

# SBC PRESSURE SENSITIVE ADHESIVES (PSAs)

## Description

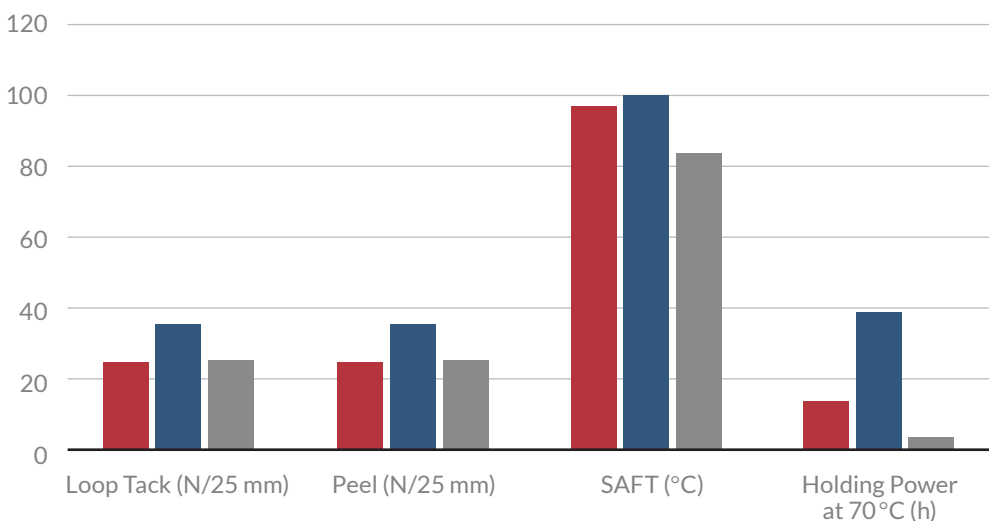
Styrene block copolymer (SBC) based pressure sensitive adhesives have well-defined block structures called aliphatic mid blocks and styrene end blocks. Hydrogenated NOVARES *pure*<sup>®</sup> resins are compatible with aliphatic blocks. Depending on the resin's softening point, the glass transition temperature ( $T_g$ ) of an aliphatic block in an SBC formulation can be shifted to a specific temperature. Tack, peel and wetting properties can be optimized with respect to the desired end uses such as labels, tapes and diapers.

A fully hydrogenated resin does not impact the phase separation in an SBC formulation, which leads to stable heat resistance and holding power of adhesives, e.g., in styrene-isoprene-styrene (SIS). Following the same mechanism, non-hydrogenated aromatic resins are compatible with styrene end blocks and result in the reinforcement of these blocks. The increase of the  $T_g$  of styrene blocks leads to significantly higher shear adhesion failure test (SAFT) temperature and holding power of the adhesives. The combination of hydrogenated and non-hydrogenated NOVARES resins provides great opportunities for the optimization of PSA formulations.



## Results

Application properties of an SIS adhesive



Application properties of an SIS adhesive using:

