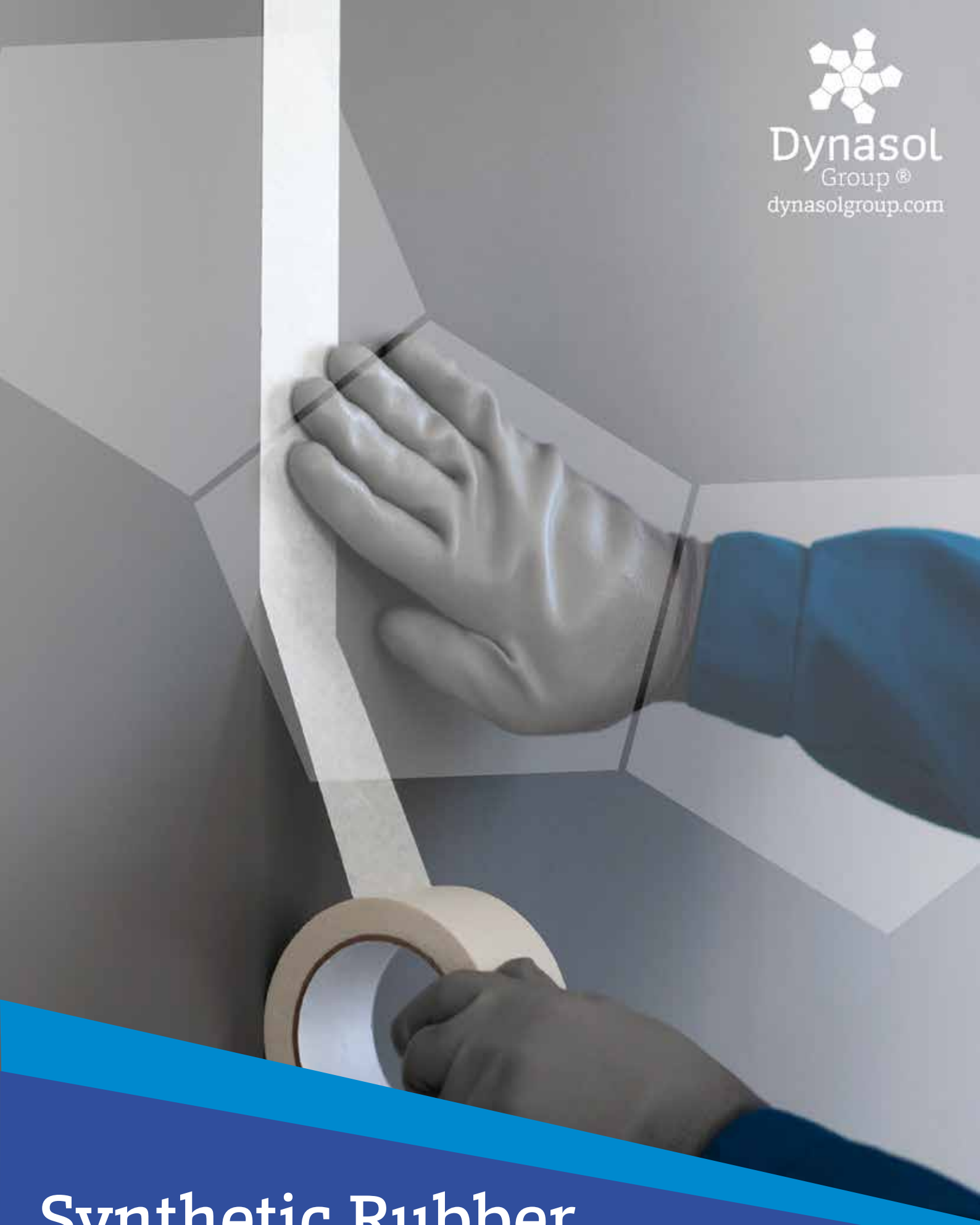


Dynasol Group ®
dynasolgroup.com

Synthetic Rubber

For Adhesives and Sealants


MAY CAUSE DROWSINESS
ALCOHOL MAY
USE CARE

Dynasol Group

Dynasol Products For Adhesives and Sealants

Dynasol Group has more than 55 years of experience as a supplier of polymers to the Adhesives & Sealants industry.

