

The Preamble Is Not A Limitation

- The claims are specific AND the body of the claim is structurally complete:

22. A hot melt adhesive composition comprising:

a) about 10% by weight to about 50% by weight of at least one hydrocarbon **tackifying resin** derived, at least in part, from dicyclopentadiene and **having a glass transition temperature of greater than about 65° C.;**

=

10-50% of a tackifier that will begin to flow when heated to greater than 65°C and will solidify at room temperature.

b) about 10% by weight to about 80% by weight of at least one **thermoplastic base polymer** selected from the group consisting of copolymers and terpolymers of ethylene; amorphous polyalphaolefins, homogenous ethylene/α-olefin interpolymers, and mixtures thereof.

=

10-80% of a polymer that will soften when heated and will solidify at room temperature.

The Prior Art Compositions are Hot Melt Adhesives

- Litz explains that the combination of tackifier, polymer and wax results in a hot melt adhesive and varying the amounts alters the properties.

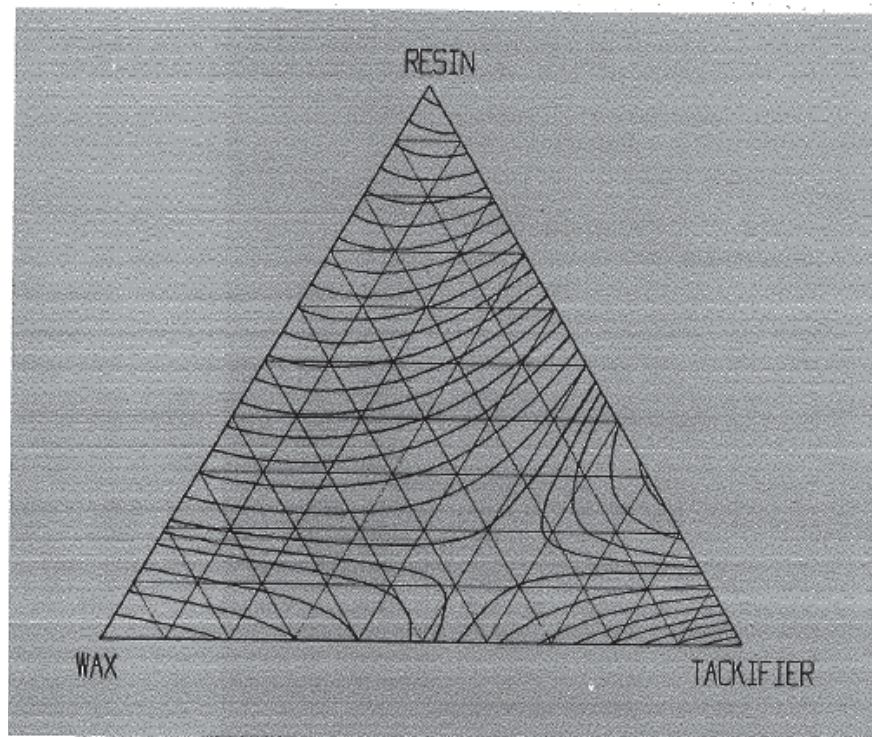


Figure 2 — Computer-developed viscosity-composition profile for tertiary hot melt adhesive systems.

Formulating with Computers. Perhaps the most exciting development on the horizon for hot melts is the use of computers to determine the performance characteristics and physical properties of innumerable compositions. The computer could be used to develop a hot melt adhesive formulation, then optimize the system according to required performance parameters. Proper programming will also enable the formulator to determine replacements for raw materials with a minimal effect on performance.

An example of the virtually limitless versatility of the computer is illustrated in Figure 2. Any tertiary hot melt adhesive system is selected. The viscosity of each of the three components is determined individually, and at several intermediate compositions. The computer can then map out the melt viscosity at any composition of the given polymer, tackifier, and wax.

