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(54) **HIGH COHESIVE STRENGTH POLYOLEFIN CONSTRUCTION ADHESIVE**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,329,468 B1 12/2001 Wang
6,627,723 B2 9/2003 Karandinos et al.
6,653,385 B2 11/2003 Wang et al.
7,067,585 B2 6/2006 Wang et al.
7,067,603 B1 6/2006 Karandinos et al.
7,262,251 B2 8/2007 Kanderski et al.
8,623,480 B2 1/2014 Davis
8,709,191 B2 4/2014 Hughes et al.
8,921,474 B2 12/2014 Alper et al.
9,115,299 B2 8/2015 Hu et al.
2003/0096896 A1 * 5/2003 Wang C09J 123/10
524/425
2004/0122196 A1 * 6/2004 Pierini C08F 110/06
526/351
2005/0054779 A1 3/2005 Zhou
2005/0054780 A1 3/2005 Zhou et al.
2007/0142801 A1 * 6/2007 Zhou C09J 123/02
604/366
2010/0305259 A1 * 12/2010 Rodriguez C09J 123/10
524/504
2011/0021102 A1 1/2011 Inoue et al.
2013/0202902 A1 8/2013 DeJesus et al.
2014/0235127 A1 8/2014 DeJesus et al.
2014/0358100 A1 12/2014 Remmers et al.
2015/0024649 A1 1/2015 Czaplewski
2015/0299526 A1 10/2015 Gray et al.

FOREIGN PATENT DOCUMENTS

WO WO 2013/039261 3/2013
WO WO 2014/014491 1/2014
WO WO 2015/051416 4/2015

OTHER PUBLICATIONS

Sustic, A., et al.; Journal of the Adhesive and Sealant Council, vol. XX, No. 2, 1991, p. 41-58.*
Sustic, A.; Adhesives Age, Nov. 1992, p. 1-5.*
ExxonMobil; Escorez® Tackifier Resins Product Safety Summary, 2016.*
Malpass, D.B., et al.; Introduction to Industrial Polypropylene: Properties, Catalysts, Processes; 2012, p. 1-4.*
Maier, C., et al.; Polypropylene: The Definitive User's Guide and Databook, 1998, p. 268-269.*

* cited by examiner

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(57) **ABSTRACT**

The invention includes a hot melt adhesive composition based on polyolefin polymers that can be used for construction applications in a disposable absorbent article. The olefin based hot melt adhesive composition has surprisingly good cohesive strength and a low odor.

21 Claims, No Drawings