INEOS STYROLUTION

STYRENIC SPECIALTIES

STYROFLEX® POWDER GRADE FOR POLYMER MODIFICATION

INEOS STYROLUTION

ENTEC

Driving Success. Together.

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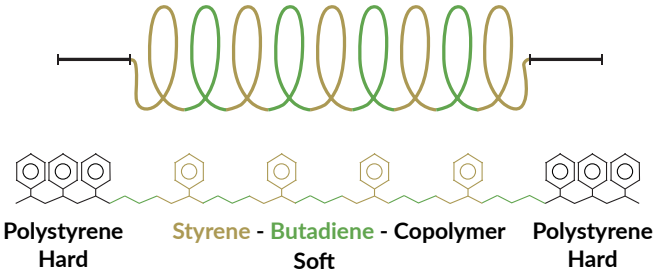
STYROFLEX® STYRENE-BASED THERMOPLASTIC ELASTOMERS (S-TPE)

What's Styroflex® ?

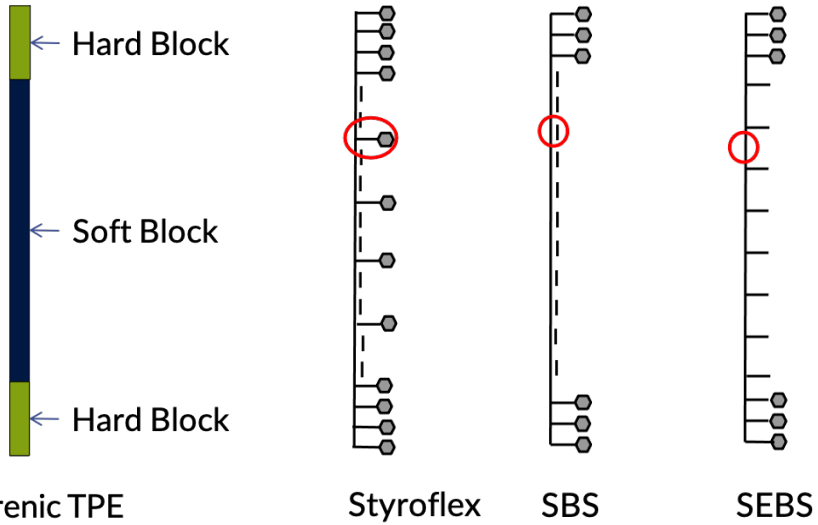
> Thermoplastic Elastomer based on styrene and butadiene with a hard-soft-hard block sequence (TPE-S).

> Continuous soft rubber phase formed by inner block consisting of a randomized poly(styrene-co-butadiene).



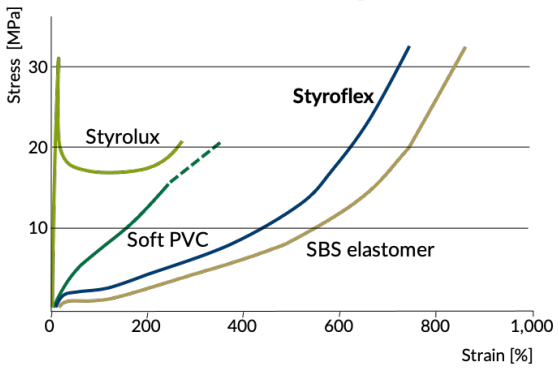
S-TPE Structure Comparison

Styroflex® has a unique molecular structure, that set it apart from all the other S-TPE



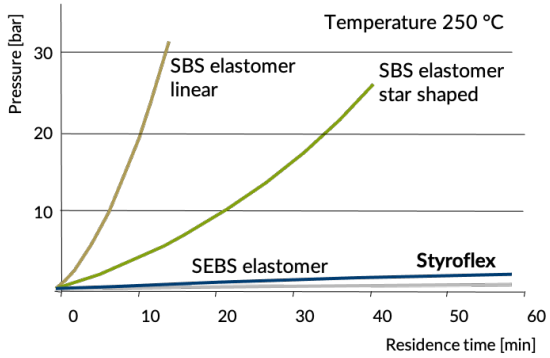
TPE - Thermoplastic Elastomers
SEBS - Styrene-Ethylene/Butylene-Styrene
SBS - Styrene-Butadiene-Styrene

Stress-Strain Diagram



> Rubber-Like Behavior
> High Elongation
> Low Stiffness
> No Yield Point

Thermal Stability



> High Thermal Stability
> Low Gel Formation
> Good Processability

Measurement: increase in pressure needed to extrude a strand at a constant rate.

