

Wingtack® 10 Liquid Tackifying Resin

Description

When you need cold-temperature tack or viscosity reduction you know how valuable a liquid hydrocarbon resin can be to your adhesive system.

Liquid tackifying resin Wingtack 10 enhances the performance of low- T_g adhesives without creating the migration or shelf-life problems that process oils frequently cause.



Table 1. Typical properties of Wingtack 10

<i>Property</i>	<i>Typical Value</i>
Brookfield Viscosity, cps @ 25 °C	30,000
Ring & Ball Softening Point, °C	10
Gardner Color (50% in Toluene)	1.5
Specific Gravity @ 25 °C	0.9
Glass Transition Temperature, °C (T_g)	-31
Molecular Weight, Mw, Daltons	500

It is common practice to include process oil in pressure sensitive adhesive (PSA) formulations for cost reduction, and they can help to keep the T_g low. However, this frequently comes at the price of lower adhesive heat resistance and reduced adhesive stability due to the migration of oil to the adhesive interface. At high loadings of process oil migration can result in lower peel, tack and shear in your adhesive system.

Wingtack 10 can help you achieve the low-temperature performance your application requires and can give you a PSA with maximum performance and stability.

To demonstrate the differences in performance between Wingtack 10 and process oil, a series of hot melt pressure sensitive adhesives (HM PSA) was made, coated and tested according to PSTC methods. The formulations are shown in Table 2.

Table 2. Adhesive Formulations

	<i>Wingtack 10</i>		<i>Process Oil</i>	
	Low	High	Low	High
SIS	35	35	35	35
Wingtack Extra	57.5	50	57.5	50
Wingtack 10	7.5	15	0	0
Process Oil	0	0	7.5	15

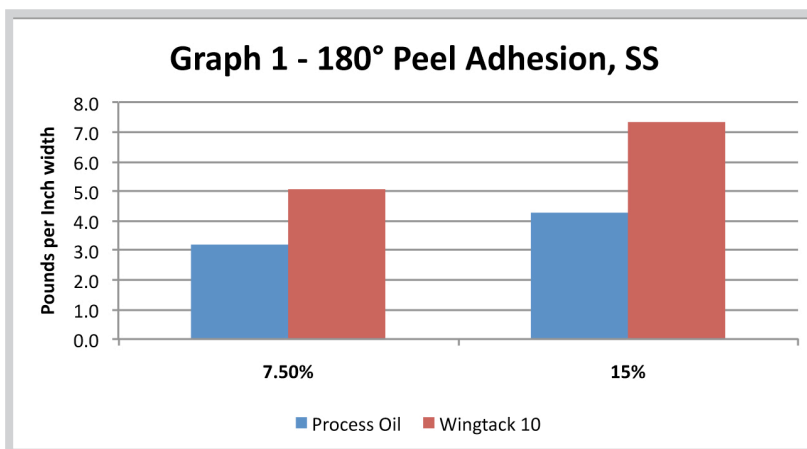
TECHNICAL UPDATE

Wingtack® 10: Liquid Tackifying Resin

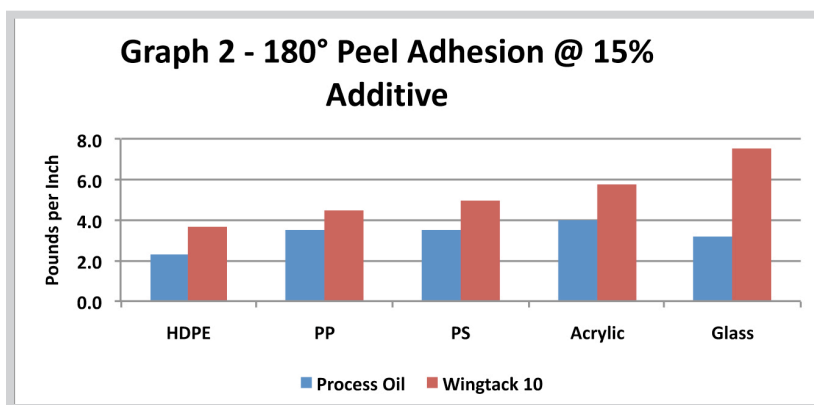


All four adhesives were made on a sigma-blade mixer at 350 °F (177 °C) and then coated on a hot melt coater laminator. The adhesive thickness was a nominal 0.9 mils (22 microns) and the adhesive was laminated to 2 mil (50 micron) PET.