We are a global supplier with a wide portfolio of SBS, SEBS, SSBR, HSBR, and NBR products that are used in applications such as hot melts and solvent borne formulas for building and construction, PSA, non-PSA packaging, specialty labels, automotive sealants and FDA grade food packaging sealants.

Our expertise has positioned Dynasol Group as one of the primary global suppliers of high purity FDA compliant grades of SBS, SEBS and HSBR products.

These products are produced to meet stringent requirements for purity and sensory factors, including odor and taste performance and are 100% compliant with all REACH requirements with zero levels Nonylphenol-type residuals. The emphasis on purity and quality assures a high standard of performance with clear benefits for all applications with exposure to consumer level users.

Our manufacturing plants and Technical centers are located strategically in China, Europe and North America to supply and support our clients worldwide.

It is our commitment to continue to develop new and improved innovative products designed to enhance the value and performance of our customer's products.

Commited to creating value for a sustainable future

At Dynasol Group, sustainability is one of the drivers for new products and applications demanded by the adhesives and sealants market; with an expert R&D department we promote and aim to be technologically innovative in the development of styrene-butadiene polymers. The global presence of Dynasol Group allows us to be aware of the importance of being in tune with the ever-changing regulations around the world.

Dynasol Group's global footprint includes two laboratories: one in Mexico and one in Spain, especialized in adhesives and sealants, with technical staff dedicated to the development of new applications and to provide assistance to adhesive formulators in a quick and timely manner.

Our group developed a new SEBS of lower molecular weight and low styrene content, Calprene®H6180X and Calprene®H6182X, which provide excellent processability at low temperatures and contribute to lower energy consumption during the formulation process. These new grades have excellent performance in medical applications such as tapes and bandages due to its excellent track and low adhesion, resulting in good attachment to the skin without adhesive residuals or damage upon removal. In addition, they are compatible with polar substrates, that allow to develop tapes with good transpiration. During this period, we launched the new SEBS Calprene®H6215X with excellent heat and environmental resistance that help develop solvent-based translucent sealers free of volatile organic compounds for the construction segment.

The products manufactured in all our sites are listed without ban in many of the chemical inventories in North and Latin America, Europe, Asia and Oceania, and comply with European and Chinese regulations for food contact, FDA standards for food contact materials, do not contain any substance included in the REACH SVHC candidate list or AnnexXVII.

carbon neutral by 2050

ISO All Dynasol Group sites are ISO 4500 Certified

Hygiene

Hygiene is a special segment that demands high-quality adhesives for diaper assembly, elastic attachment and position fem care.

At Dynasol Group we are defined by the culture of service and the constant search for innovation, therefore, we have developed an excellent portfolio of styrene-butadiene copolymers with a capability of adapting, meeting market trends and customer needs.

Adhesive Performance

A. Elastic Recover
B. High Adhesive-Cohesive Strength
C. Excellent adhesion to low surface energy
D. Wide Temperature resistance
E. Low viscosity
F. Capable of being applied at low temperature
G. Regulations compliance for skin contact
H. Clear color, low odor

**Compare each element in the chart below*

Dynasol recommended grades for the Hygiene Segment

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Calprene 743	Linear SBS	43	360[1]	23[2]	◔	●	●	●	●	●	●	●
Calprene 540	Linear SBS	40	600[1]	5.5[3]	◒	◔	◔	◔	◒	◒	●	●

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Dyne154B	Linear SBS/SB	40	310[1]	60[3]	◒	●	●	◒	●	●	●	●
Calprene H6105X	Linear SEBS	30	---	26[4]	◔	◔	◔	●	◔	◔	●	●

Performance Scale

● Excellent ◔ Good ◒ Regular

Condition Test

1- 25% @ 25°C // 2- 30% @ 25°C // 3- 20% @ 25°C // 4- 200°C/5Kg

Tapes

Tapes is an extensive segment that covers a variety of applications ranging from medical, office, industrial, and automotive practices; Dynasol polymers are able to meet a series of performance requirements and regulations to ensure good execution in end markets.

Our portfolio includes grades that offer flexibility for adhesive formulations, covering a wide range of performance due to their unique combination of adhesive and cohesive strength under a large temperature scale. In addition, it complies with FDA and European regulations for contact with skin and food.

