

**Method for continuous polymerization of diene elastomer with
lithium amide initiator**

The invention relates to a process for the continuous synthesis of a diene elastomer by means of n reactors r_1 to r_n , considered to be continuous stirred-tank reactors, which are equipped with an internal stirring system and which are arranged in series, n varying from 2 to 15, preferably from 2 to 9, the reactor r_1 being fed by an input solution comprising a solvent, one or more monomer(s), an anionic polymerization initiator chosen from lithium amides and a polar agent, one or more of the reactors r_2 to r_n additionally being optionally fed by reinjection of a purified solution comprising solvent and/or monomer(s) and/or polar agent, the temperature of each reactor varying from 20°C to 150°C, preferably varying from 30°C to 120°C, and being greater than or equal to the temperature of the reactor which immediately precedes it, the temperature of the reactor r_n being greater than the temperature of the reactor r_1 , the diene elastomer obtained exhibiting a polydispersity index varying from 1.1 to 1.7.

[NO FIGURE]