

SOLUTION DATA SHEET

## Discover Pearlstick™ TPU — An Alternative To Chloroprene in the Footwear and D-I-Y Industries



<b>Markets</b>	Footwear and DIY
<b>Polymer</b>	Pearlstick™ thermoplastic polyurethane (TPU)
<b>Key Benefits</b>	<ul style="list-style-type: none"> <li>• Improves adhesion to various substrates</li> <li>• Contact bonding at room temperature</li> <li>• Very long open time</li> </ul>

Lubrizon offers an amazingly broad TPU offering to the adhesives industry. Pearlstick TPUs are a wide range of mainly crystalline polymers used in the manufacture of solvent-based adhesives for the automotive, furniture and footwear markets. These polymers have an interesting feature: a low melting point

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in their crystalline zones (50-60°C), which permits the polymer to be softened or melted at relatively low temperatures for the adhesion process, with sufficient thermoplasticity and surface tack to ensure correct union between substrates of varied materials.

Polychloroprene is a versatile synthetic rubber usually used to make contact adhesives. Supplies of such a material are being significantly reduced with some grades of polychloroprene being discontinued altogether. As a result, adhesives formulators are looking for a cost-efficient alternative with equal performance. Pearlstick TPU is ideal—with very low crystallization rate, good heat resistance and peel strength—and specific solutions have been developed to cope with the needs of any application in the fields where polychloroprene is used (footwear and DIY markets). As illustrated below, this new TPU grade also allows for a very long open time and contact bonding at room temperature while formulating adhesives:

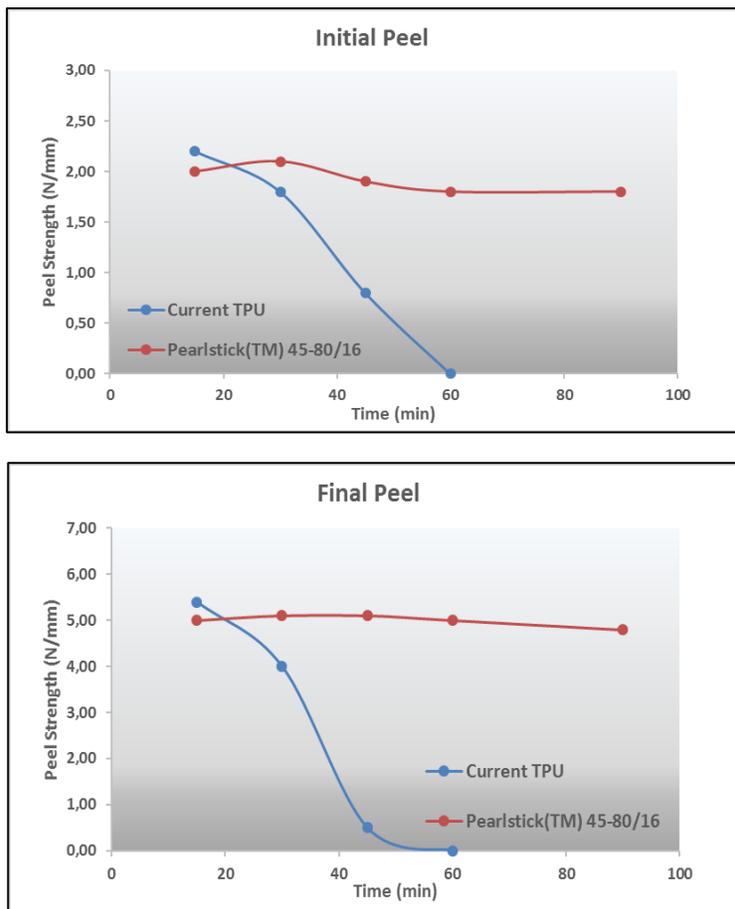


Figure 1-2: Initial and Final Values vs the Open Time

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**Pearlstick 45-80/16** TPU brings about improved processing and cost-efficiency thanks to the two, above-mentioned features, during the formulation of adhesives. Pearlstick 45-80/16 TPU is a more sustainable and safer solution as it can be formulated based on more environmentally-friendly solvents, avoiding, for example, toluene or cycloheptane. This TPU could be applied on just one face avoiding the need to apply it to both sides to achieve final bonding.

	Polychloroprene adhesive	Pearlstick® 45-80/16	Primers
TR	Regular-Poor	Good	Yes (in TPU for adhesives)
Rubber	Good	Good	Yes (in TPU for adhesives)
PVC	Poor	Very good	No
PVC foam, TPU, PUR foam	Poor	Good	No
EVA	Regular	Good	Yes
Polyamide (Nylon), Polyester	Poor	Good	Yes
Textiles	Good	Good	Need two coats
Natural rubber	Good	Good	Yes (in TPU for adhesives)

For more information, please visit our web site: [www.lubrizol.com/Engineered-Polymers](http://www.lubrizol.com/Engineered-Polymers)

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