Adhesive Performance

A. Initial tack Permanent
B. Holding power
C. No residue on substrate
D. Regulations compliance for skin contact
E. Repositionable
F. Clear or translucent color
G. Mandrel hold
H. Reduce volatile organic compound (VOC) emission
I. Wide service temperature range

**Compare each element in the chart below*

Dynasol recommended grades for Tapes

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H	I
Emulprene 1011	HSBR	23.5	3000-4000[1]	---	●	◒	◒	---	◒	◒	●	◒	◒
Emulprene 1012	HSBR	23.5	150-300[2]	---	●	◒	●	---	◔	◒	●	◒	◒
Emulprene 1013	HSBR	43.5	550-750[3]	---	●	◒	●	---	◒	◒	●	◒	◔
Emulprene 1009H	Partially Cross-linked HSBR	23.5	50[4]	---	◔	●	●	---	◒	◒	●	◒	◒

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H	I
Calprene H6180X	Linear SEBS	15	---	9[7]	●	◒	◔	●	◒	●	●	●	●
Calprene H6182X	Linear SEBS	15	---	24[7]	●	●	◒	●	●	●	●	●	◒
Solprene 1205/1217	Linear SBR	25	4000[5]	---	●	◔	---	●	●	●	●	●	◒
Solprene 411	Radial SBS	30	20000[6]	---	◔	◒	◒	●	◔	●	●	●	◒
Solprene 416	Radial SBS	30	2200[6]	---	●	●	◒	●	◒	◒	●	◒	◒

Performance Scale

● Excellent ◔ Good ◒ Regular

Condition Test

1- 15% @ 25°C // 2- 5% @ 25°C // 3- 10% @ 25°C // 4- 3.68% @ 25°C // 5- 30% @ 25°C // 6- 25% @ 25°C // 7- 230°C/2.16Kg

Labels

Labels require a great deal of versatility in pressure sensitive adhesives (PSAs) in order to satisfy the broad range of properties required for various products.

At Dynasol Group we are committed to support the dynamism demanded by the market by constantly developing solutions with excellent performance that makes them suitable to serve diffrent labeling applications.

Adhesive Performance

A. Initial tack
B. Clear or translucent color
C. UV, temperature and environmental resistance
D. Removable or repositionable
E. Ultimate adhesion
F. Meet FDA requirements
G. Mandel hold
H. Tack at cold or freezing temperature
I. Wide service temperature range

**Compare each element in the chart below*

Dynasol recommended grades for Labels

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H	I
Solprene 1205/1217	Linear SBR	25	4000[1]	---	●	●	◒	◒	◔	●	●	●	◒
Solprene 4320X	Linear SBS/SB	23	1000[2]	15[4]	●	●	◒	◒	◔	●	●	●	◒
Solprene 4318	Linear SBS/SB	32	700[2]	5[4]	●	●	◒	◒	◔	●	●	●	◒
Calprene H6215X	Linear SEBS/SEB	13	1500[1]	12[6]	●	●	●	◔	◔	●	●	◒	◔

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H	I
Calprene H6110	Linear SEBS	32	470[3]	<1[5]	◔	●	●	◒	◔	●	●	◒	◔
Calprene H6120	Linear SEBS	30	1900[3]	1[5]	◒	●	●	◒	●	●	●	◒	●
Calprene H6180X	Linear SEBS	15	---	9[6]	●	●	●	●	◒	●	●	◒	◒
Calprene H6182X	Linear SEBS	15	---	24[6]	●	●	●	●	◒	●	●	◒	◒

Performance Scale

● Excellent ◔ Good ◒ Regular

Condition Test

1- 30% @ 25°C // 2- 25% @ 25°C // 3- 20% @ 25°C // 4- 190°C/5Kg // 5- 230°C/2.16Kg // 6- 200°C/5Kg

Packaging

The packaging segment requires adhesives with specific characteristics that satisfy wide temperature thermal stability, flexibility, durability, and meets normativity for food contact application.

Among our SBS grades there are properties that are used extensively in adhesive formulation, achieving high performance, and complying with regulations in packaging applications.

