



US006339112B1

(12) **United States Patent**
Kauffman et al.

(10) **Patent No.:** **US 6,339,112 B1**
(45) **Date of Patent:** **Jan. 15, 2002**

(54) **RADIATION CURABLE COMPOSITIONS
COMPRISING METALLOCENE
POLYOLEFINS**

(75) Inventors: **Thomas F. Kauffman**, Woodbury;
John P. Baetzold, North St. Paul;
Margarita Acevedo, Minneapolis, all of
MN (US)

(73) Assignee: **H.B. Fuller Licensing & Financing
Inc.**, St. Paul, MN (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/191,612**

(22) Filed: **Nov. 13, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/065,310, filed on Nov. 13,
1997.

(51) **Int. Cl.**⁷ **C08F 2/50**; C09D 123/08;
C08L 23/08; C08J 3/28

(52) **U.S. Cl.** **522/95**; 522/110; 522/111;
522/112; 522/113; 522/148; 522/158; 522/159;
522/161; 522/120; 522/121; 522/46; 522/36;
522/39; 522/149; 526/348; 526/348.2; 526/348.3;
526/348.4; 526/348.5; 526/348.6; 526/348.7

(58) **Field of Search** 522/110, 111,
522/112, 148, 149, 158, 161, 113, 120,
121, 95, 159, 36, 39, 46; 526/126, 170,
171, 348, 348.2, 348.3, 348.4, 348.5, 348.6,
348.7

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,485,226 A 11/1984 Noll et al.

5,112,882 A 5/1992 Babu et al.
5,202,361 A 4/1993 Zimmerman et al.
5,209,971 A 5/1993 Babu et al.
5,298,708 A 3/1994 Babu et al.
5,397,843 A 3/1995 Lakshmanan et al.
5,407,970 A 4/1995 Peterson et al.
5,530,054 A 6/1996 Tse et al.
5,548,014 A 8/1996 Tse et al.
5,559,164 A 9/1996 Babu et al.

FOREIGN PATENT DOCUMENTS

EP 0301516 2/1989
EP 0 620 247 A1 4/1994
EP 0707954 4/1996
EP 0 707 954 A3 * 4/1996 B32B/27/08
EP 0738927 10/1996
EP 0891991 1/1999
EP 0891993 1/1999
WO WO 93/11184 6/1993
WO WO 96/20919 7/1996
WO WO 98/45344 10/1998

* cited by examiner

Primary Examiner—Susan W. Berman

(57) **ABSTRACT**

The present invention relates to radiation curable compositions comprising at least one metallocene polyolefin. The radiation curable compositions are useful for a variety of applications, particularly as coatings and adhesives. The radiation curable composition may comprise a single metallocene polyolefin, or blend thereof. The ultraviolet curable compositions further comprise at least one photoinitiator and/or at least one photoinduced coupling agent. For pressure sensitive adhesive applications, the radiation curable composition also preferably comprises other ingredients such as a tackifying resins and plasticizers.

26 Claims, 3 Drawing Sheets