Graph 1 demonstrates the significantly better peel adhesion on stainless steel (SS) that is achieved when using Wingtack 10 compared to process oil. The performance of the adhesives at low and high levels of liquid additive are more than 50% better with the Wingtack 10 compared to the process oil. And this behavior is not just limited to stainless steel.



Graph 2 illustrates the increased peel adhesion to multiple surfaces that Wingtack 10 can yield at the high loading level versus process oil at the same level.



As seen in graphs 3, 4 and 5, the improvement in adhesion does not come at the expense of tack, holding power or heat resistance (SAFT) as the Wingtack 10 containing systems clearly outperform the oil systems time after time.

TECHNICAL UPDATE

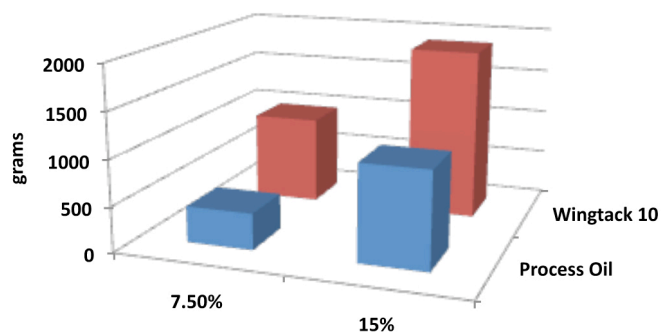
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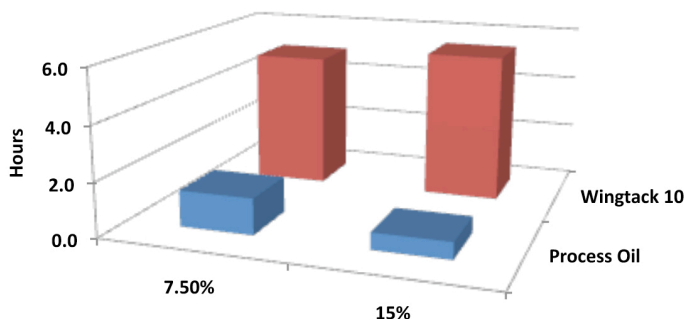
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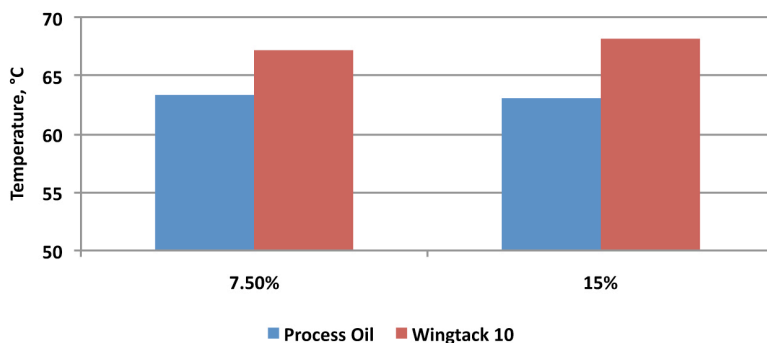
Graph 3 - Polyken Probe Tack



Graph 4 - Holding Power, Stainless Steel



Graph 5 - SAFT



Conclusion

Wingtack 10 provides superior performance compared to process oil in low- T_g block polymer pressure sensitive adhesives.