Adhesive Performance

A. Flexible properties
B. Temperature viscosity relationship
C. Wide service temperature range
D. Meet FDA regulations
E. Reduce volatile organic compound (VOC) emission
F. Holding power
G. Initial tack, resealable

**Compare each element in the chart below*

Dynasol recommended grades for Packaging

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G
Solprene 4318	Linear SBS/SB	32	700[1]	5[3]	●	◔	◒	●	●	◒	●
Solprene 4320X	Linear SBS/SB	23	1000[1]	15[3]	●	◔	◒	●	●	◒	●
Calprene 540	Linear SBS	40	600[1]	5.5[3]	●	◔	◒	●	●	●	◒
Solprene 416	Radial SBS	30	2200[1]	---	●	◒	●	●	●	●	◒

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G
Solprene 1205/1217	Linear SBS	25	4000[2]	---	●	◒	◒	●	●	◒	●

Performance Scale

● Excellent ◔ Good ◒ Regular

Condition Test

1- 25% @ 25°C // 2- 30% @ 25°C // 3- 190°C/5Kg

Building & Construction

The building and construction market uses adhesives for many structural and decorative applications such as floors, subfloors, walls, ceilings and windows for both residential housing and commercial buildings, as well as infrastructure construction.

Our drive to be a provider of differentiated solutions has led us to create a wide variety of products that will enable our customers to meet requirements like high cohesive strength, low viscosity, excellent adhesion to polyolefins, vinyl, and other low energy films, clarity, UV and environmental resistance to comply with regulatory trends including the capacity of adhesive formulations with low VOC.

Adhesive Performance

A. Holding power
B. UV, temperature and environmental resistance
C. Wide service temperature range
D. Indoor / Outdoor usage
E. Low shrinkage
F. Good extrudability
G. Flexible
H. Initial tack permanent

**Compare each element in the chart below*

Dynasol recommended grades for Building & Construction

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Calprene H6110	Linear SEBS	32	470[1]	<1[5]	◒	●	◔	●	◒	◔	●	●
Calprene H6120	Linear SEBS	30	1900[1]	1[5]	●	●	◒	●	◒	◒	●	◒
Calprene H6215X	Linear SEBS/SEB	13	1500[1]	12[5]	◒	●	●	●	◒	◒	●	◒
Emulprene 1013	HSBR	43.5	500-600[2]	---	◒	◒	◒	◒	◔	◔	●	●
Emulprene 1009L	Partially Cross-linked HSBR	23.5	120-400[3]	---	◒	◒	◒	◒	●	●	●	●
Emulprene 10003	HSBR	28	10-400[3]	---	◒	◒	◒	◒	●	●	●	●

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Calprene 500	Linear SBS	31	5000[4]	5[6]	●	◒	◔	◒	◒	◒	●	◒
Calprene 501	Linear SBS	30	1100[4]	---	◔	◒	◔	◒	◒	◔	●	◔
Calprene 540	Linear SBS	40	600[4]	5.5[6]	●	◒	●	◒	◒	●	●	◔
Solprene 4301	Linear SBS/SB	33	3000[4]	---	◔	◒	◒	◒	◒	◒	●	◔

Performance Scale

● Excellent ◔ Good ◒ Regular

Condition Test

1- 20% @ 25°C // 2- 10% @ 25°C // 3- 3.68% @ 25°C // 4- 25% @ 25°C // 5- 230°C/2.16Kg // 6- 200°C/5Kg

NBR Copolymers for Building and Construction

Brand Grade	Description	Applications	ACN Content %	Mooney Viscocity, MU
Paracril B	Copolymer of butadiene and acrylonitrile, hot polymerized. Good low temperature flexibility and oil resistance	• Bond vinyl & other elastomers. • Fabrics where good wear, oil and water resistance are important. • Bonding vulcanized and unvulcanized rubbers. • Construction Sealants.	29.5	85
Paracril BJ			29.5	50
Paracril C Paracril CV80* *Ground form dusted with PVC	Copolymer of butadiene and acrylonitrile, hot polymerized. Good resistance to fuels and mineral oils. Very good abrasion resistance.		35	80
Paracril CLM	Copolymer of butadiene and acrylonitrile, hot polymerized.		35	68

Furniture & Mattress

Adhesives used in the furniture and mattress segment offer the ability to join different substrates, contributing to the reduction of mechanical joints and provide durability to the final product.

Our high performance polymers provide special features that assembly adhesives generally require: higher shearstrength, creep resistance, show good wetting and adhesion forces for strength.

