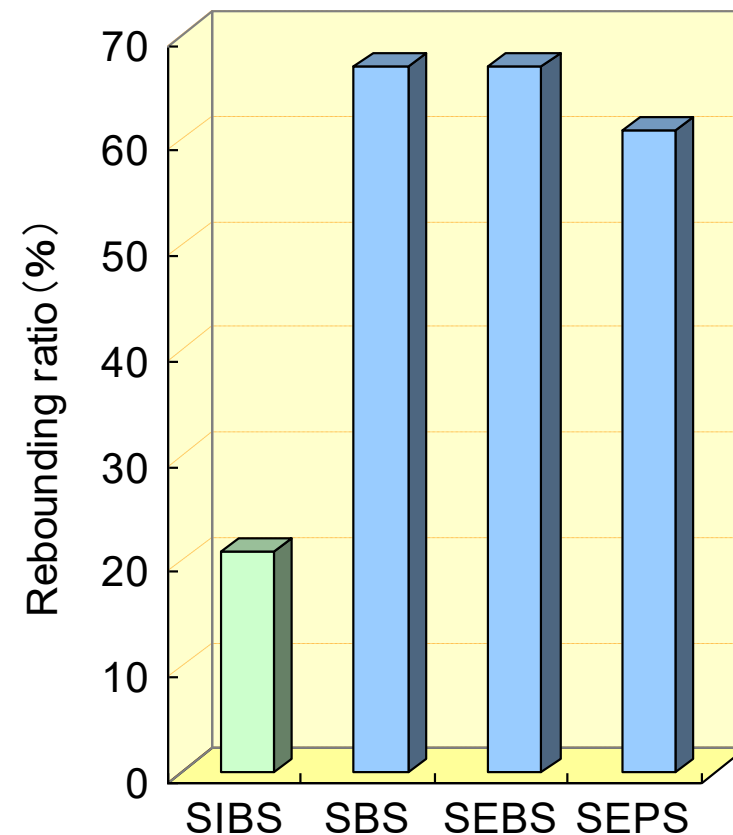
Test method (H₂O) : JISZ0208 (Testing method for water vapor transmission rate of moisture)

* The data of IIR is a book value. (reference : Polymer Handbook 4th Edition)

Temperature profile of $\tan\delta$ (10Hz)