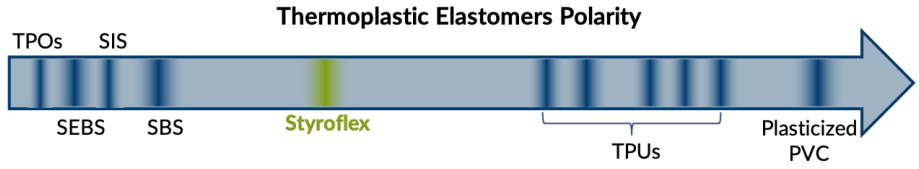
STYROFLEX® POWDER GRADE FOR POLYMER MODIFICATION

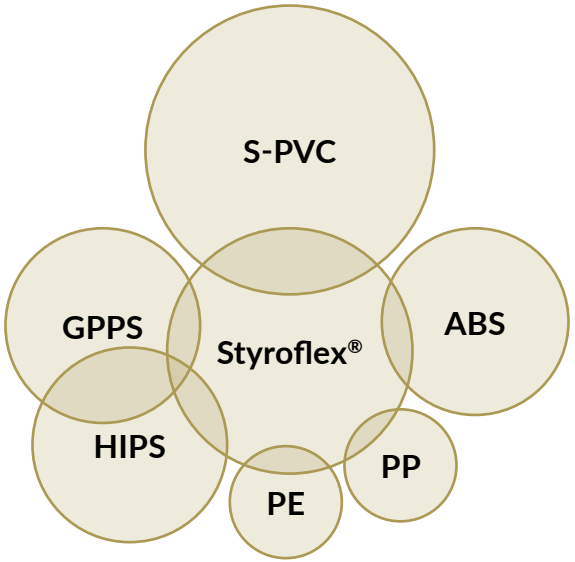
A Modern Construction Kit –
Using synergies by interacting with other polymers

| Exemplary Value Proposition in S-PVC
Modification of Flexible S-PVC

> Density reduction of S-PVC
> Resilience (recovery after deformations)
> Flexibility, enhanced by primary plasticizers
> Low VOC “Volatile organic compounds”, migration (compared to liquid plasticizers)
> High toughness and impact resistance
> Comparable processing temperatures
> Processing aid – good compatibility with S-PVC
> Compatible with fillers, plasticizers, stabilizers etc.
> Color neutral/transparent
> Intermediate polarity improvement:
  > Coextrusion, lamination, gluing and welding
> Detergent resistant (compared to liquid plasticizers)
> Oxygen and vapor permeability (as in S-PVC)

INTERMEDIATE POLARITY MAKES STYROFLEX® COMPATIBLE WITH MANY DIFFERENT POLYMERS





STYROFLEX® PM VA 800
PRODUCT ATTRIBUTES

POLYMER COMPATIBILITY

ABS	Excellent or Very Good
PP	Excellent or Very Good
PE	Excellent or Very Good
PS	Excellent or Very Good
S-PVC	Excellent or Very Good
SBC	Excellent or Very Good
TPE	Excellent or Very Good
TPU	Excellent or Very Good

POLYMER COMPATIBILITY

PSD	800 Micron
Optics	Transparent
Density kg/m^3	1.00
Flow Processing	Excellent
Impact Resilience	Excellent

REGULATORY

Food Contact with EU	Available
Food Contact with FDA	Available
Specification CoA	Available
TDS/SDS	Available
REACH (Registration, Evaluation, Authorization and Restriction of Chemicals)	Available
SVHC (Substance of Very High Concern)	Available
Absence Declaration (EU) 2019/1021	Available

STYROFLEX® PM VA 800
FEATURES, APPLICATIONS & MARKETS

Styroflex® PM VA 800 is more polar than comparable SBS or SEBS grades and offers a combination of high resilience and toughness with good transparency and process stability.

KEY FEATURES

> Excellent Thermostability
> Compatibility to Polyolefins
> Very High Elongation at Break
> High Resilience
> High Transparency
> High Flow
> Particle Size < 800 µm (powder)

APPLICATIONS

> Impact Modification/ESCR Improvement
> Compounding, Compatibilization and Recycling

MARKETS

> Wire & Cable
> Liners
> Flooring Mats
> Garden Hoses
> Rainwear And Boots
> Medical Tubing
> Automotive Interior Trim
> Plumbing
> Electrical Cable Insulation
> Inflatable Products
> Imitation Leather
> Signage