Adhesive Performance

A. High mechanical & cohesion properties
B. Temperature & water resistance
C. Excellent wetting
D. Be able to bond latex, elastic & flexible
E. Clear color & good color stability
F. Excellent durability
G. Chemical & grease resistance
H. Be able to bond latex or gel foams

**Compare each element in the chart below*

Dynasol recommended grades for the Furniture & Mattress

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Solprene 416	Radial SBS	30	2200[1]	---	◔	◔	◔	●	◔	●	◒	●
Solprene 411	Radial SBS	30	20000[1]	---	●	●	◒	●	◔	●	◒	●
Solprene 1205/1217	Linear SBR	25	4000[2]	---	◒	◒	●	◔	◒	◔	◒	●

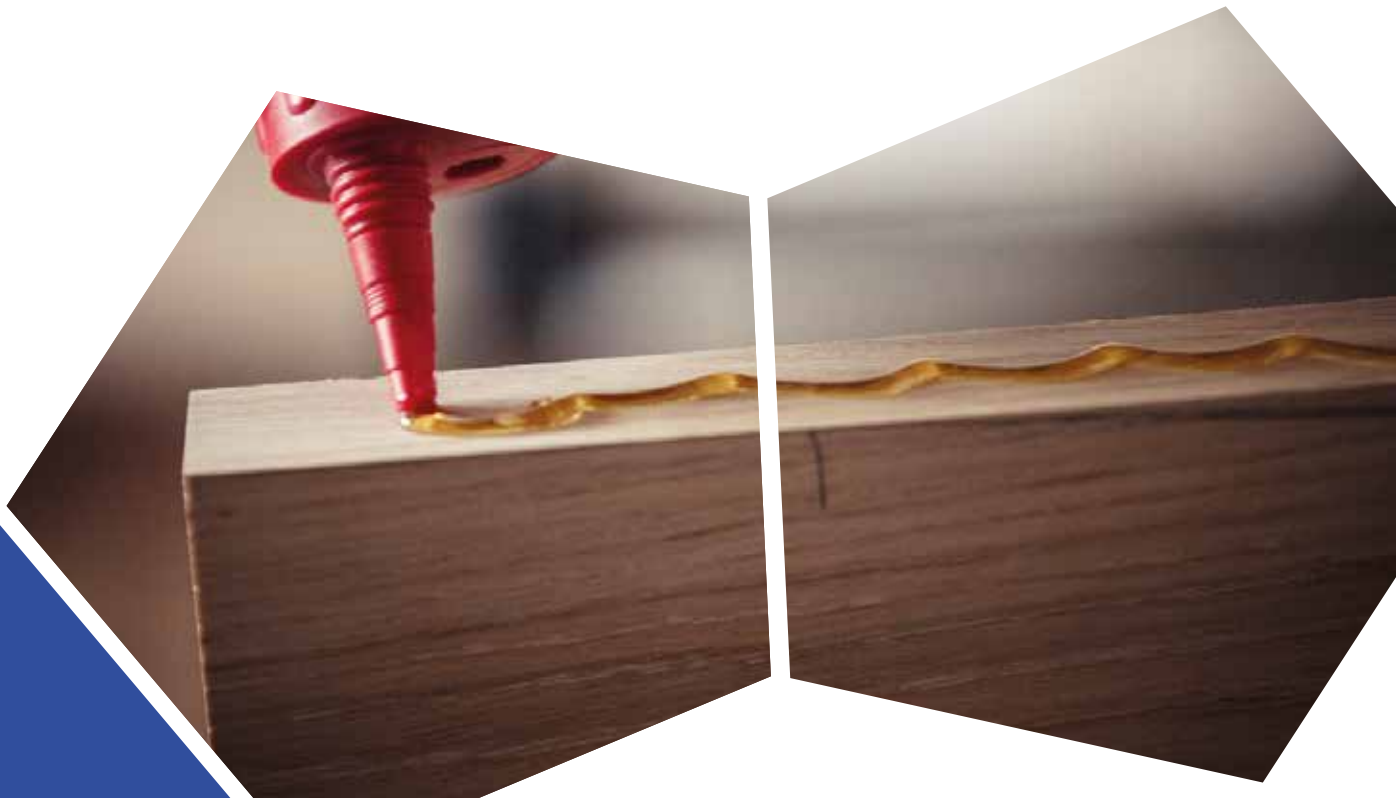
Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Calprene 500	Linear SBS	31	5000[1]	5[3]	◔	●	◔	●	◔	●	◒	●

Performance Scale

● Excellent ◔ Good ◒ Regular

Condition Test

1- 25% @ 25°C // 2- 30% @ 25°C // 3- 190°C/5Kg



Automotive

The automotive industry is constantly evolving, where one of the main trends is to reduce the weight of the vehicle, for which the use of adhesives and sealants has a strategic advantage over mechanical joints such as welding or screws, having a wide application from sensor bonding to chassis construction.

