



US005679840A

**United States Patent** [19]**Knöfel et al.**[11] **Patent Number:** **5,679,840**[45] **Date of Patent:** **Oct. 21, 1997**[54] **FRACTIONATION AND PURIFICATION OF AROMATIC POLYAMINE MIXTURES AND THE USE THEREOF**[75] **Inventors:** **Hartmut Knöfel**, Odenthal; **Michael Brockelt**, Leverkusen, both of Germany[73] **Assignee:** **Bayer Aktiengesellschaft**, Leverkusen, Germany[21] **Appl. No.:** **623,240**[22] **Filed:** **Mar. 28, 1996**[30] **Foreign Application Priority Data**

Apr. 7, 1995 [DE] Germany ..... 195 13 146.0

[51] **Int. Cl.<sup>6</sup>** ..... **C07C 209/86**[52] **U.S. Cl.** ..... **560/347**; 564/315; 564/331;  
564/332; 564/333; 564/334; 564/437; 564/450;  
564/451[58] **Field of Search** ..... 564/315, 331,  
564/332, 333, 334, 437, 450, 451; 560/347[56] **References Cited****U.S. PATENT DOCUMENTS**

4,087,459	5/1978	Knöfel et al. ....	564/331
4,914,236	4/1990	Knöfel et al. ....	564/334
4,924,028	5/1990	Knöfel et al. ....	564/331
5,196,591	3/1993	Knöfel et al. ....	564/331
5,359,141	10/1994	Knöfel et al. ....	564/331

**FOREIGN PATENT DOCUMENTS**

31423	7/1981	European Pat. Off. .
161600	11/1985	European Pat. Off. .
2238319	2/1973	Germany .
1170610	11/1969	United Kingdom .

**Primary Examiner**—Richard L. Raymond  
**Attorney, Agent, or Firm**—Joseph C. Gil[57] **ABSTRACT**

The invention relates to a process for the fractionation and purification of aromatic polyamine mixtures and their use.

**14 Claims, 4 Drawing Sheets**