The Eastotac Compositions Anticipate the Claims

22. A hot melt adhesive composition comprising:

Table 3
General Composition Ranges for *Eastotac* Resins
in Hot Melt Adhesives

	Materials	Compositions, % by Weight		
		PE Base	APP Base	EVA Base
a) about 10% by weight to about 50% by weight of at least one hydrocarbon tackifying resin derived, at least in part, from dicyclopentadiene and having a glass transition temperature of greater than about 65° C.;	Eastotac resin	10-40	30-50	30-60
	Low-molecular-weight polyethylene wax	60-90	0-20	—
b) about 10% by weight to about 80% by weight of at least one thermoplastic base polymer selected from the group consisting of copolymers and terpolymers of ethylene; amorphous polyalphaolefins, homogenous ethylene/α-olefin interpolymer, and mixtures thereof.	Amorphous polyolefin	—	50-70	—
	Ethylene-vinyl acetate copolymer	—	—	30-50
	Petroleum wax or Fischer-Tropsch wax	—	—	0-20
	Antioxidant	0.25-0.5	0.25-0.5	0.25-0.5

Fuller Argues the Preamble Is Limiting

- Fuller argues that Henkel has not shown the Exxon composition would function as a “hot melt adhesive.”
- But Henkel has shown, via Dr. Hsu, that the Exxon composition would function as a hot melt adhesive, which is consistent with Litz.

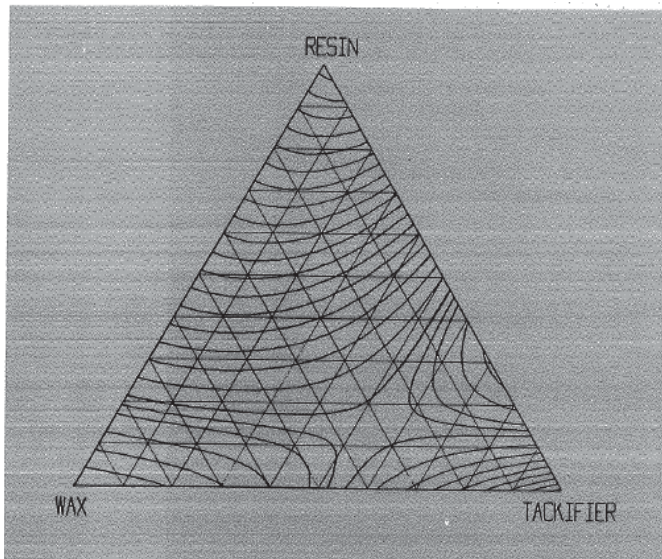


Figure 2 — Computer-developed viscosity-composition profile for tertiary hot melt adhesive systems.

Inter Partes Review of U.S. Patent No. 6,833,404
Case IPR: Unassigned
Declaration of Shaw Ling Hsu, Ph.D. (Ex. 1015)

68. Specifically, the Exxon Reference discloses a hot melt composition comprising 40% by weight of a hydrocarbon tackifying resin, 20% by weight of Escorene UL 7750 as a thermoplastic base polymer, and 40% by weight of 158 °F MP paraffin wax. (Exxon Reference (Ex. 1003) at 2, FN 1.)

The Know-How Was in the Prior Art

- Litz, Kraus, and others provided the knowledge to increase the peel value to greater than 70°C.

Inter Partes Review of U.S. Patent No. 6,833,404
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22. By June 1998, it was known that the use of tackifiers in a hot melt adhesive would increase the use temperature of the adhesive, and particularly, using higher T_g tackifiers would increase the overall mechanical strength of the adhesive, and therefore increase the peel value and heat resistance of the adhesive. (See, e.g., Kraus et al., *Tack and Viscoelasticity of Block Copolymer Based Adhesives*, J. Adhesion 10:221-36 (1979) ("Kraus") (Ex. 1018), Figure 1.) An adhesive with a higher T_g tackifier was thus known to deform at a higher temperature, which was preferable in certain applications. In addition to increasing peel value by using a higher T_g tackifier, it was routine in the art to increase peel value by varying the thermoplastic polymer and adding wax.

Tack and Viscoelasticity of
Block Copolymer Based Adhesives[†]

G. KRAUS, K. W. ROLLMANN and R. A. GRAY

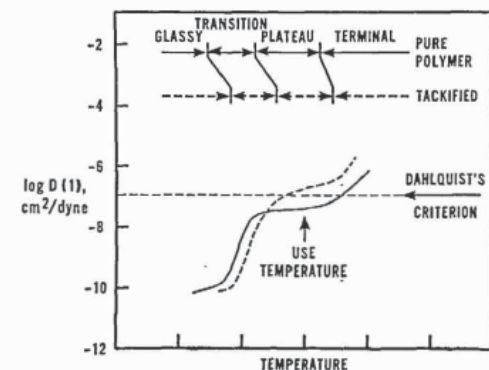


FIGURE 1 One second creep compliance vs. temperature of a high molecular weight amorphous polymer before (—) and after (---) incorporation of a tackifier.