Our given expertise has allowed us to provide products that drive automotive adhesives and sealants to meet strict technical requirements such as: absorbing vibration, high temperature resistance, and bonding materials with low surface force.

Adhesive Performance

A. High temperature resistance
B. Absorb vibration and impact forces
C. Acoustical absorption and isolation
D. Joint metal with plastic products
E. Electrical insulator
F. Flexibility
G. Holding Power
H. Good adhesion to a variety of substrates (leather, paper, Non-Woven, plastics)

**Compare each element in the chart below*

Dynasol recommended grades for the Automotive Industry

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Emulprene 10003	HSBR	28	110-400[1]	---	◒	●	●	◔	●	◔	◒	---
Emulprene 1009L	Partially Cross-linked HSBR	23.5	120-400[1]	---	◒	◔	●	◔	●	◒	◒	---
C-5375X	Hybrid Copolymer	38	310[2]	---	●	●	●	◔	●	●	●	◔

Brand Grade	Structure	Styrene Content %	TSV, cP	MFI, g/10min	A	B	C	D	E	F	G	H
Solprene 416	Radial SBS	30	2200[2]	---	◔	●	●	◔	●	●	◔	●
Solprene 411	Radial SBS	30	20000[2]	---	●	●	●	◔	●	●	●	●
Solprene 1205/1217	Linear SBR	25	4000[3]	---	◒	●	●	◒	●	●	◒	●
Calprene 500	Linear SBS	31	5000[2]	5[4]	◔	●	●	◔	●	●	◔	●