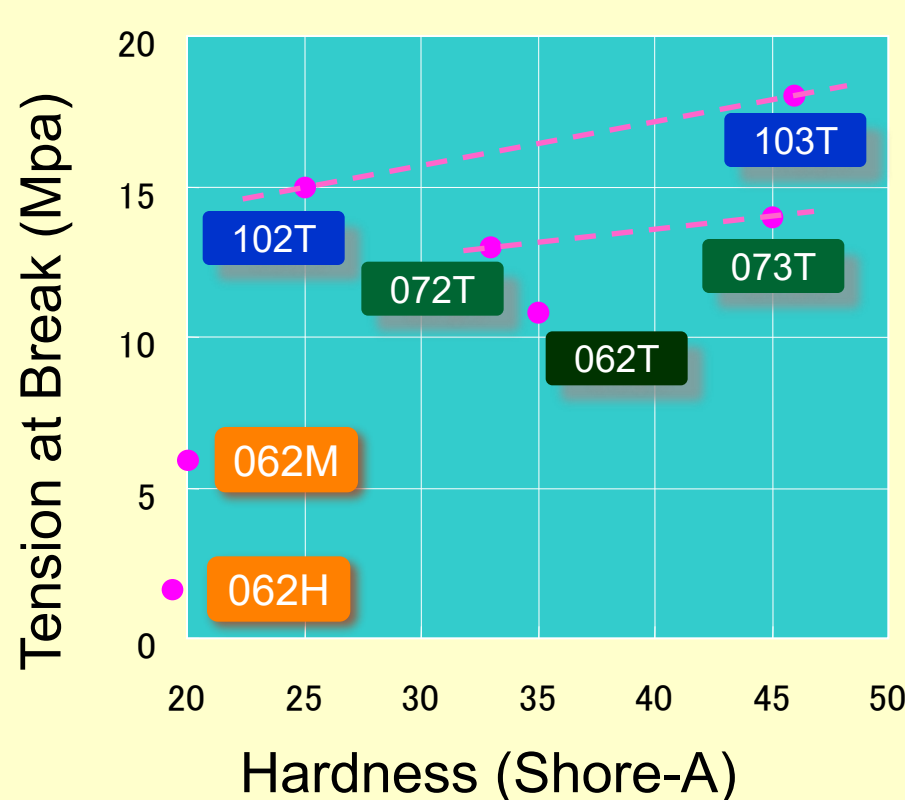
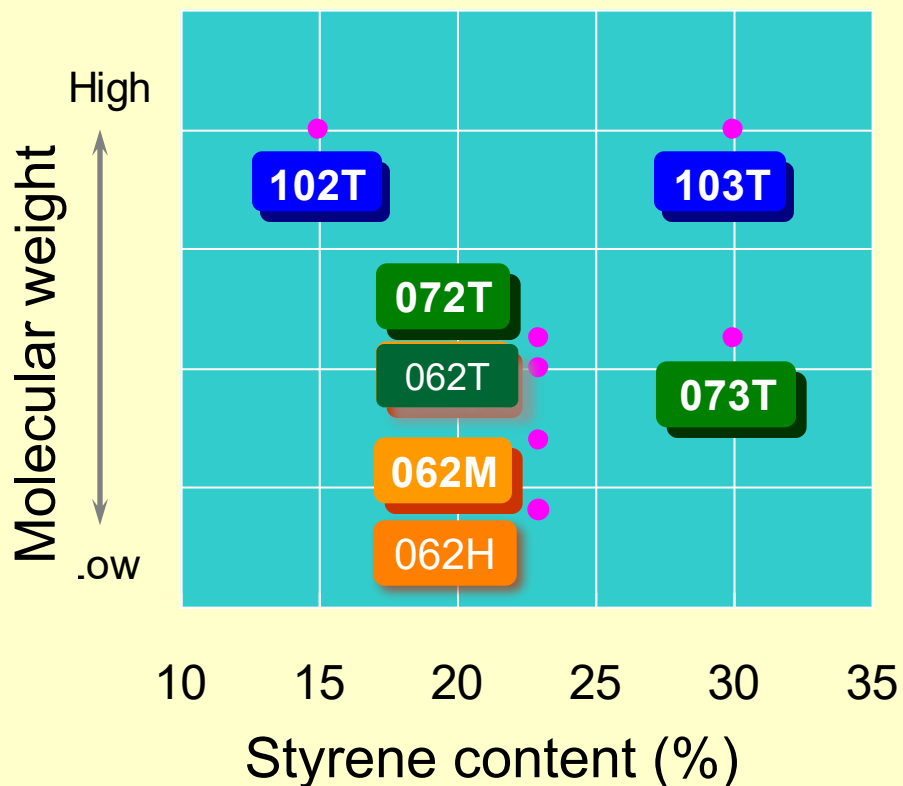


Rebounding ratio(23°C)



Polystyrene Content: Ca. 30wt% Molecular Weight: Ca. 100,000

SIBS shows broader and higher $\tan\delta$ peak, lower rebound properties.



102T, 103T, 072T, 073T, 062T: SIBS
062M, 062H: SIBS/SIB

072T

073T

062T

Tri-block copolymer, high flowability to be molded solely

102T

103T

Tri-block copolymer, high molecular weight to be compounded

062M

062H

Mixed with di-block copolymer, high tackiness and adhesive

Solvent	S.P.	Solubility
n-Hexane	7.3	Soluble
Cyclohexane	8.2	
Toluene	8.8	
THF	9.1	
Chloroform	9.2	
Dichloromethane	9.7	
MEK	9.3	Insoluble
Acetone	9.9	
DMAc	10.8	
DMF	11.9	
Ethanol	12.7	
Methanol	14.5	