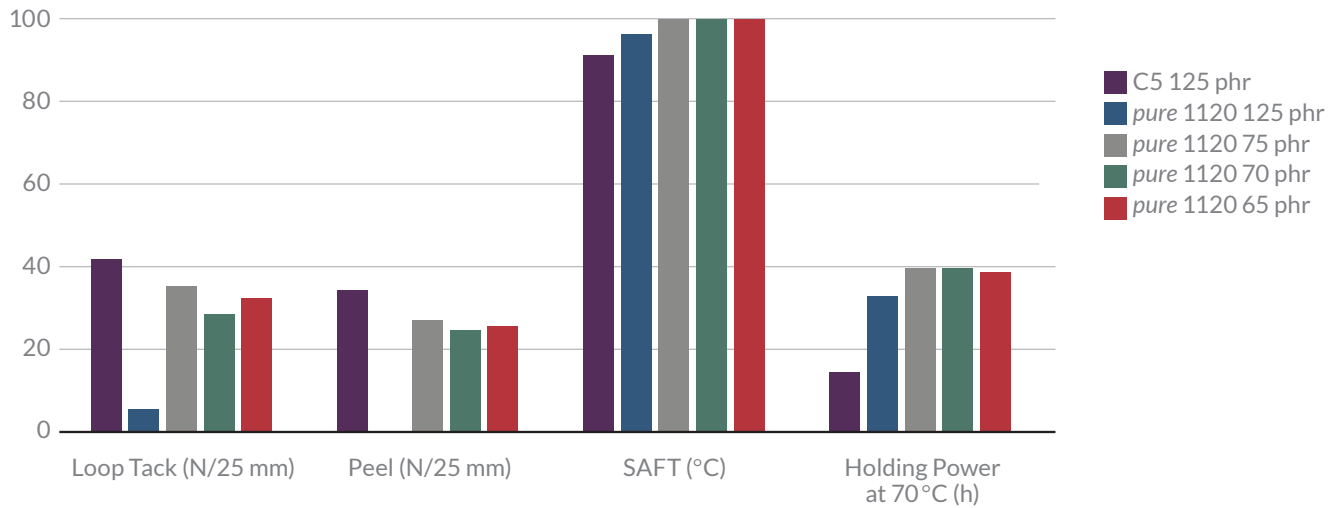
- non-hydrogenated C5 resom
- NOVARES *pure* 1120
- hydrogenated DCPD resin

All resins have a softening point of 100 °C.

- C5
- *pure* 1120
- Hydrogenated Reference

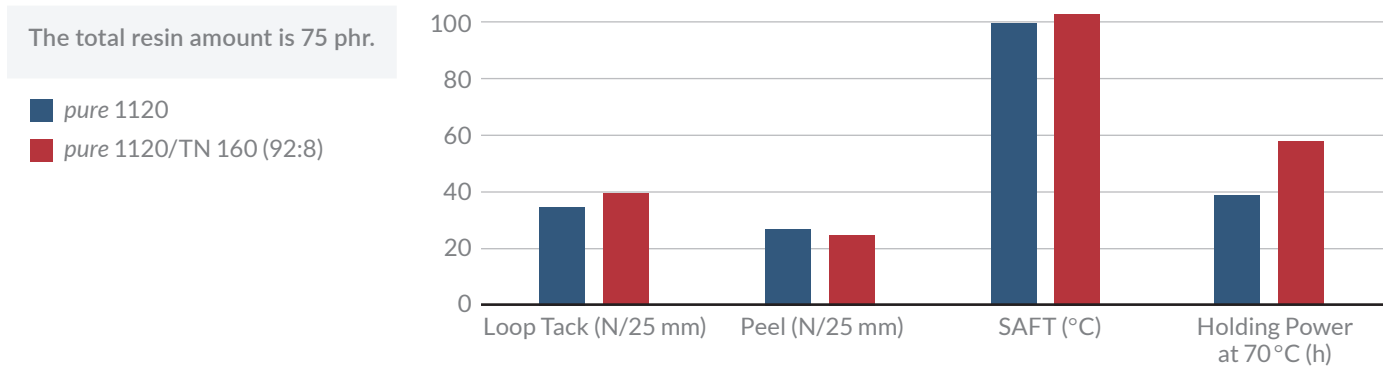
Colorless and odorless NOVARES *pure* 1120 shows a comparable performance to the C5 reference resin. Compared to the hydrogenated reference resin, the outstanding heat stability of NOVARES *pure* 1120 is proven by high values of the SAFT temperature and holding power.

Effect of the dosage of NOVARES pure 1120 in SIS formulation



The heat resistance of PSAs can be improved with high softening point hydrogenated resins such as NOVARES pure 1120. With respect to the Tg of the formulation, the dosage is essential and must be adapted to the optimal level and specific need. With the usage of high softening point resins, the dosage can be reduced without compromising the properties.

Combination of a hydrogenated resin and a C9 resin to achieve high heat resistance and holding power



NOVARES Resins for Pressure Sensitive Adhesives

Adhesive	Recommended NOVARES Resins
SIS	pure 1120, pure 2100, pure 2120, TN 150, TN 160, TN 160, NT 170, C 160
SBS	pure 1120, pure 2100, pure 2120, TN 100, TN 100, TN 150, NT 160, T



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