Performance Scale

● Excellent ◔ Good ◒ Regular

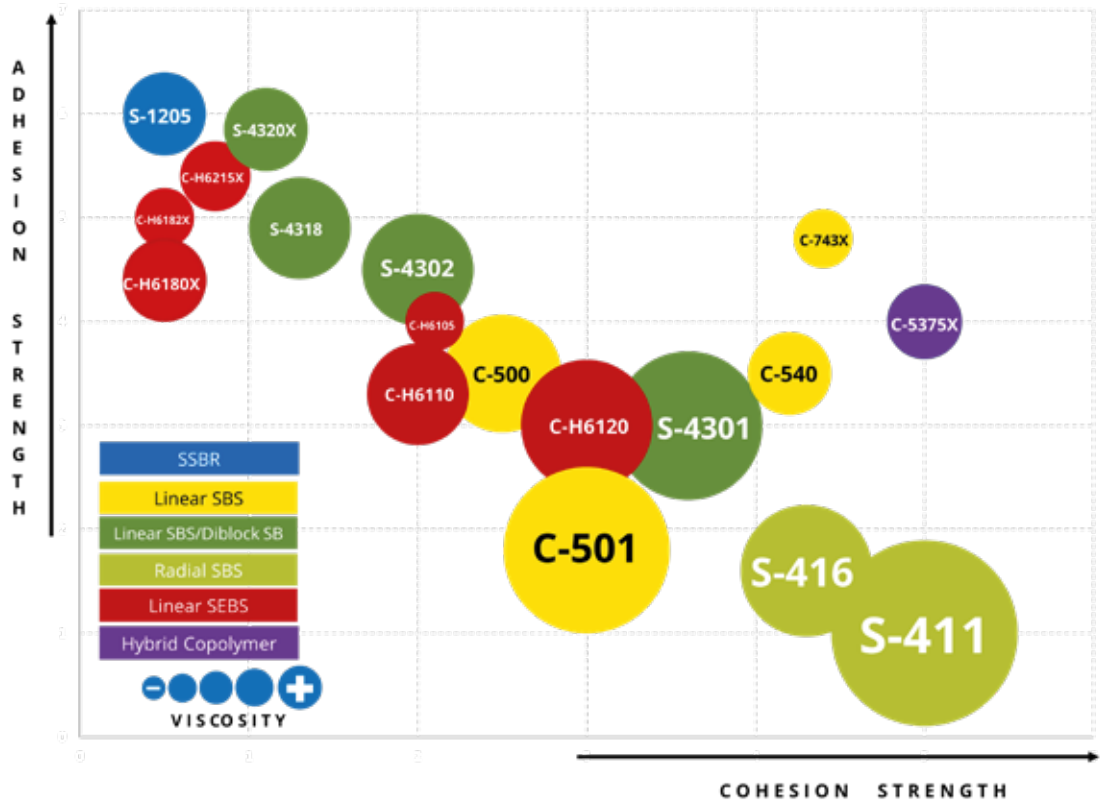
Condition Test

1- 3.68% @ 25°C // 2- 25% @ 25°C // 3- 30% @ 25°C // 4- 190°C/5Kg

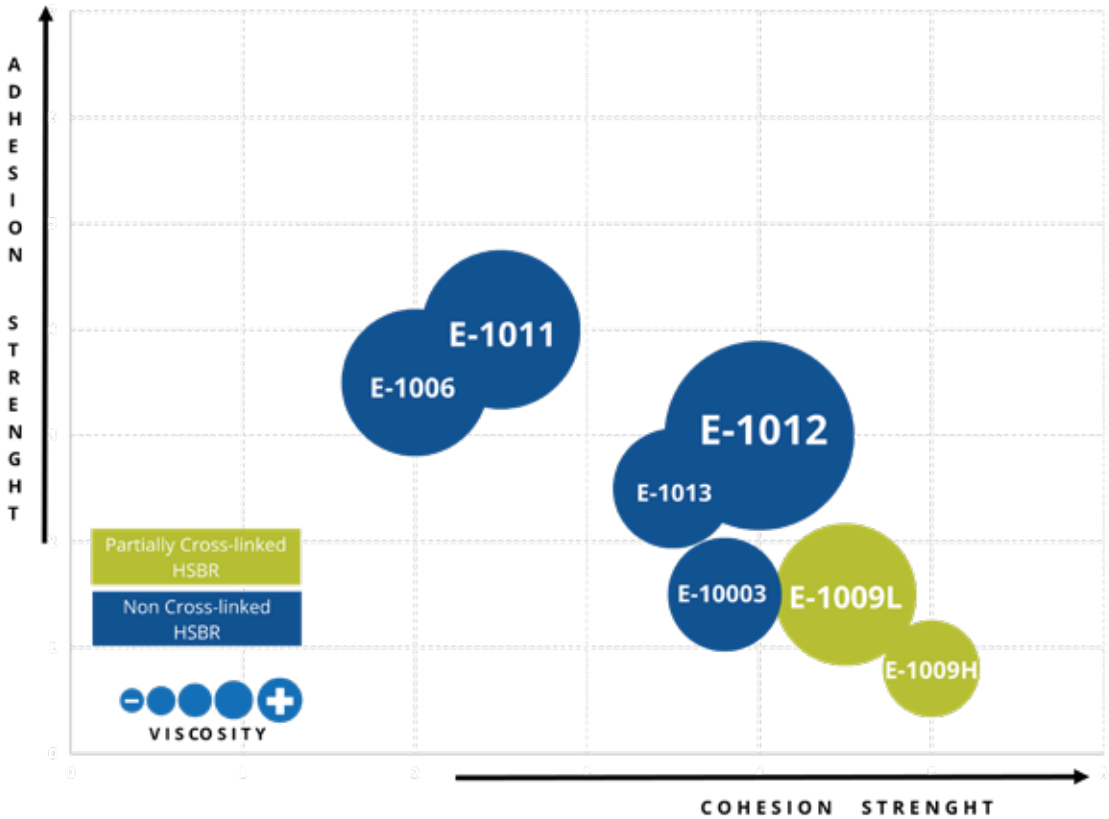
NBR Copolymers for the Automotive Industry

Brand Grade	Description	Applications	ACN Content %	Mooney Viscocity, MU
Paracril C80* *Ground form dusted with Talc	Copolymer of butadiene and acrylonitrile, hot polymerized. Good resistance to fuels and mineral oils. Very good abrasion resistance.	• Automotive Sealant.	35	80
Paracril CV* *Ground form dusted with PVC	Copolymer of butadiene and acrylonitrile, hot polymerized.		35	68

Solution Technology Products



Emulsion Technology Products



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