The Prior Art Compositions are Hot Melt Adhesives

- Litz explains that the combination of tackifier, polymer and wax results in a hot melt adhesive and varying the amounts alters the properties.

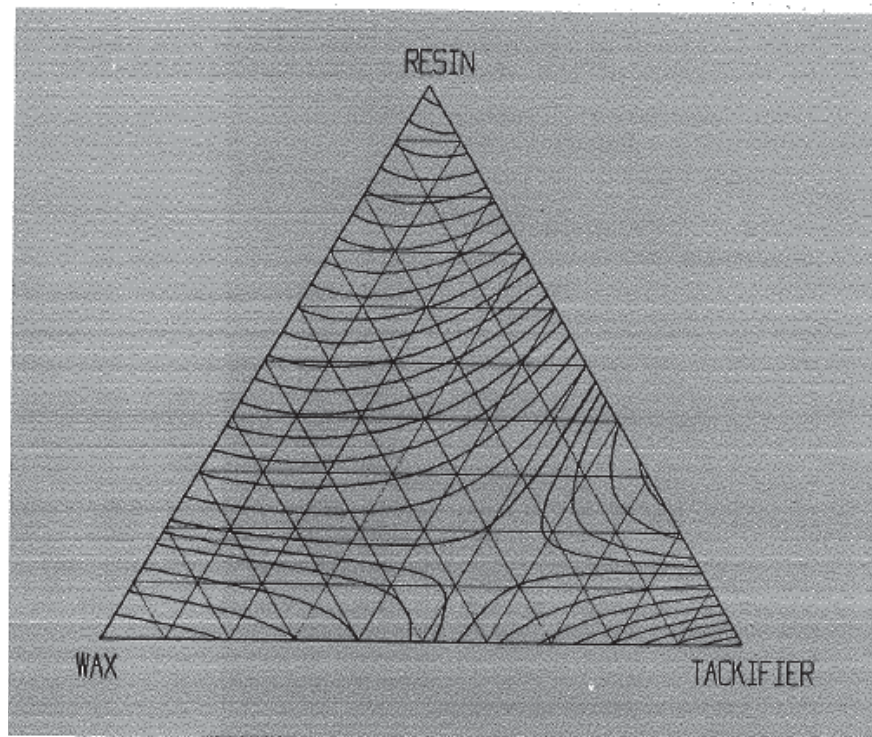


Figure 2 — Computer-developed viscosity-composition profile for tertiary hot melt adhesive systems.

Formulating with Computers. Perhaps the most exciting development on the horizon for hot melts is the use of computers to determine the performance characteristics and physical properties of innumerable compositions. The computer could be used to develop a hot melt adhesive formulation, then optimize the system according to required performance parameters. Proper programming will also enable the formulator to determine replacements for raw materials with a minimal effect on performance.

An example of the virtually limitless versatility of the computer is illustrated in Figure 2. Any tertiary hot melt adhesive system is selected. The viscosity of each of the three components is determined individually, and at several intermediate compositions. The computer can then map out the melt viscosity at any composition of the given polymer, tackifier, and wax.

All Claimed Compositions Will Function As Hot Melt Adhesives

- Hot melt adhesives flow when heated and form a bond when cooled, and are generally comprised of a tackifying resin, base polymer, and optionally a wax. (Hsu Decl. (Ex. 1015) at ¶ 15.)

22. A hot melt adhesive composition comprising:

a) about 10% by weight to about 50% by weight of at least one hydrocarbon **tackifying resin** derived, at least in part, from dicyclopentadiene and **having a glass transition temperature of greater than about 65° C.;**

= **10-50% of a tackifier** that will begin to flow when heated to greater than 65°C and will solidify at room temperature.

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= **10-80% of a polymer** that will soften when heated and will solidify at room temperature.

- Fuller does not attempt to argue that the *claimed* compositions will not always be hot melt adhesives, just that *all* compositions comprising a resin and a polymer are not hot melt adhesives.